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1. SETTING OUT THE PROBLEM

1.1. Rebuilding the Built Environment: A Neo-Contractualistic Sketch

In a "zero sum society," trade-offs and substitution effects are more relevant than growth, and position is at least as important as dimension. Similarly, in the steady metropolis, relocation is more relevant than expansion, and the intra-urban set of redevelopments is the driving force of rent differentials and urban dynamics. The modernization of the metropolitan structure is the result of mega-projects built up in nodes able to generate multicentric effects.

A parallel change in the dominant ideology has led to a change in the policy-making mood: from equity-oriented policies, aimed at pursuing regional equilibrium relying on public intervention, to efficiency-oriented policies, aimed at maximizing the core competitiveness potential and relying on private resources for redevelopment. This increases the competition between special-interest groups of promoters, between different parts of the same city, and between central and fringe municipalities, to get greater public financial support or to attract private capital already in the design phase. The urban marketing objectives shape the criteria of the project, and push global strategies and local needs further apart.

Nevertheless, in a pluralistic system and in the presence of strong contrasts in profits for the various social actors, all public decisions without consensus are ineffective because they generate crossed vetoes or delaying policies.¹ In this context, world-capital mobility and political fragmentation increase uncertainty in forecasting and decrease the level of representation of public choice, leading to inefficacy of urban controls and Balkanization in the decision process.

Different planning modes are usually played simultaneously by various actors on the metropolitan scene. According to Friedmann's distinction between four principal planning approaches (1973), we should say that the "corporate planning" mode² seems to be winning nowadays in the Italian metropolitan areas. On the other hand, the normative and bureaucratic apparatus is still structured after the "central planning" mode. The analysis of Master Plans' effectiveness (Tutino, 1986) shows that they are only able to regulate the incremental routine practices of land use control, but are unable to activate strategical interventions. Regarding the latter, many groups of private promoters have stepped forward in order to make the most of the current phase of selective re-centralization.

This is having a double effect. On the one hand, it fosters "participatory planning" responses due to the lucky convergence of socio-economic localism and of environmentalists'

autonomism. On the other hand, as a negotiation instrument it increases the use and misuse of the restrictions still in force, so that it grants the public partner a greater quota in the joint venture.

Thus, choosing between the objectives of the actors involved in the agreement becomes discretionary, and invalidates the idea of the general interest as a holistic index for justifying and measuring public action outcomes. In this way, the Master Plan becomes a kind of fiction, and its variant is often a contract excluding the weak parties, and sometimes even the strong but not collusive ones. In view of this, the public needs a greater and greater ability to evaluate and select projects, not so much on the basis of their agreement with the plan, but on their cumulative compatibility with the status quo, as well as on their ability to achieve objectives regarded as relevant and sanctioned as such in a clear negotiation. For the purposes of this paper, I will call this process the "transparency principle."

The transparency principle is a kind of trap, however. Like the "experimenting society" model, "it assumes a political context willing to take the results of the experiment as accurate and impartial, and an organizational setting in which existing interests will not attempt to subvert the experiment for their own objectives" (Teitz, 1978). Because of the possible data manipulation in the political context (Dery, 1990), the principle of transparency should not be considered as an "ingenuous attempt to make reasons and coherences of choices explicit, . . . but as a need for a linguistic representation of the evaluation process consonant with the language of social practice" (Palermo, 1981).

If we are thinking locally, the above statement is correct. But if we do not think of the project decision as that of a one-shot exhibition (or acquisition) of power, but rather consider the long-range process of democratic adjustment and learning, the transparency principle should be taken in a substantive way for at least two reasons:

- (1) its moral value, inasmuch as it is the condition allowing people to apply sanctions for/against the political responsibility;
- (2) its "cognitive added value," since the nature of the urban problem solution is conditioned by the forms of its collective representation.

