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**Measuring Urban Life Quality:
Some Methodological Warnings**

by

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Summary

1. Premises and subject of the paper
2. Towards a list of indicators for the 'optimal city'
 - 2.1 Indicators of city effect
 - 2.2 Indicators of city overloading
3. Issues in the optimality evaluation
 - 3.1 From the city effect point of view
 - 3.2 From the overload effect point of view
4. The debate on optimal centrality
5. Towards a 'core list' of city effect and overload indicators
6. Towards a list of optimal centrality indicators
7. Towards a definition of strategy for appropriate spatial urban organisation
8. The appropriate 'ambit' for measuring the urban quality of life
9. The objectives of the Urban Audit projects
10. Misleading risks in the wrong delimitation of area
11. A reference framework for the strategic spatial organisation of the cities system

Measuring Urban Life Quality: Some Methodological Warnings

1. Premises and subject of the paper

The attention to the conservation and betterment of the quality of urban life is ever more lively everywhere in the world.¹ In recent times, attention has also been given to the factors which contribute to the "degradation" of such quality, especially from the environmental point of view. Less studied are the factors which can assure the supply of a satisfactory quality of urban life. Concerning this last approach, it is not simply a matter of supplying a good quality of life in cities, but a good urban quality of life. In other words, it is a matter of taking into account the city, or better the city-effect, as a factor of the quality of life, the lack of which prevents the achievement of targets for quality of life.²

A good urban policy does not forget either of the two conflicting general factors that affect urban quality: the city effect which raises it, and the urban load which depresses it. A good urban policy, rather, tries to optimise both of these factors.

To achieve this optimum situation, a good urban policy needs a supply of good indicators for two purposes: to establish targets in operational terms, and to control (monitor) the situation in relation to those targets. However, progress on making available such instruments of knowledge and control has been very poor. Much has been said about them in academic terms, but little about implementation in statistical terms.

Two recent initiatives of the European Union deal with these questions, and therefore, should be disseminated and assessed by scholars interested in the field of urban quality of life. The first has already been successfully concluded, and the second is at its starting point. The purpose of this paper, then, is to outline these two initiatives.

1. The first is a methodological research on the criteria and modalities for the creation of a system of indicators of urban quality of life, or more simply, "urban indicators". This research was concluded at the end of 1996.
2. The second initiative is the launch of a call for tender relating to the "implementation of an Urban Audit to measure the quality of life in European

¹The initiative of the "International Conference on Quality of Life in Cities" promoted by the National University of Singapore is an evidence of the trend, among many others.

²On this point, I would like to mention the treatment of this problem in a recent work of mine, "The Ecological City and the City Effect". This work discusses the requirements of urban planning for a sustainable city (Archibugi, 1997).

Cities." This audit involves 58 European cities in the 15 countries of the EU. The project is currently at its starting point.³

Within the scope of this paper, it will not be possible to give an in-depth report on both initiatives.⁴ We will limit ourselves, therefore, to looking at the main findings of the first, and emphasising the risks of a bad approach for the second.

2. Toward a list of indicators for the "optimal city"

As said above, the first step of the Actvill research was to deconstruct *City Effect* and *Urban Overload* into their basic components, and from those, derive more specific elements. From these elements, an attempt was made at a first formulation of purely theoretical indicators, the feasibility of which will be verified in a later moment.

2.1 Indicators of City Effect

The background paper of the research suggested the following components of city effect: the demographic component; the use of and access to superior urban services; transport access to superior urban services, public spaces; a mix of spatial functions; urban structure and morphology; and a communication network. They have been further discussed and elaborated to produce appropriate indicators.

In regard to the *demographic component*, themes of investigation have been identified as:

- a) the need to adopt a method of partitioning in which multiple catchment areas for various types of activities (employment, retail, leisure, etc.) are examined and somehow combined in order to arrive at "basins" encompassing the city effect;
- b) the importance of a settlement density as a measure of critical mass;
- c) the question of social structure, both in the sense of sufficient categories of affluent population to support the superior services, and in the sense of social diversity.

In regard to *"superior" urban services*, attention was given to consumer services, producer services, and the public sector. Superior urban services are services that are provided in relation to the major population concentrations needed to support them. Thus, they do not include the "inferior" or everyday services which are spread fairly evenly over the area as a whole. Instead, they can be chosen to reflect the following criteria:

³See the motivations which have guided the launch of this initiative in contract specification of the call for papers (EC, 1997). See also a broad study by Eurostat titled, "Supply and demand of urban statistics in the European Union" (Eurostat, 1997). Other related documents include: Pumain et al, (1991,1992); NUREC, (1995).

