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Urban environmental quality and human wellbeing—a social geographical perspective

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Abstract

Concern over the quality of modern life is a characteristic of contemporary society. This paper explains the social geographical approach to research into quality of life and urban environmental quality. A five-dimensional model for quality of life research is presented, and a number of key conceptual and methodological issues examined. Two exemplar case studies are employed to illustrate the application of the five-dimensional social geographical perspective in a real world context. Finally, the potential usefulness of quality of life research is assessed, and several conclusions advanced for future research.

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1. Introduction

Concern over the quality of modern life is a characteristic of contemporary society. Social commentary of all kinds is replete with references to the quality of modern living. A major reason for this growing interest in issues relating to life quality is the *paradox of affluence* in modern societies in which concern over the quality of life has increased proportionately with technological progress and increases in income. People in developed countries have come to realise that *quality of life* is not necessarily a simple function of material wealth. Growing awareness of the importance of other factors, including the social, political and environmental health of a nation, has led to the search for indicators, other than those based on GNP, that will reflect more adequately the overall health of a nation and the wellbeing of its citizens.

The meaning of the phrase quality of life differs a good deal as it is variously used but, in general, it is intended to refer to either the conditions of the environment in which people live, (air and water pollution, or poor housing, for example), or to some attribute of people themselves (such as health or educational achievement) (Pacione, 1982; Hills, 1995; Benzeval et al., 1995).

Central to this developing interest in quality of life is research into the relationship between people and their everyday urban environments. Seeking to understand the nature of the *person–environment relationship* is the quintessential geographical question that lies at the core of the sub-discipline of social geography. In the specific context of the built environment, this can be interpreted as a concern with the degree of congruence or dissonance between city dwellers and their urban surroundings (Pacione, 1990; Michelson, 1997).

The focus on environmental quality has emerged as a key area for research in urban social geography, particularly for research undertaken from an applied or problem oriented perspective. Accordingly, within

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urban social geography considerable effort has been directed to assessing the quality of different residential environments (Pacione, 1984). Within this field of research, special attention has been afforded to social conditions in large urban areas, with particular interest focused on situations characterised by low levels of life quality. In the UK, for example, the continuing decline in status of some inner city areas has been revealed by analyses which showed high concentrations of the unemployed, the low skilled, the aged and ethnic minorities accompanied by high levels of overcrowding, amenity deficient housing, and out-migration (Pacione, 1986, 1989, 1995a, 1999a). Similarly, in the USA a prime consideration for urban social geography has been the problems experienced by large cities and conurbation cores suffering the effects of a declining economic and fiscal base and deteriorating physical structure (Rusk, 1994; Midgley and Livermore, 1998; Waste, 1998). In short, the study of conditions at the disadvantaged end of the quality of life spectrum forms a key area of research in contemporary urban social geography (Wilson, 1969; Smith, 1994; Mingione, 1996).

Geographers have introduced the concept of *territorial social indicators* to identify and analyse socio-spatial variations in quality of life at different geographic scales, ranging from global to local. Most

of the research using territorial social indicators has employed objective measures derived either from primary field surveys or from analysis of secondary, normally census-based, data sets. Collectively, this line of research has contributed valuable insights into such questions as the extent and distribution of sub-standard housing, and the differential incidence of deprivation within the city.

The objective perspective has been paralleled, however, by the development of work using subjective social indicators, and an approach focused on the concept of urban liveability (Pacione, 1990, 1993). In contrast to the objective definition of urban environmental quality urban liveability is a relative rather than absolute term whose precise meaning depends on the place, time and purpose of the assessment, and on the value system of the assessor. This view contends that quality is not an attribute inherent in the environment but is a behaviour-related function of the interaction of environmental characteristics and person characteristics. It is axiomatic that in order to obtain a proper understanding of urban environmental quality it is necessary to employ both objective and subjective evaluations. In other words, we must consider both the *city on the ground* and the *city in the mind*.