For example, as shown by Lanzara (1988), an effective solution to the urban renewal issue has been achieved by resetting the problem according to the point of view of the weakest interests in context; namely, from "slums clearing" to "self-help supporting" policies. This hermeneutic leap cannot be traced back to the mere syntax of the political exchange, nor of the strategic interaction. Both the political and the market mechanism offer "a complete range of choices between alternative

adjustments . . . but no chance of choosing between alternative conditions" (Hirsch, 1976), which would be the cumulative outcome of the summation of those local choices.

In this sense, coupling contingent descriptive maps of metropolitan problems should enable the actors involved to learn how to cooperate. The agency of evaluation is a kind of court for social learning through "mutual partisan adjustment" of all interested parties, touched by a radical change in their man-made environment.

1.2. Adaptive Systems and Conditional Standards

The de-industrialization of the metropolis emphasizes the asymmetry between expropriatory forms of political exchange and appropriative logic of economic exchange. It also brings about social and territorial fragmentation.

From the normative point of view, the resulting ephemerality of social subjects eliminates the possibility of codifying by making uniform standards that rely on averages. Rather, this calls for regulating satisfactory variances between conflicting preferences of different groups or localities, whose territoriality is not due to administrative perimeters, but rather to "spheres of interest" (Webber, 1964).

Moreover, in the metropolitan context, we are witnessing a sharp shift in planning issues. If, in the last decade, most of the urban policies were aimed at containing the metropolitan sprawl, in these years the basic planning problem is how to cope with the change within the city and to regulate the process of re-use in inner areas.

Nevertheless, the normative apparatus in Italy still retains the stigma of an obsolete paradigm, based upon:

- a kind of isometric (reduction to average values), disjunctive (wholes of separated areas), additive (growth by sum) metrics
- an extrapolative approach to dealing with the future

As long-term forecasting is usually of a stochastic and conditional kind (*if* this set of conditions occurs, *then* such and such an outcome is likely to follow), it is appropriate that the normative side should also be conditional. That is why strategic planning can only be indicative, not prescriptive. Therefore, we must try to replace the formal enforcement of the rule (independent of the possible worlds to which it is applied) with a modal logic of the norm that enforces it inside a given conditional and factual context.

The local system of conditions can be defined following an agenda such as the following:

- (i) ranging the shared outcomes of the project
- (ii) describing the preferences and the generated profits
- (iii) organizing the network for project implementation and for managing its impacts
- (iv) stating mitigating and compensating works

The extent of this conditional ruling should apply not just to a predefined administrative area, but to all the urban sub-systems affected by the project. It could be identified by its accessibility or by interacting fields models.

2. URBAN IMPACT ASSESSMENT

2.1. The Case of the Metropolitan Context

From the practical point of view, the transition from a comprehensive/control-oriented approach to city planning towards an incremental/action-oriented approach to project implementation requires equipping the local authorities with a replicable framework for evaluating the impact of major projects under consideration on the overall metropolitan system. However, if the techniques for project impact assessment in the countryside are pretty well defined, the criteria for anticipatory evaluation on a city scale are still rather uncertain. We do not have general criteria for how to relate normative scenarios that cohere to a chosen set of objectives, how to choose among alternative projects on the same site, or how to evaluate competitive projects with different locations.

In addition, we can transfer neither the same project-analysis matrix nor the structure of feedback networks simply by changing the list of indicators, since the built environment and the system of values is obviously different in either context. If the new project is located in the countryside, the compatibility judgement basically relies on the ecosystem stability. If it is located in an urban area, the decision rule is the harmonic development for different promoters and advocacy groups. In this case especially, relevant indicators and thresholds should be selected and defined by negotiating between competing interest groups during the evaluation process.

The outcomes of a new urban project can be evaluated in two different complementary ways. It should consider on the one hand the technical parameters of the structure; that is, its urban efficiency and efficacy, and on the other, how well it answers the expectations of developers and target groups; that is, its social efficacy and equity.