⁴For which we call attention to the following documents : the Report of the *Planning Studies Centre* (1996) (for the first); the Contract Specification (EC Commission, 1997), (for the second).

- a) being at the top of the service hierarchy for that particular activity;
- b) size (turnover, employees);
- c) rarity;
- d) cost of provision (high cost limits numbers);
- e) degree of specialisation (quality of employees);
- f) catchment area size (drawing power in terms of user population).

Transport access to superior urban services is also a relevant question. It is tied to the concept of "*daily-ness*", but this in turn must be interpreted in the light of actual frequency and origin of use.

Sufficient public spaces, seen as provision of space that encourages and facilitates the use of the city as a meeting place, involves issues of morphology. Among its aspects, there is also the degree to which mixed uses (including residential) or a centre with a mixture of functional zones provide a sufficient basis for conviviality.

The main aspects of the *mixture of fundamental spatial functions* taken into consideration are:

- a) a sufficiently diversified economic base;
- b) environmental self-sufficiency;
- c) adequate access to the countryside.

In regard to *urban structure and morphology*, the analysis of relative degrees of city effect and overload attached to particular areas will vary (inconsistently), not only with city size, but also with "stage of development". The degree of success urban areas have in retaining or capturing the newer sources of economic growth will also affect this balance.

With respect to *communications networks*, city effect means the attraction of urban areas as offering diversity in terms of employment and the consumption of services. To the extent that these are increasingly provided in a decentralised manner, then the need to be located in an urban area of a certain size is thereby reduced. The 'critical mass' for some type of city effect becomes smaller.

Other aspects of the city effect have been identified as:

- a) *Economic dimensions*, including agglomeration economies and economies of scale, innovation potential, supra-regional and international interlacement;
- b) *Socio-cultural dimensions*, including socio-cultural diversity, accessibility and availability of services, social mobility, satisfaction with urban living conditions, public opinion and the image of the city;
- c) *Demographic dimension*, considered as the demographic attraction of cities.

These have also been taken into account in the formulation of the list of indicators of optimal centrality.

2.2 Indicators of City Overload

Like city effect, the concept of overload, after discussion and joint examination, has been broken down into various aspects useful for the elaboration of the appropriate indicators. One way of partitioning it includes the following:

- a. *Quality of life*, intended as a balance between access to opportunities/amenities and the collateral disamenities of urban life;
- b. *Differential cost*, e.g. housing prices, wages, etc.;
- c. *Environmental disamenities*;
- d. *Social conflict and control, and social inequality*;
- e. *Traffic congestion*;
- f. *Migration flows*;
- g. *Land use* (dereliction).

A slightly different organisation of overload aspects includes:

- a) *Impacts on the natural environment* (quality of air, water and soil, city climate, noise pollution, the supply of green and open spaces);
- b) *Impacts on the economy* (increases in land prices and rent level, worsening of the accessibility to rare economic establishments and superior urban services, increasing segregation between living and working areas);
- c) *Impacts on housing conditions* (household crowding);
- d) *Congestion of the transport system* (pollution, time loss, psychic stress, reduced accessibility);
- e) *Social disintegration* (social inequality, segregation, increased deviant behaviour, etc.);
- f) *Other sociological and psychological consequences* (reduction in close social relationships, segmented role contacts, etc.);
- g) *Impacts on physical health*;
- h) *Demographic consequences* in terms of fertility decline, and new migratory patterns;
- i) *Impacts on public safety* (increased crime rates, violent crimes, accidents and fires)
- j) *Accessibility and availability of services*, worsened in the poorer districts;
- k) *Impacts on social and political participation* (negative impacts on political participation and co-operation in common social institutions);
- l) *Constraints of administration* (duration of processing official applications, delays of legal proceedings, etc.).

3. Issues in the optimality evaluation

The characteristics of optimal centrality can be singled out on the basis of six categories of opportunities and related objectives that cities can offer to their citizens. These can be characterised as the city effect point of view.

3.1 From the City Effect Point of View

The six positive categories are:

1. *in public life*, to be able to exercise public functions and to play meaningful roles in the context of organised groups (associations, parties, unions);
2. *in community and relational life*, to be able to find a plurality of diversified occasions for exchange and participation in nationally or internationally relevant events and meetings, not necessarily planned ("agora" effect);
3. *in work and leisure related activities*, to be able to attain the widest range of working positions for all levels of professional skill and education represented in the local population, and to be able to access a multiplicity of leisure and cultural activities for free time;
4. *in services*, to find satisfactory and valid service support for security, health, purchases, instrumental assistance, education, culture, information, and above all, in non-conventional sectors;
5. *in the environment*, to be able to live in an environment characterised by secure, recognisable, stimulating, prestigious, as well as healthy connotations;
6. *in society at large*, to feel oneself part of a social context which is as varied and stimulating as possible with regard to composition, professional skill, habits, and tastes.