We can illustrate this precept with reference to two case study examples of geographical research into

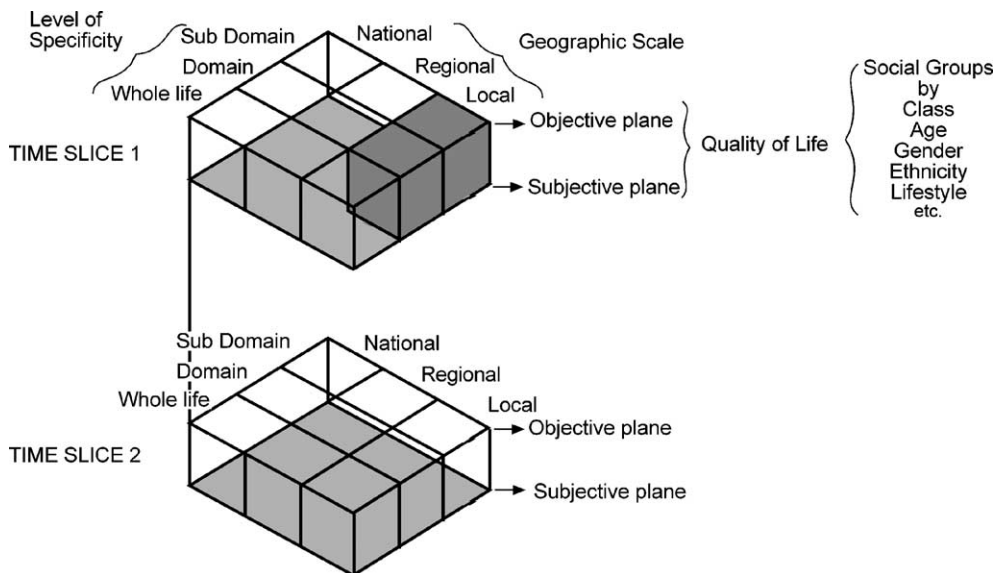


Fig. 1. A five-dimensional structure for quality of life research.

urban environmental quality. Before doing so, however, it is necessary to consider a number of more general key conceptual and methodological issues. These relate to:

- (a) choice of indicator type;
- (b) indicator specificity;
- (c) scale of analysis;
- (d) the ‘fifth dimension’ of social groups;
- (e) the composition of life quality;
- (f) the measurement conundrum;
- (g) structural models of life quality;
- (h) theories of urban impact.

We can examine the first four of these issues with reference to [Fig. 1](#) which represents a five-dimensional structure for quality of life research.

2. Choice of indicator type

Any definition of life quality must include two fundamental elements. These are an internal psychological–physiological mechanism that produces the sense of gratification, and external phenomena that engage that mechanism. Thus, there is growing acceptance among policy makers that two quite distinct types of social indicators are appropriate for measuring societal and individual wellbeing. The first comprise objective indicators describing the environments within which people live and work (see, for example, [Liu, 1976](#)). These may deal with issues such as levels of health care provision, crime, education, leisure facilities and housing. The second are subjective indicators intended to describe the ways in which people perceive and evaluate conditions around them (for example, [Campbell et al., 1976](#)).

To date, most social indicator research has focused on either objective or subjective measures. Relatively few empirical attempts have been made to combine the two approaches in a single study despite the fact that one type of indicator can contribute to the interpretation of the other. Thus, a fuller understanding of the meaning of objective health status would be facilitated by complementary data covering people’s perceptions of their own health, the care they receive, or the health services available to them. Furthermore, in terms of validity and reliability there is no conclusive evidence of the superiority of one type of indicator

over the other. This, together with the fact that the existence of a single direct relationship between objective and subjective measures of life quality has yet to be demonstrated, reinforces the argument for employing both types.

An important question relates to the nature of the relationship between objective and subjective indicators of life quality. Empirical evidence generally shows the extent of congruence between objective and subjective indicators of the same phenomenon to vary from a strong relationship to one that is weak or non-existent. Given the complex nature of cognition, however, it is hardly surprising that there should be divergence between perceived conditions and conditions measured by means of objective indicators.

Many factors, including personal and social characteristics such as age, income, education and health status, intervene between the objective world and an individual’s evaluation of it, and these may act as filters to distort objective conditions. Thus, individual perceptions transform what was initially seen as a universal objective situation into a highly individualistic interpretation of that condition. Individual experience is also a key factor which will affect the perception of a specific domain. For example, the experience of being a victim of crime is likely to have a deep and lasting effect on the individual’s perception of safety in his home or neighbourhood irrespective of the level of crime there measured by objective indices. Another factor which may be of importance in the objective–subjective relationship is the aspiration level or expectations of the individual. This helps to explain the relatively high satisfaction expressed by an individual whose objective situation is consensually poor. The notion of accommodation is another variable that may influence the relationship between objective and subjective conditions. This suggests that in a fixed situation an individual’s satisfaction with a condition may increase over time by accommodation to that situation, thus helping to explain why people trapped semi-permanently in poor objective situations express relatively high levels of satisfaction with their conditions. Further factors that intervene between objective and subjective assessments of life quality include the individual’s cultural background that produces the standard of comparison against which objective conditions are measured. Though most obviously of importance at the international scale this may also influence

different ethnic or social groups within a city. A final factor to be noted is the problem of scale discordance. This recognises that while objective social indicators are collected for well-defined territorial units it is unlikely that the territorial base of an individual's perception will coincide exactly with the boundaries of the administrative unit used for the collection of objective data. The scale discordance factor may affect all aspects of perceived well being that incorporate a territorial component including general notions of neighbourhood satisfaction. Furthermore, the existence of a simple direct relationship between objective and subjective measures of life quality would clearly render one or other type of indicator superfluous, just as the absence of such an association underlines the case for using both objective and subjective indicators.