2.2. Bringing Together Multiple Requirement Maps

The extended matrix A (Figure 1) is a preliminary double-entry table for describing the internal efficiency of the proposed project within its area. The preliminary extended matrix B is a table for determining the efficacy of the project on a local context. The rows (common to both matrices) present an analytical checklist of the aims of the planning decision (see also Schaenman, 1976; Rau, Wooten, 1980; Fisterbusch and Wolf, 1977; Irer, 1990), articulated in the following different levels:

- basic goals (or final ends)
- achievable objectives
- project requirements (or purposeful actions)

Row i, designing the impact parameters, is partitioned into four subsets, aspiring to the following ideals or underlying values:

- prosperity
- fulfilment
- salubrity
- beauty

These are, respectively, coherent with the following basic goals:

- economic efficiency and resource valorization
- local welfare and social promotion
- public health, and environmental sanitation and safety
- townscape quality and environmental diversity

Any final end (see list 1 in Tables 1, 2, 3, and 4) can be implemented by a series of intermediate objectives (see list 2), carried out by different project options. With respect to each one objective, it is useful to indicate the following (see list 3):

- state or impact indices or social predictors
- trackable variables, or their proxies or fallback measures
- the possible sources of information

Each objective should be linked with one or more project recommendations (such as performance requirements, ad hoc regulations, or design guidelines) that make it feasible (see list 4).