3.2 From the Overload Effect Point of View

From a negative point of view, characteristics that can oppose the evolution of optimal centrality are mainly to be found in five categories of overload effects:

1. *congestion and overcrowding*, including congestion of transport and information flows, excess residential density, overcrowding of services, energy waste, and overcharge of distribution networks and waste disposal services;
2. *disorganisation*, including disorganisation and imbalance of assistance and supply of services (both public and private);
3. *relational unease*, including the presence of social perturbation and incompatibility between the different collectivities who coexist within the same urban area, and consequently, difficulties in cultural and political exchange and relationships;
4. *phenomena of ungovernability*, including multiplication of situations of uncertainty about rights, production of parallel and often diverted systems of power control and distribution, self-assertion of informal as well as illegal systems of leadership, etc.;
5. *phenomena of environmental degradation*, including degradation of the living and working environment both at the centre and margins (formation of ghettos and slums, etc.).⁵

⁵In the same document other relevant phenomena were suggested for discussion on the elaboration of indicators of city effect and overload. And each main category listed above has been deconstructed and split in several facets. In this paper, at the moment, it is not relevant to

4. The Debate on Optimal Centrality

A large part of the research was also devoted to the concept of optimal centrality. One issue that was raised in this context is the problem of "point of view", i.e. from whose perspective should optimal centrality be approached. One could almost ask, "Optimal for whom?"⁶

Three main areas of interest emerged. One tended to emphasise the production point of view, that is "companies" and other producers in the urban area. The second was more concerned with consumption, that is the household perspective. The third stressed the environmental and cultural aspects of optimal centrality.

These perspectives are not necessarily conflicting. They represent key features of any idea of optimal centrality, and all of them deserve to be pursued. This was in fact the decision, and consequently each of the national groups agreed to give special emphasis to their favoured perspective in the selection of indicators. They agreed at the same time to maintain a "core" set of indicators for all perspectives which would ensure the possibility of making comparisons.

5. Towards a "Core List" of City Effect and Overload Indicators

A significant discussion involving all the groups was centred on social indicators and their role in a planning perspective.

In a different, descriptive perspective, there is virtually no limit to the number of possible indicators of both city effect and overload. But, from the perspective that characterises this study, it was clear enough to all that indicators had to be selected keeping in mind that there should be some reference to possible policies, actions, and interventions.

Second, indicators would have to be compared among different urban situations and different countries. This entailed sacrificing most of those indicators that, being innovative in nature, were unique or without systematic application in widely available statistics. On the other hand, a few innovative indicators have been retained, although not applied, in view of a future study, having as its object the new territorial organisation that is the result of the present research.

Third, a logical distinction was made - as anticipated in the previous paragraph - between a set of "core" indicators that *all groups* intended to apply to their

list and comment on all this. See, in any case, the research report already quoted (Planning Studies Centre, 1996). Other classifications can be found in classical studies: OECD (1973, 1974, 1978); United Nations Statistical Office (UNSO), (1975), UNESCO (1978). Institut d'Urbanisme de l'Université de Montreal (1988); see also Archibugi, (1974).

⁶At large, useful documentation on this debate is found in several studies and documents of the EC Commission (1990; 1994a; 1994c).

selected cases, and a set of "national" indicators that each group wanted to use for an appropriate measurement of the concerned phenomena in their own country.

In the following **Table 1** is the "core" list that was generally agreed upon.

A final remark may be useful in regard to the possibility of a *typology* of indicators.

Many typologies of indicators have been proposed (See Archibugi, 1996, for a specific treatment of *program indicators*). Some of them are so detailed as to risk making them impossible to use. We will not concern ourselves, therefore, with the sort of classifications which refer to the axis static/dynamic, negative/positive, descriptive/evaluative, qualitative/quantitative, etc. Rather we think it useful to dwell on a few types that must be kept distinct from each other, to avoid serious ambiguities on the meaning of the information they convey.