3. Indicator specificity

As well as the objective–subjective distinction social indicators may also be classified according to their degree of specificity or generality (Fig. 1). This refers to the proportion of the life space of an individual or group to which a particular indicator is relevant. For example, one subjective indicator may be concerned with a quite specific experience such as the quality of the local bus service, while another may be concerned with a more general type of experience such as satisfaction with one's community. At the most general level, an indicator may be related to evaluations of one's overall life quality. Objective indicators will also vary in level of specificity ranging, for example, from the quality of the interior fittings in a house to the availability of public facilities in the locality.

4. Scale of analysis

Public authorities have long sought to employ social indicators to gauge the 'health' of the nation. For geographers, the most serious omission from the early approaches was any explicit consideration of the spatial scale of reference. The dangers of such spatial myopia are apparent. Put simply, preoccupation with aggregate national conditions hides the local situation where the real human-scale problems are embedded. National goals and indicators often have meaning only

if they become ways of referring to more specific goals and indicators that relate to sub-national areas. Otherwise, they may have little more significance than a report on the national average weather.

Despite a declared interest in area-based or territorial social indicators most of the major statements and reports on quality of life published up to the 1970s were almost entirely non-spatial in content. Only since the entry of geographers into the field of quality of life research has the spatial dimension been added to the earlier two-dimensional consideration of social conditions against time. Clearly, just as the quality of individual life can be assessed at various levels so society can be assessed at different geographic scales ranging from the individual through the group or local scale to the city, regional, national and international.

Whatever scale is chosen a recurrent problem is that ecological correlations do not necessarily reflect the life concerns of all individuals within the area. This is an inherent difficulty for the spatial or territorial approach to the study of quality of life. The larger the unit of enquiry the greater the potential ignorance of internal variations from the mean position. It follows that, although descriptive pattern identification and mapping at the macro-scale is of value as a pointer to detailed investigation, policy-relevant quality of life indicators are more likely to be derived at the local area scale. Such indicators are also likely to be concerned with specific life domains such as housing conditions, employment or access to public facilities.

5. The fifth dimension of social groups

In addition to the four dimensions relating to indicator type, level of specificity, scale of analysis and time a fifth dimension of importance for quality of life research centres on the quality of life experienced by different social groups in the city. Urban populations may be disaggregated along a large number of planes of division including class, age, lifestyle, gender and ethnicity (Pacione, 2001). There are, in addition, groupings based on behaviour (for example, public transport riders), and common interest (for example, estate residents). To be of real value to both citizens and policy makers quality of life studies must be directed to the appropriate social groups or constituencies.

6. The composition of life quality

Early studies of life quality were concerned mainly with defining the meaning of the concept (for example, [Wingo, 1973](#); [Hornback and Shaw, 1973](#)). More recent investigations have advanced from pedagogic definition of quality of life to identification of the major components of the concept. In addressing this question there are two primary ways of determining the elements of life quality. The first is to derive them from theory (for example, in psychology or sociology). The problem here is that there is no generally accepted social theory setting out the conditions unambiguously defining human well being along with their relative weights. The second method is to attempt to discover elements of quality of life by asking people directly how they view their own state of well being ([Andrews and Withey, 1974](#)). Despite considerable research interest in the direct monitoring of quality of life via survey research this has not yet reached the stage at which it can provide a definitive list of criteria, except for restricted populations. A third approach containing elements of the two primary approaches is by reference to expert opinion or the judgements of scientists and representatives of public views ([Koelle, 1974](#)). The obvious disadvantage is that these people may not reflect the concerns of the population at large as there is little evidence to show that the preferences and priorities of politicians and professionals are congruent with those of people in general.