Figure 1. Outline of the basics steps in setting out the urban impact assessment

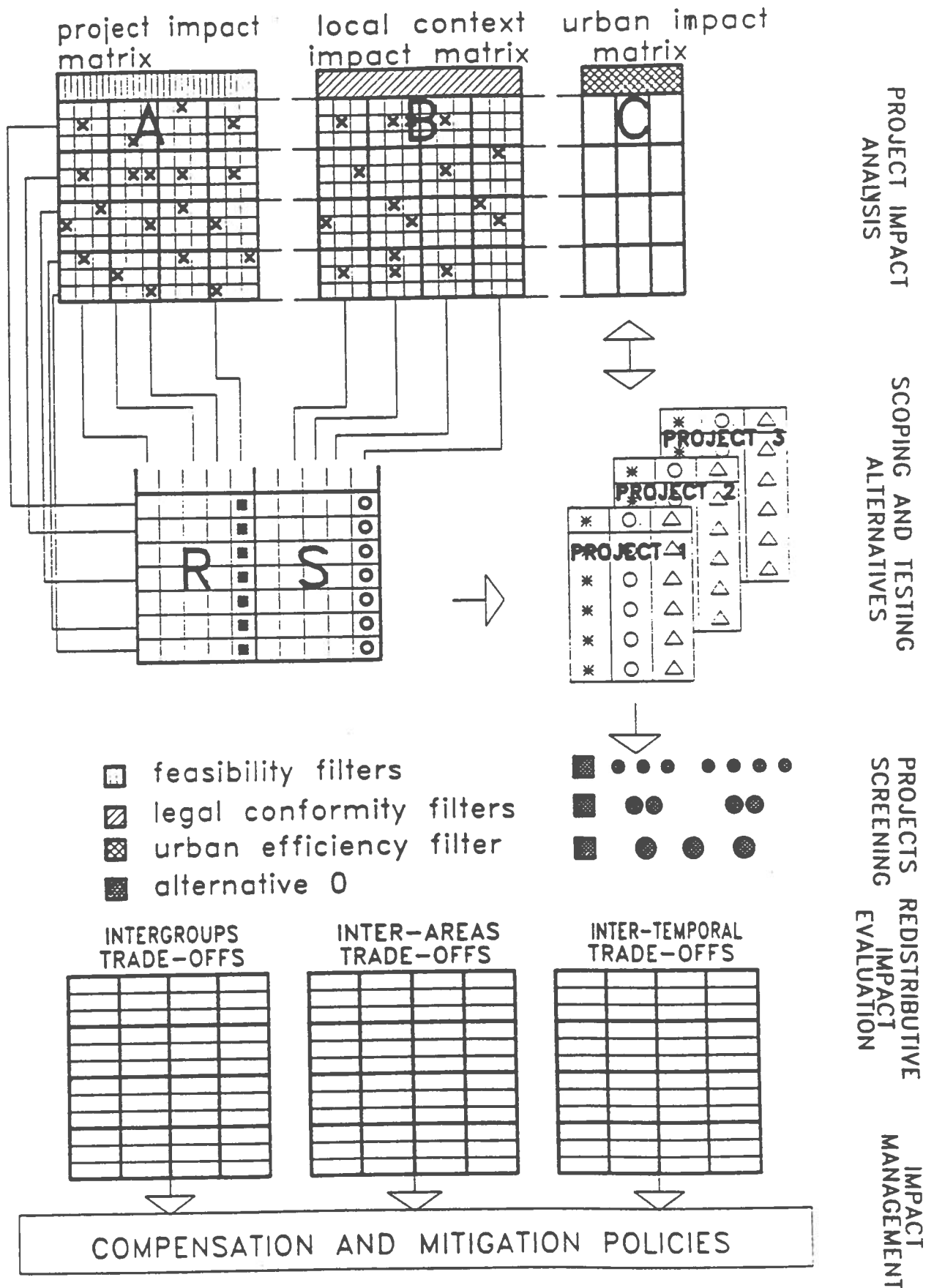


TABLE 1. IDEAL: PROSPERITY, ECONOMIC EFFICIENCY AND RESOURCE VALORIZATION
CHECKLIST

1	2	3	4
Urban and regional potential	- Technological innovation promotion - Export-base enforcement and competitiveness support - Qualification of high level services	• Rate of productivity increase • Concentration index and increase rate of patents • Export rate, high skill exports indices • Multinational headquarters concentration • Airport capacity and activity indices • High level infrastructure connectivity (high speed trains,..) • High quality hotel score	* Allocation of technological poles and universities * Urban cabling and telecommunication networking * Improving fair, and exhibition system * Infrastructural modernization
Neighborhood economy development	- Employment opportunity and variety - Industrial conversion linked to local lab-market diversification - Containment of investment risks - Reduction of relocation costs - Public fiscal balance	• Employment and unemployment levels and distribution • New firm generation rate (jobs provided in the long/short term) • Gross Economic Product size and change • Income levels and trends • Wages and salaries • Public revenues and expenditures; tax structure	* Industrial parks formation * Enterprise zones regulations * District supply of business services (R & D, marketing, import-export, fiscal consulting) * Job generation policies * Availability of land for industrial and mixed uses and for factory enlargement * Adaptive parametrization of land use to local industry conversion
Property and rents valorization	- Positional rarity - Urban marketing - Owners freedom to use land	• Real estate value change • Rent differentials change • Supply and demand balance of similarly zoned lands • Rent spill over indicators	* Granting suitability for high density building * Creation of leisure and shopping areas * Office quote increase in land users * Concentration of top level functions * Environmental changes near property
Careful exploitation of non renewable resources	- Energy saving - Effective urban maintenance - Reclamation of derelict lands - Inner areas renewal	• Energy consumption per GP unit • Derelict land surface (extension and percent) • N. and dimensions of unused factories; sectoral and territorial distribution • Indices of building decay • Utilization rate of public transports • Rate of land redeployment	* Variety of energy sources and tariffs differentiation * Land acquisition to the public domain * Full use of service capabilities and social fixed capital * Speed up procedures for selected reutilization of areas and fabric under-used * Assembly of land and site development works
Analogical effectiveness	Conformance to success factors for similar typology in similar context e.g. for technological poles: proximity to universities, to airports, to capital city, to market; differentiated labor-market and specialist labour force; pleasant residential and working environment; good cultural and residential amenities, good road network and rail link.		