In our opinion, in the frame of the themes we are dealing with, it is interesting above all to consider:

- a) state indicators
- b) standards, need and lag indicators
- c) target and goal indicators
- d) input indicators
- e) process indicators (efficiency, effectiveness, etc. - throughput indicators)
- f) output (achievement) indicators.

State indicators describe the situation as it presents itself, short of any intervention to modify the existing and active trends, "freezing" it at a selected moment, past, present, or even future.

Standard or optimal indicators will be discussed in the next paragraphs.

Table 1: The "Core" List of Indicators

Thematic Area	City Effect Indicators
Economies of Scale	GDP per capita compared with national average
Localisation Economies	Proportion of employees in the tertiary sector
Centrality	Retail sales area per capita
Critical Mass	Service threshold
Innovation Potential	1) Number of firms births per capita and year - 2) R&D employment
Supra Regional / International Interlacement	Number of international congresses, fairs, and exhibitions held per year
Socio-Cultural Diversity	1) Number of workers in the arts market - 2) Nationally or internationally relevant live performances
Accessibility/Availability of Public Services	Number of ecographic and computerised axial tomography scanners operating
Social Mobility	University graduates
Urban Morphology	Provision of open public space
Subjective Contentment	Degree of satisfaction
Public Opinion/Image of the City	City image in national media
Demographic Attraction	Annual immigration rate

Thematic Area	Overload Indicators
Impacts on Natural Environment	1) Air pollution - 2) Tons of waste produced yearly compared with national data
Impacts on Economy	Level of commercial rent
Impacts on Housing Conditions	Average housing rent/income ratio compared with national data
Congestion of Transport System	Average commuting time to work
Social Disintegration	One person households
Sociological and Psychological Consequences	Number of persons with mental disease
Consequences of Impacts on Physical Health	Life expectancy
Demographic Consequences	Fertility rate
Danger to Life	Violent crimes
Accessibility/Availability of Public Services	Average duration of waiting lists for surgery in hospitals
Impacts on Participation	Electoral participation
Congestion of Administration	Average duration of civil proceedings
Subjective Contentment	Degree of satisfaction
Public Opinion/Image of the City	City image in national media

6. Towards a list of optimal centrality indicators

As has been repeated and documented in various parts of the research report, the Actvill Research involved a variety of approaches and methodologies to test, in different national contexts,⁷ viable city-effect and overload indicators.

We also specified that despite this variety, a "core" set was roughly adopted in all cases, with the necessary adaptation to fit in the existing data systems (**Table 1**).

It is not difficult, therefore, to "squeeze" out of this investigation, an ideal list of indicators to propose for utilisation at a European scale. What has proved to be really difficult – but indispensable, however – is to provide these indicators with corresponding standards for their values, as reference parameters for their application.

The fact that we are working a) in a decision-structured context and b) searching for appropriate territorial dimensions, both qualifies and makes our endeavour harder for quite patent reasons. In fact, by looking for *optimality* within specific – in the process of being designed – *territorial* limits, we are precluded from merely "incremental" solutions (i.e.: the higher the number of public libraries the better, or the higher the number of specialised doctors per head of population the better, etc.), because these are generally at the roots of *overload* phenomena, since they attract an additional load of population from less served areas.

However, ready-made standards are practically non-existent, except for a few environmental standards (noise and air pollution) adopted by the EU.

Setting city effect standards and overload thresholds *to fit the new proposed redistributions of centrality* would require an *ad hoc* study based on data sets that do not exist yet. The Actvill research has, therefore, attempted a second-best solution, using a bottom-up approach that is mainly based on:

1. *ex-post* thresholds;
2. the use of the mean value (national mean or sample mean) as the reference value;
3. the use of the minimum values empirically obtained by applying indicators in the study of overload as a reference value (e.g. the minimum value recorded for "number of reported offences per 1,000 of population");
4. the use of values obtained by individual cities that as a result of the report are considered to be well balanced;
5. reference values for similar indicators found in literature.⁸

The following, **Table 2**, presents the proposed list of city effect indicators and standards, and overload indicators and acceptable thresholds.

⁷ That means above all different availability of statistical sources and data. For difference of concept, styles, and values, see Boyden, Miller et al.(1981), and also Eurostat (1997). See also Berger et al. (1987).

⁸The classical work in the matter is the old book of Perloff (1969). Interesting comments in Gehl (1993), Peter Hall (1978), EC Commission (1994b).

This table, therefore, can be considered as being somewhat of a summary of the entire research work. It is evident, that having concentrated attention on the analysis of only four countries (France, Germany, Great Britain, Italy), the resulting values are strongly impacted by the values, objectives, style, culture, and socio-economic and environmental circumstances of the four national communities involved.⁹

⁹On this point a large amount of literature has been produced: for instance, Berger et al. (1987); Breheny (1993); Cicerchia (1996); Gehl (1993).