One guide to what fundamental aspects of society should be isolated as important components of life quality is simply that the set of indicators chosen must be broad enough to include all the most important life concerns of the population whose well being is being investigated. Lists of life concerns have been compiled and utilised by many researchers ([Smith, 1973](#); [Drewnowski, 1974](#); [Pacione, 1980](#)). The close similarity among many of the listings provides support for the intuitive conclusion that the most important life concerns are those relevant to the individual's immediate personal life. The sum total of these life concerns adds up to the quality of life, although it must be noted that the particular value or weight attached to each of the components varies from person to person and between social groups.

7. The measurement conundrum

One of the most pressing problems facing quality of life research is that of measurement. Resolution of this problem is of crucial importance as many quality of life researchers maintain that the concept can be seen as an instrument for policy making and, above all, for social planning. Decision makers tend not to share this view and point out that, because of the scope for researcher bias, the results of quality of life research, may not be suitable for policy making and are only of direct relevance to academic questions such as the testing of conceptual models of life quality. There is therefore an urgent need for more empirical testing of quality of life concepts and models. Explicit recognition must be given to the fact that results may be influenced by, among others:

- (a) the selection of indicators;
- (b) the method of aggregating indicators to one element;
- (c) the weighting or non weighting of indicators;
- (d) the type of measurement technique employed.

A full discussion of these issues is available in [Pacione \(1982, 1995a,b\)](#).

8. Structural models of life quality

The specification of life concerns and determination of how reactions to them may be combined to predict people's sense of overall life quality must necessarily take place within the framework of a conceptual model. Several structural models have been proposed to explain how individuals combine the diverse domain satisfactions into a general feeling of well being or ill being. The simplest model states that satisfaction with life in general is a weighted sum of satisfactions with different domains or aspects of life (for example, job satisfaction) and that, in turn, these domain satisfactions are weighted sums of specific satisfiers and dissatisfiers ([Fig. 2](#)). A more complex formulation is the hierarchy of needs model ([Maslow, 1954](#)). This suggests that certain kinds of need are more basic than other kinds and that until these are reasonably satisfied other considerations have little effect on overall satisfaction.

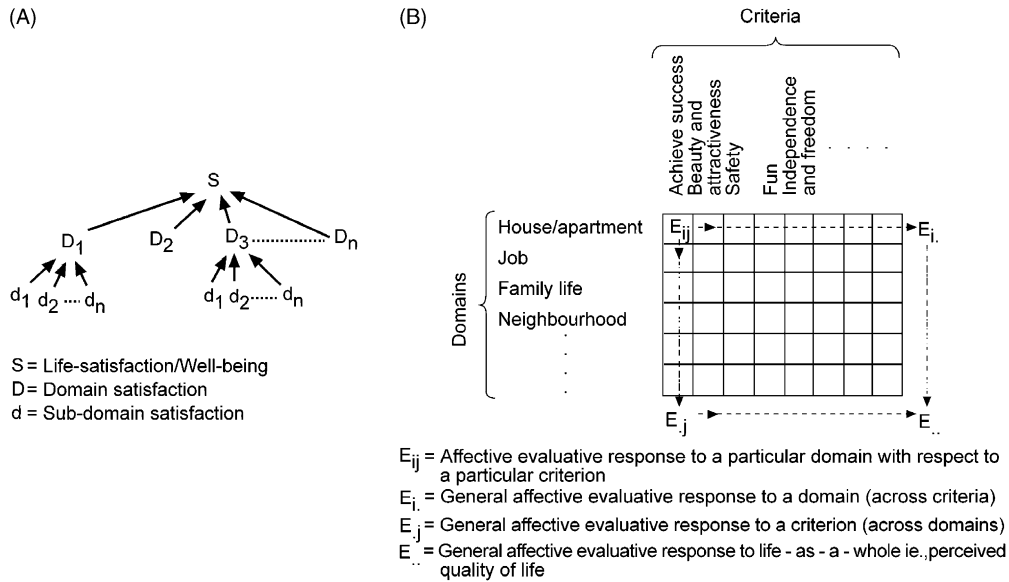


Fig. 2. Two structural models of life quality.

These and other models have attractive features but most geographical research to date has favoured a simple aggregative or linear additive model. This model suggests that somehow individuals ‘add up’ their joys and sorrows about specific concerns to arrive at a feeling about general well being. This process appears to occur in such a way that joys in one area of life may be able to compensate for sorrows in other areas. A possible approach to the problem of assessing the contribution of each domain to overall well being is by means of step-wise multiple regression analysis. This technique has been employed with varying degrees of success. One of the key assumptions underlying the technique, concerning absence of measurement error, is the one most generally ignored in traditional geographic research. The importance of this factor in studies of quality of life is worth reiterating.