TABLE 2. IDEAL: FULFILMENT. LOCAL WELFARE AND SOCIAL PROMOTION CHECKLIST

1	2	3	4
Housing	- Housing availability and variety - Residential quality - Containing social disruption and people displacement - Privacy	• Indicators of latent demand for housing • Existing stock by size, condition, overcrowding • Building rates for different kinds of houses • Vacancy rates • n. of people displaced by development • n. and percent of people perceiving a loss privacy	• Cleaning blight and slums • Self helping rehabilitation support • Balance between redevelopment and improvement • Linked development, e.g. reaccomodation of families displaced • Supply of distinct settlements for deprived groups(minority g., senior citizens, ...)
Sociability and local identity	- Demographic and ethnic equilibrium - Overall satisfaction with neighbourhood - Job accessibility - Crowdedness	• Migration balance • Change in population distribution by age, sex, race household size, income class • Change in average tenure • Average commuting time and travel mode • Change in duration and severity of congestion • Change in population density • Change in social interaction patterns	• Provide means to foster neighborliness and self-identified sub group in the community • In-commuting reduction • Relieving congestion by establishing circulation hierarchy • Increasing permeability for crossing built areas
Public and private services	- Recreational opportunity - Educational opportunity - Cultural opportunity - Shopping adequacy, variety, and convenience - Local services and shopping accessibility	• Community facilities and service (number, duration, of each type of facility, condition of buildings, quality of environment) • Change in percent of capacity, waiting time per facility • Change in perceived pleasantness of recreational facilities and parks • Change in service accessibility (travel time walking)	• Diversifying the supply of personal services (self market,...) • Fostering integration between public, cooperative and volunteer domain • Temporary establishment of mobile services (library, shops,...) • Increasing connectivity and complementarity among services
Human capital valorization	- Professional and job mobility - Diversification of local entrepreneurial system - Job displacement containment - Labour market requalification	• Innovation diffusion and local spin-off indices • Rate of innovative new-firm creation • Rate of redeployment • Female lab-force participation • Local variety of occupations and employers	• Enterprise and company creation policies • Real service for developing professional skills • Supply of workshop complexes and incubators in the area • Land use regulation/deregulation to diversify sectorial mix

TABLE 3. IDEAL: SALUBRITY. PUBLIC HEALTH, LOCAL SANITATION, AND SAFETY CHECKLIST

1	2	3	4
Public health	- Urban sanitation - Health care quality	• Capacity and condition of sewage disposal systems, refuse collection, etc. • Rate of waste recycling • Hospital facilities and medical services availability • Population/morbidity indicators • Emergency care availability/crowdedness indicators	• Waste recycling strategies • Noise control policies • Use of tree lines as noise screen • Facilities and mitigation measures for handicapped • Home care for the disadvantages (senior citizens, handicapped, ect...)
Natural environment safeguard	- Air quality - Water quality - Noise control - Microclimatic quality	• Outdoor pollution indicators • Indoor pollution indicators • Water demand projections • Change in air (water) pollution concentration by frequency and people exposed • Expected effluents from new development • Change in noise levels and frequency of occurrence • Change in shadow profile and	• Dust and fumes regulations • Mitigation of nuisance caused by building sites • Promoting relocation of clean industries in the areas • Measures for natural spaces preservations
Greenery and open spaces	- Ensuring regeneration of natural resources - Provision and maintenance of parks and green areas	• Change in storm drainage water • Change in air oxygenation rate • Park standards • P.c. budget for green manutening and improvement • Accessibility potential to green areas	• Spacing out of buildings • Ensuring soil permeability • Creation of continuous green systems • Allowing for different ways of enjoying and maintaining green spaces • Destination of shut in land for pro-sumer agricultural use (vegetable gardens, urban orchards, urban farm, conservatories...) • Reduce conflicts with rural interests
Safety	- Personal security and crime control - Place and property defendibility - Minimizing natural hazards	• Changes in rate of crimes (violent, crimes, property crimes, ...) • Change in feeling of security • Change in road safety • Change in fire incidence • Special hazards risks created by development (expert rate)	• Creating different hierarchies of pedestrian and cycle paths • Arranging semi-public filter spaces • Providing the presence of defences allowing the control of interactions
	• Expert rating: professional judgements, ... Interviews and surveys on users preception and satisfaction. Testing with different presentation media: sketches, models, computer graphic simulations, photographs, graphic montage, cognitive maps, overlays maps,...		