Table 2 - City Effect Indicators and Standards, and Overload Indicators and Acceptable Thresholds

City Effect Indicators

<i>Indicator</i>	<i>Reference value</i>	<i>Comment</i>
Demographic dimension	361,000 inhabitants	City-Effect increases with urban size up to a certain point (361,000 inhabitants) and then decreases.
Population density	10.50 persons per hectare	Average value
Headquarters location: Number of trading premises (headquarters sites of commercial companies located in the area relative to population size)	4800 persons per companies	Average value
New firm formation	0.00300 registrations per head of population	Average value
Number of applications for firm birth loans	8 per 10,000 heads of population	Average value
Level of employment in the tertiary sector	Over 75%	Average value (national)
R&D Employment	10 per 1000 heads of population	Average value
Occupation in the art market	13 per 10,000 heads of population	Average value
Art galleries	33,400 persons per service unit	Exemplary urban system value
Share of population that can reach the following facilities within 10 minutes (%):		Average value
Retail shop/supermarket	over 90%	
Physician	90%	
School	over 80%	
Kindergarten	over 75%	
Public transportation connection	99%	
Pub	over 95%	

Park	over 85%	
Retail sales area	over 1.5 sq. m. per inhabitant	Average value
Night time entertainment	One unit every 30,000 inhabitants	Average value
Number of seats in performance venues	22.24 seats per 1,000 population	Average value
Seats in cinemas and theatres	20 per 1000 inhabitants	Average value
Average time to reach an international airport	45 minutes	Average value
Public transportation closing time	After midnight	Maximum value
Number of beds in surgical services	2.8 per 1,000 population	Average value
Medical specialists	20 per 10,000 inhabitants	Average value
CAT scanners availability	One every 100,000 inhabitants	Average value
Percentage of pupils under five in nursery and primary schools and classes	100%	Theoretical value
Provision of open space	300 persons per hectare open space	Average value
Herbalists	One per 180,000 persons	Average value

Overload Indicators

<i>Indicator</i>	<i>Threshold value</i>	<i>Comment</i>
Demographic dimension	55	Urban overload effect shows an increasing trend over this value
Degree of concentration of NO2	30 parts per billion (ppb)	EU standard
<i>Public transportation average speed</i>		
Peak	15.45 m.p.h.	Best value
Off peak	22.6 m.p.h.	Best value
Share of derelict land	0.5%	Adjusted national average
Unemployment ratio	6.4%	Best value
Long term unemployment	24.3%	Best value
Income support rate	4.4%	Best value
Reported offences (except larcenies)	83.9 every 1000 inhabitants	Best value
Reported larcenies	43.6 every 1000 inhabitants	Best value
Violent crimes per 1,000	3.48	Best value
Waiting time for surgery	3.2 months	Best value
Delay before criminal trial	15.3 weeks	Best value
Maximum travelling distance between two points whatsoever of the metropolitan area	80 minutes	Theoretical threshold

7. Towards a definition of a strategy for appropriate spatial urban organisation.

The identification of a system of urban indicators and their threshold values leads to the formulation of an appropriate strategy to adapt the spatial structure and organisation to those values and to the conception of a policy oriented towards creating the optimal conditions of this urban organisation.¹⁰

Thus, this strategy leads to the design of the appropriate delimitations of the existing urban "agglomerations" which meet, as far as possible, the theoretic optimal urban organisation. Therefore, a kind of circular movement is produced that, rather than being a motive for logical inconsistency, represents a tool for an appropriate operational advancement. From one side we measure, tentatively and "empirically" on the factual field, to which structural conditions some variable behaviours considered as "good" are linked. From the other side, having based the urban indicators on such empirical evidence – but not having given to them any absolute value – we try to extract from them some acceptable standard or normative values in order to "generalise" in normative terms their territorial diffusion. Then, based on such standard values, we can proceed to restructure the urban organisation, in order to meet these values as far as possible (and with the minimum cost or use of resources).

From this reorganisation, it is possible to get a territorial model which is linked to the reality of things, and connected to its own character, within the research for something that we call an "urban system" or "urban eco-system". This model, in its turn, becomes:

- I. an appropriate reference to give significance to measuring the urban quality of life through selected indicators, and to creating comparability among factual situations;
- II. an appropriate model of reference for an urban strategy oriented to optimise that urban quality of life.