9. Theories of urban impact

At least five major theoretical perspectives have been advanced to explain the impact of urban environments on residents. These theoretical perspectives are based on principles of:

(a) human ecology (Wirth, 1938);

(b) subcultures (Fischer, 1984);

(c) environmental load (Milgram, 1970);

(d) behavioural constraints (Lefcourt, 1976);

(e) behaviour settings (Barker, 1968).

Each of the theories identifies a particular aspect of urban life and so contributes to an overall understanding. The five theoretical perspectives can be integrated into a general model built around the concept of stress (Fig. 3), defined as increased wear and tear in the body as a result of attempts to cope with environmental influences (Bell et al., 1976).

In the stress model, the experience or perception of the city is represented as a joint function of the objective environmental conditions (for example, population density, temperature, pollution levels) and the individual characteristics of the person (for example, adaptation level, previous experience, and time in the city). If the perceived environment is outside the individual’s optimal range (for example, if it is over-stimulating, contains too many stressors, constrains behaviour, or offers insufficient resources), stress is experienced which, in turn, elicits coping. If the attempted coping strategies are successful, adaptation and/or habituation occurs, though possibly followed by after effects such as fatigue and reduced ability to cope with the next stressor.

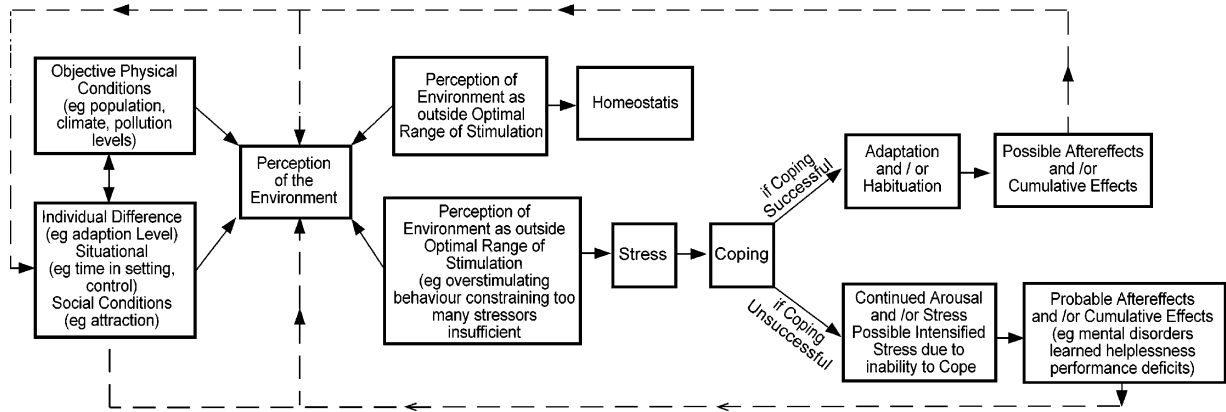


Fig. 3. A stress model of urban impact.

Positive cumulative after effects would include a degree of learning about how to cope with the next occurrence of undesirable environmental stimulation. If the coping strategies are not successful, however, stress and/or arousal will continue, possibly heightened by the person's awareness that strategies are failing. Possible after effects include exhaustion, learned helplessness, severe performance decrements, illness and mental disorders. Finally, in the model, experiences feed back to influence perception of the environment for future events and contribute to individual differences which affect future experiences.

Four general types of environmental stressors have been identified:

- cataclysmic events—for example, geophysical hazards;
- ambient stressors—for example, air and water pollution;
- stressful life events—for example, death in the family;
- daily hassles—for example, noisy neighbours.

For a detailed discussion of each of these stressors see Pacione, 2001 (chapter 19).

Having addressed the major theoretical and methodological issues and established a conceptual framework for geographical research into urban environmental quality and human wellbeing we can now obtain detailed insight into the field by considering two empirical case studies that employ different types of indicator at differing scales.

10. Case study 1: the geography of quality of life in Glasgow

The first case study of social geographical research in the field of quality of life studies is selected to illustrate the use of objective territorial social indicators to examine differential quality of life in the city of Glasgow. In this research, particular attention is focused on conditions at the disadvantaged end of the quality of life spectrum. A combination of statistical and cartographic analysis is employed to identify the nature, intensity and incidence of multiple deprivation in the city.