8. The appropriate "ambit" for measuring the urban quality of life

From what has been said, it follows that if we do not operate in the correct ambit of analysis and measurement, we cannot rightly assess the needs of interventions which are instrumental to strategically achieving the optimal conditions for the city, the right balance among urban effect and urban overload.

The problem of this ambit of measurement becomes the crucial point for appropriate evaluation and programming, and thus, the crucial point of the initiative by the European Commission for an Urban Audit to measure the quality of life in 58 European cities.

¹⁰See Fox (1967), Cicerchia (1996), Archibugi (1995 and 1997), and Breheny (1993).

We will now briefly discuss the aims of the European Commission in launching the project for the Urban Audit, and the risks of managing it in the wrong direction.

9. The objectives of the Urban Audit projects

The aim of the European Commission project is *"to develop a tool for ... diagnosing problems in the form of an urban audit which will measure the quality of life in the Community's cities"*, and to collect, *"information for cities, for conurbations and for some neighborhoods within cities so to be able to compare them"*.¹¹

The idea seems to be to obtain the possibility of using a common yardstick of evaluation of the (citizen's) needs and welfare in the matter of the quality of urban life. The purpose of this common yardstick would be to orient all public decision-makers and operators in cities, especially the local authorities, as well as to guide the policies of intervention and support by the European Union, itself, through its structural funds.

Consequently, *data comparability* also becomes the basic requirement of the system to be created and implemented. And, in numerous studies already carried out in this direction (and particularly in the most recent, meaningful study carried out for the European Commission mentioned above), it has been ascertained that data comparability – especially that of a spatial and territorial nature – is strictly bound to the choice of *appropriate units of data collection*.

Now, another firm point of the conventional research in spatial economics and economic geography is that the traditional *administrative boundaries* (which are often the source of the statistical data available, and therefore, the most used statistical unit of data collection) do not usually represent the "appropriate" units of data collection. Consequently, they do not represent an adequate basis for comparison of the different situations. In many cases, they are also the cause of misleading conclusions.

At the same time – as rightly emphasised in the *EC specifications* – *"the results of the audit are primarily intended to go to the local authorities that are politically responsible, and so the area studied should correspond to the area they are in charge of"*.

Consequently, we cannot leave out of consideration in the collection of data and in the will to compare it, the administrative boundaries. But, as we have said, we *should* take the administrative boundaries out of consideration to render the data significant. This methodological conflict is very old and always present in any action oriented evaluation that uses data that are essentially quantitative.

We have seen that the Actvill research has been aimed more at the study and proposal of better statistical units of data collection and also of planning and

¹¹See the contract specification of the call for proposals. (EC, 1997)

evaluation.¹² These statistical units would allow a better comparability of situations, instead of a direct measurement on uncertain methodological foundations.

In the Urban Audit venture, there is, rightly, a more operational purpose. A more pragmatic approach is justified that aims at implementing a comparison which may be defective, instead of one that is unfeasible for lack of data, or one that would imply (in order to be feasible) big reforms in the administrative order within each country. In this case, therefore, the preferable option would be to find comparisons that could be acceptable even within the existing administrative boundaries; those that would give a significant insight into certain actual urban situations, even if not perfectly comparable to each other.

Nevertheless, the case deserves more attention and special warning.

10. Misleading risks in the wrong delimitation of area

Suppose we assume as an indicator of urban quality, the ratio between the population which has access to certain urban services – say, certain specialised health services or certain recreational and cultural services such as theatres and universities – within a given access time (an isochrone) and the total population of the territorial entity which has been assumed as the basis of measurement ("cities", "conurbations", or "NUTS 5")¹³. This kind of assumption is present, in one form or another, in almost all attempts to measure urban quality.

Obviously, such an indicator, will be composed of the number of units of supply of services taken as reference (the numerator of the ratio) and the population, or units of demand, or customers of the services in question (the denominator of the ratio) existing within the boundaries of the territorial unit taken as reference.

This ratio of services/population, or otherwise, supply/demand, is the ratio that will be the object of any possible evaluation and comparison or audit among two territorial entities. Obviously, the ratio and any comparison made with it, will be strongly influenced by the nature of data that comes to compose the numerator and the denominator.

Assume now, that in one of the two territorial entities of the comparison (entity A), the services (in the numerator) serve the entire population but only the population of entity A. While in the other entity of the comparison (entity B), the services serve, in addition to its population, even an "external" population which will not be officially included in the calculation. This "external" population could be, for instance, (a) population from bordering territories which do not belong to any other entity (because we have excluded the territories below a certain definition/threshold of a "city" from our analysis); or (b) population from the

¹²On evaluation methods see Lichfield (1996), Michalos (1997), and the revolutionary approach of Fox (1974).