A set of 64 indicators relating to demographic, social, economic and residential conditions was extracted from the national census for each of the 5374 output areas in Glasgow. The data set was subjected first to univariate analysis to examine the distributions of individual social indicators across the city. While examination of each of the 64 indicators is of both academic and practical utility in its own right, the univariate analyses suggested some degree of statistical and spatial overlap among the revealed patterns. An R-type principal components analysis was used to explore the weave of linkages among the individual distributions, and to provide a conceptually and statistically rigorous composite measure of multiple deprivation. As Table 1 indicates, in this study the principal component was readily identified as an indicator of multiple deprivation.

Calculation of component scores provided a measure of deprivation for each of the 5374 census output

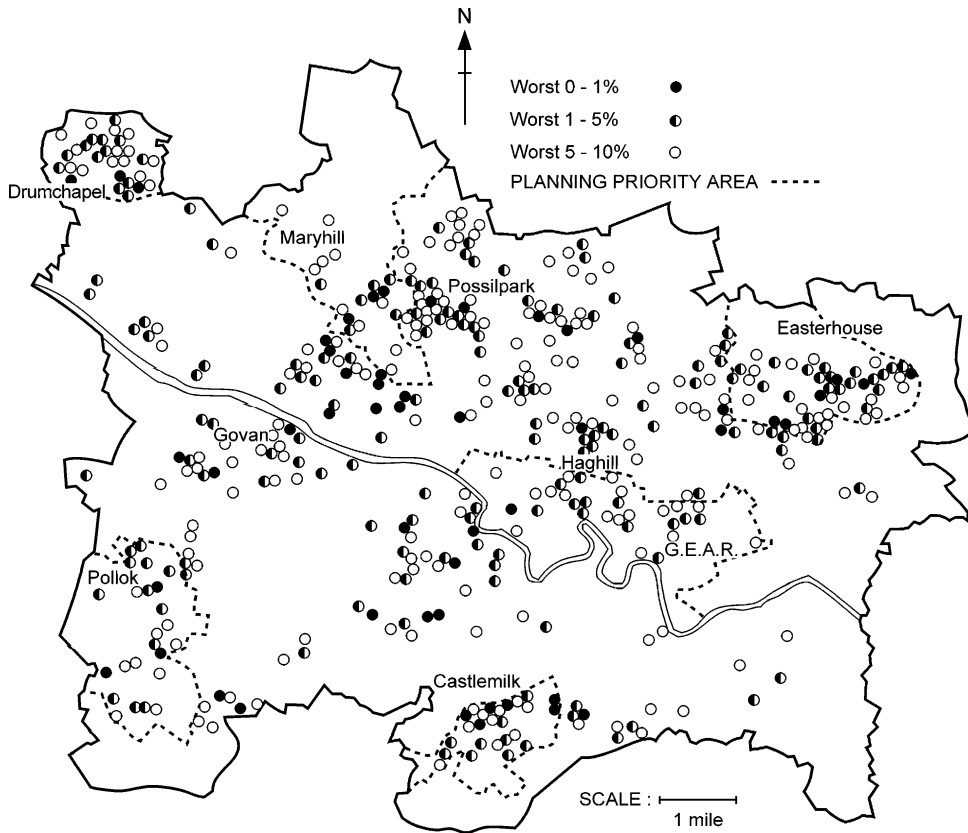


Fig. 4. The geography of multiple deprivation in Glasgow.

areas in the city. Mapping these scores revealed the spatial expression of multiple deprivation in Glasgow (Fig. 4).

This research identified the nature, intensity and incidence of multiple deprivation within the city. In ad-

Table 1
Component structure and loadings—multiple deprivation

Component I: multiple deprivation	
Male unemployment	0.7511
Council housing	0.4896
>1.5 persons per room	0.5183
Household spaces vacant	0.4906
One person < pension age	0.5261
Single parents	0.6617
Travel to work by bus	0.3189
Household head in SEG 7, 10, 11	0.3000
Young children at height	0.6019
Above occupancy norm	0.6935

dition identification of the major loci of deprivation provides a basis for subsequent detailed analyses of particular problems and problem areas. The analytical results also provide a base for critical assessment of policies aimed at alleviating conditions of disadvantage, as well as a framework for future policy formulation.

11. Case study 2: landscapes of fear in the city

The second exemplar of the urban social geography approach to quality of life illustrates the use of subjective social indicators to gauge gender-differentiated fear of crime at the local level within the city.

Fear of crime is a growing social problem, a major policy issue and an important element in the social geography of contemporary cities. For the most

vulnerable sub-groups of the population living in high risk environments the impact of fear of crime on daily living patterns and on general quality of life can be profound. A major obstacle to addressing this social stressor is lack of detailed information on fear of crime at the neighbourhood scale. This research was designed to gauge the nature and extent of fear of crime among male and female residents of a deprived social housing estate on the edge of Glasgow, and to identify the geography of fear within the area.

The research employed an interview procedure to determine the relative importance of crime as a social problem on the estate. For both males and females crime was regarded as the second most serious problem in the area. Related social problems were identified in references to the general unfriendliness of the

Table 2
Rankings of neighbourhood problems

Problem	Overall			Rank
	Males	Females	Total	
Unemployment	83.7	82.9	83.3	1
Poor schooling	26.1	22.0	24.01	8
Bad housing	73.0	70.6	71.08	3
Crime	80.3	79.9	80.1	2
Lack of leisure facilities	53.9	49.9	51.9	4
Lack of play spaces	34.6	38.3	36.5	5
General unfriendliness	32.6	33.0	32.8	6
Bad police relations	30.4	29.0	29.7	7

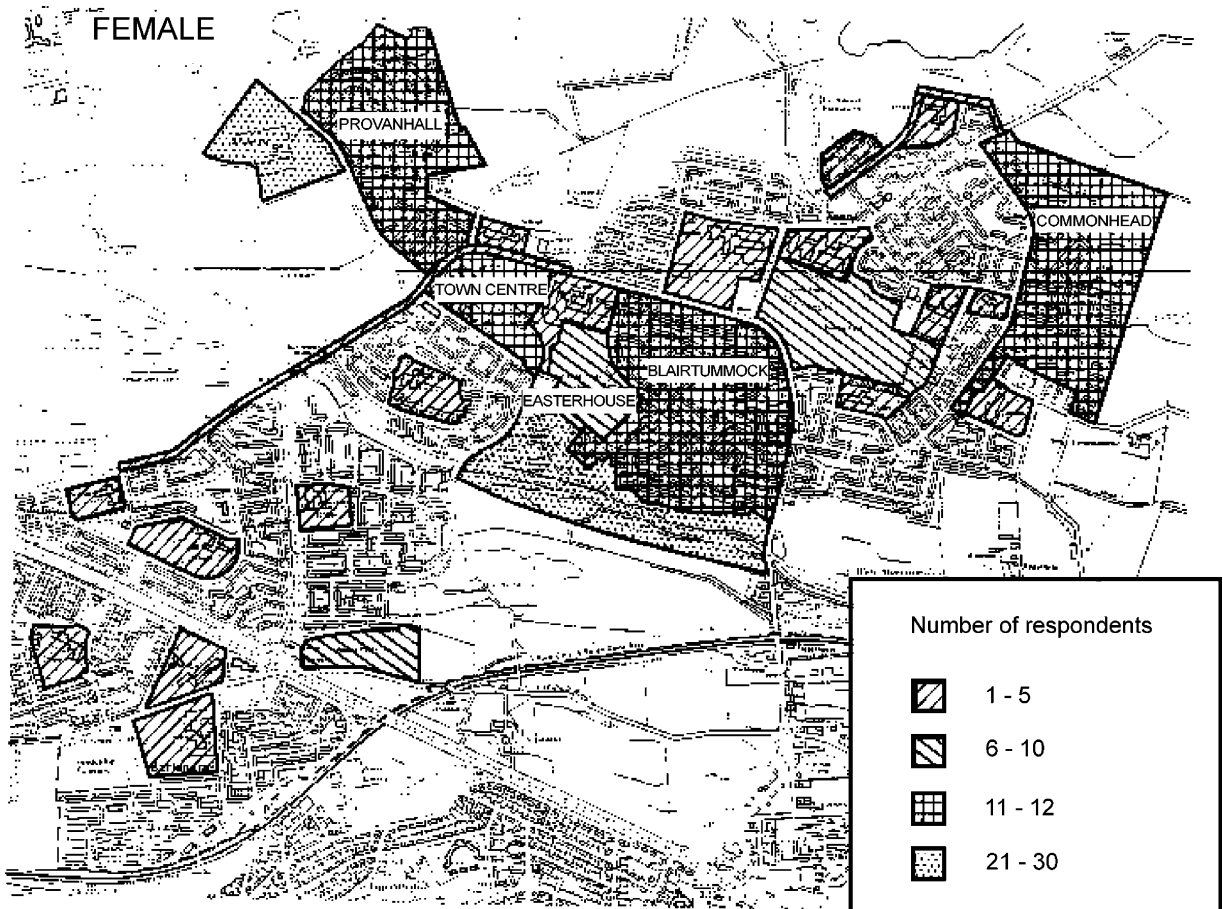


Fig. 5. Danger areas for females in a disadvantaged urban environment.