¹³NUTS 5 is the fifth territorial level of statistical territorial data collecting from Eurostat. See better Eurostat (1997).

measured territorial entity which, for one reason or another, prefer to be served with services located outside their territory of residence.

What reliable results will come from this kind of comparison? None. To the contrary, from this kind of comparison, there will emerge numerical data that is quite misleading and opposite with respect to the existing reality. Let us make some examples for entity B.

In case (a) – which does not include a certain amount of external population in the denominator for entity B (that we compare with entity A) – entity B could appear to be much better served than entity A. By including the "external" population in the calculation, the result could be the exact opposite: that entity B is worse served than entity A. In this case the value of the audit is nil.

Besides – continuing to look at case (a) – we should also ask ourselves where this hypothetical "external" population is served in regard to those services taken into consideration as indicators of the quality of life (it is a real population of the "non-urban area"). Somewhere they must be served! Or, do we accept that they do not have access at all to the above-said services? And, in this case, is an audit acceptable that measures the quality of life in terms of certain services, only for a portion of the population, without taking into account the impending impact of the entire population which presses on the cities to get access to services from which, right now, they appear to be excluded?

This is the reason why every form of audit of urban quality should be based on "co-extensive" data, that is to say, the entire population and the entire territory should be included (and not just a part of it) in order for the audit to be meaningful.

In case (b), where some of the population goes outside their territory of residence for services but is still counted in the denominator even though they do not use the services, the misleading result of the audit would be even bigger and more sensational. Entity A would appear to be much better served than entity B, while in the reality it is much worse. And, this happens not only because of a defect of "co-extensivity" of the calculation but because we have not calculated the real flow between the entities. This results in a statistical mistake inherent to the calculation itself, in effect because of the wrong methodological approach of the audit.¹⁴

¹⁴More arguments also in Archibugi (1996 and 1997).

11. A reference framework for the strategic spatial organisation of the cities system

Within the effort of the Actvill 2 research to provide a more rational and consistent framework for data collecting and for planning, a scenario has been furnished for a future strategy of urban reorganisation at a national scale (unfortunately only for the four countries of the Union involved in the research). A reorganisation of the boundaries of "urban systems" largely comparable to each other has, therefore, been suggested (for the four countries) that could be used as a guide for future interventions for territorial re-equilibrium and recovery.¹⁵

It would be a pity to completely lose - because of an excess of pragmatism - the reference to this further effort of rational territorial delimitation, which corresponds to some requirements that are even more elaborated than those of the NUTS 5 level (which have been elaborated by Eurostat to get a more comparable data base than that given by the traditional administrative boundaries).

In short, it would be wise to take into account not only the three "official" levels of data collection referred to in the EC specifications for the Urban Audit, but also a "fourth" level corresponding to the "urban system" developed in the Actvill 2 research. We could call this level the Actvill/PSC level (or the "urban system" level).

For this level, the collection of data would be even more problematic than imagined for the other three levels forecast by the EC research specification. But, where possible, it would be useful to control the comparability and their degree of meaningfulness. In summary, this level will constitute an even more advanced tool of knowledge and evaluation than will emerge by the data collection at the other three levels.

¹⁵Again we suggest examining the findings of this research, in which, the maps of the above-mentioned territorial reorganization of the Actvill research are reproduced, very synthetically into homogenous (although diverse) urban systems which makes comparing the urban conditions more manageable. The visual layout of these maps is easily readable on the PSC Internet Site: <http://www.planningstudies.org>

Bibliographical References

- Archibugi, Franco (1974), The 'Quality of Life in a Method of Integrated Planning (Aspect of an Italian Research Project "Progetto 80")', *Socio-Economic Planning Sciences*, Vol.8, No 6.
- Archibugi, Franco (1989), 'Comprehensive Social Assessment: an Essential Instrument for Environmental Policy-Making', in: Archibugi, F. and Nijkamp, P. eds., *Economy and Ecology: Towards Sustainable Development*, Kluwer, Academic Press, Dordrecht.
- Archibugi, Franco (1995), *The Theory of Urbanistics, Lectures on a Reappraisal of City Planning Methodology*, (first draft: 1995; last draft: forthcoming).
- Archibugi, Franco (1996), 'Program Indicators: Their Role and Use in the Integrated Social or Community Programming', *Social Indicators Research*, Vol. 39, No.3.
- Archibugi, Franco (1997), *The Ecological City and the City Effect, Essays on the Urban Planning Requirements for the Sustainable City*, Ashgate, Aldershot etc., 1997.
- Berger, M. *et al.* (1987), 'A Revealed Preference Ranking of Quality of Life for Metropolitan Areas', *Social Science Quarterly*, Vol.68.
- Boyden, S. S. Miller, *et al.* (1981), *The Ecology of a City and its People: the Case of Hong Kong*, Australian National University Press, Canberra.
- Breheny, M. J. (1993), 'Planning the Sustainable City Region', *Town and Country Planning*, Vol.62, No.4
- Cicerchia, Annalisa (1996), Indicators for the Measurement of the Quality of Urban Life: What is the Appropriate Territorial Dimension?, *Social Indicators Research*, Vol.39, No.3.
- EC Commission (1990), *Green Paper on the Urban Environment*, Communication from the Commission to the Council and Parliament, EC, Brussels.
- EC Commission (1994a), *Toward a Better Liveable City* (City Action Program, Background Paper) EC, Brussels.
- EC Commission (1994b), *Technology and the Future of Cities. Responding to the Urban Malaise: An Agenda for the European Union*, (by U. L. Businaro),(Fast FOP 380), EC, Brussels.
- EC Commission, (1994c), *European Sustainable Cities*, (Group on the Urban Environment, Report for the Conference on Sustainable Cities and Towns), Aalborg, Denmark, 24-27 May 1994.
- EC Commission, DGXVI, (1997), *Contract Specifications for the Call for Proposals for a Urban Audit in the European Union countries*. Brussels, may 1997.
- Eurostat, (1997), *L'offre e la demande en matiere de statistiques urbaines* (prepared for Eurostat by: Michel Poulain, Centre d'etude de Gestion Demographique pour les Administrations Publiques, Université Catholique de Louvain)

- Fox, Karl, (1967), 'Functional Economic Area: Delineation and Implications for Economic Analysis and Policy', *Regional Science Association Papers*, Vol.10, pp.57-85.
- Fox, Karl (1974), *Social System Accounts, Linking Social and Economic Indicators through Tangible Behaviour Setting*, Reidel, Dordrecht,
- Gehl, J.(1993), 'Human Quality in the City', in: Rautsi, J. ed., *The Helsinki Round Table on Urban Improvement Strategies.*, Ministry of the Environment, Helsinki
- Hall, Peter (1978), 'The European City in the Year 2000', in: Swedish Council for Building Research, *Growth and Transformation of the Modern City*, (Stockholm Conference , University of Stockholm, 1978.
- Institut d'Urbanisme, (Université de Montreal (1988), *Les Indicateurs d'Environnement Urbain*, Ministry of Environment of Quebec.
- Lichfield, Nathaniel, (1996), *Community Impact Evaluation*, UCL Press, London.
- Michalos, Alex, (1997), 'Combining social, economic, and environmental indicators to measure sustainable human well-being', *Social Indicators Research*, vol.40.
- NUREC (Network for Urban Research in the European Community) (1995), *Report on Comparative Studies and Statistics of European Cities*, (Working Paper , No3), Duisburg, 1995.
- OECD, *Social Indicators - Guiding Principles and Concepts for the Development of Social Indicators in the OECD Program*, Paris, 1973
- OECD *Social Indicators Development: Approaches, Principles and Concepts*, Paris 1974
- OECD, *Indicateurs d'environnement urbain*, Paris 1978.
- Perloff, H. S. (Ed.) (1969), *The Quality of the Urban Environment. Essays on 'New Resources' in an Urban Age, Resources for the Future*, J. Hopkins Univ. Press, Washington DC.
- Planning Studies Centre, (1996), *The Integration of Cities into their Regional Environment: Towards a European Urban Systems Concept and Policy*, Report to the European Commission (City Action RDT Program), Brussels; forthcoming published by Ashgate, Aldershot, 1998.
- Pumain D., et al., (1991), *Les Indicateurs Urbains en Europe*, Eurostat. 1991.
- Pumain D. et al. (1992), *The Statistical Concept of the Town in Europe*, Eurostat. 1992.
- UNESCO, *Indicators of Environmental Quality and Quality of Life*, Paris 1978
- United Nations Statistical Service UNSO, *Towards a System of Social and Demographic Statistics*, New York 1975
- UNRISD, *Studies in the Methodology of Social Planning* (Report n. 70.5), Geneva 1970