Table 3
Perceived risk from criminal activities

Nature of risk	Percentage of respondents	
	Males	Females
Assault	56.7	27.4
Sexual assault	0.0	31.5
Burglary	37.8	29.0
Car theft	4.5	5.2
Street theft	0.0	6.9
Arson	1.0	0.0

Table 4
Perceived dangerous spaces by gender

Locations	Percentage of respondents	
	Males	Females
Parks	7.6	19.7
Stigmatised neighbourhoods	34.0	14.9
Bridges/overpasses	0.0	11.9
Playing fields	6.8	9.5
Schools	8.2	7.1
Peripheral roads	0.0	20.8
Town centre	43.4	16.1

locality and bad relations between residents and the police (Table 2). Assault and burglary were the most prevalent crimes reported (Table 3).

Investigation of the fear of crime revealed clear gender-based differences. For most young males the high risk of assault was an accepted part of their lifestyle and living environment. Respondents accepted that they are ‘fair game’ and an automatic target for local gangs. The relative physical weakness of young females fostered a fear of assault and in particular sexual assault. These perceptions of risk conditioned the daily activity patterns of people living on the estate.

Detailed information was also sought on respondents’ cognitive maps of fear in order to identify specific ‘danger areas’ within the estate (Fig. 5). Further, analysis of the characteristics of these dangerous spaces can contribute to the design of policies aimed at reducing fear of crime in the locality (Table 4).

12. The usefulness of quality of life research

The question of the *usefulness* of measuring quality of life or human well being is of central importance in

the current climate in favour of ‘relevant’ or applied research (Pacione, 1999b). Geographers engaged in quality of life research have identified several outputs of value to social scientists and policy makers. These include:

- (a) production of some baseline measures of well being against which we can compare subsequent measures and identify trends over time;
- (b) knowledge of how satisfactions and dissatisfactions are distributed through society and across space;
- (c) understanding the structure and dependence or interrelationship of various life concerns;
- (d) understanding how people combine their feelings about individual life concerns into an overall evaluation of quality of life;
- (e) achieving a better understanding of the causes and conditions which lead to individuals’ feelings of well being, and of the effects of such feelings on their behaviour;
- (f) identifying problems meriting special attention and possible societal action;
- (g) identification of normative standards against which actual conditions may be judged in order to inform effective policy formulation;
- (h) monitoring the effects of policies on the ground;
- (i) promoting public participation in the policy making process.

The causes of urban environmental problems are multidimensional, stemming from the operation of a host of private and public agents, personal circumstances, and environmental conditions. It follows that attempts to address these problems must also be multifaceted, operating at a variety of scales and across all dimensions of life quality. Rather than a single meta-theory or model of environmental quality we should think in terms of a hierarchy of approaches that explore different components of quality of life and identify strategies appropriate to specific problems and socio-spatial contexts.

13. Conclusion—towards the liveable city

Whereas the Greeks thought that the good city was one in which all the free men could participate in

face-to-face government, in modern times criteria of liveability have more usually emphasised economic factors such as job opportunities, efficient transport systems, and sound urban finance. Several writers have sought to leaven this economic perspective by consideration of social or 'human' concerns. These have emphasised the need to ease orientation and movement in the city, to reduce the stresses caused by pollution, crowding, poor housing and stimulus overload, and to design a built environment that is responsive to the varying needs of residents. Clearly, in order to attain the goal of a liveable city, a wide range of social, economic and environmental needs must be satisfied. Not all of these fall within the regulative power of urban geographers, planners and designers. The city is not a closed system but is linked to regional, national and international systems that impinge on the quality of urban life. However, those components that can be manipulated positively must not be overlooked. In order to influence urban liveability successfully geographers and others must first acknowledge the subjectivity of the objective environment. Second, it must be recognised that successful academic research alone is no longer sufficient. To ensure appropriate use of findings by public and private agencies and decision makers, researchers must seek to develop direct channels of communication to link scientific findings to policy objectives. Finally, because of the complexity of the real world and the fact that urban patterns, processes and problems cut across many of the traditional academic boundaries, it should be emphasised that while each of the social sciences can make an individual contribution to urban analysis, a full understanding of urban environmental quality and human well being must be sought beyond the confines of a single discipline. The geographer's experience of both field investigation and social-survey techniques and the traditional synthesising perspective and conceptual and methodological eclecticism of the discipline ensure that the urban social geographer can make a significant contribution to the goal of a liveable city for the 21st century.

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