TABLE 4. IDEAL: BEAUTY, TOWNSCAPE QUALITY AND PSYCO-PERCEPTIVE DIVERSITY

1	2	3	4
Formal characterization of site	- According/contrasting spatial dominance - Presence of visual recognizable order - Differentiation and hierarchisation of paths and fluxes - Townscape compatibility	° Inventory of landmarks ° Weighing landmarks (singularity and importance) ° Hierarchy/uniformity ° Scale contrast rating (symbolic evidence, major scale intrusion prominent position in confined setting) ° Silhouette and skyline congruence ° Incompatible edges, bands, colors, ...	* Emphasize/subdue contrast in landmarks interference (form, color, silhouette, scale) * Emphasizing emblematicity of public spaces * Preservation of historic values and materials of collective memory * Marking landmarks more accessible * Accordance with the settlement typology * Uniforming roof design and materials
Local attractiveness	- Pleasantness (scenic areas, natural landscape, ...) - View opportunities - Closure, appropriability and site "customization" - Psycho-perceptive variety	° Memorability of the visual impression received from townscape elements ° Rating of physical and visual attractiveness of the development as determined by residents ° Visual fragility assessment ° N. and percent of people whose views are blocked, degraded or improved ° Disturbance of physical conditions currently considered attractive ° Verticality/horizontality ° Repetition/singularity ° Redundance and clarity of cues ° Variety of houses and features indices	* Screening or softening in terms of color and texture * Provide means for the expression of individuality around the home * Intermixture of different things and materials * Emphasize seasonal change by composing vegetation screen and masses (color and density of foliage, water reflections, foreground/background texture,...)
Urban texture recomposition	- Visual unity and compositional harmony - Urban frame porosity - Piecemeal growth - Streets scene continuity	° Harmony of the total scene (degree to which visual resources and landscape features join together) ° Describing and rating grain, density, regularity of build patterns ° Land form patterns ° Edges fitting and boundary scansion	* Balanced distribution of masses and symmetries * Arrange sequences to convey attention * Structure the development giving evidence to city form (radial, grid, multicentered, ring, linear) * Facades continuity and rhythm of interruptions * Providing off-street parking

The tentative checklist in Tables 1, 2, 3, and 4 is only illustrative, and should help to sort out the appropriate parameters through association, opposition, nonsense cleaning, and so on.

In order to figure out the redevelopment potentials of the projects on the city scale, the parameters are distinctly assessed on three levels:

- (i) the project area
- (ii) the adjacent urban context
- (iii) the other competing locations within the urban system

The columns of matrix A are headed by a detailed description of the project (see Table 5). The resulting profile should help code a standard format for the presentation of the proposal to the local authority's approval.

The columns of matrix B designate the spatial, functional, and kinematic relationships between the project and the surrounding area. By Moles's definition (1961), we see represented there the "functional complexity" of the project in the vertical headings and the "structural complexity" in the horizontal ones.

The columns of matrix C show the locational setting, the settlement carrying capacity, and the additional area-wide infrastructures to be undertaken by other agencies to support the project.

The row-defining procedure implies a wide social interaction, while the column-defining procedure is a predominantly technical one. In the cells of the grid we have to set out how alternative changes in the physical environment have an impact on different areas of the urban quality. The scalars a_{ij} are estimates of the expected impact on the parameter i (heading the row) due to the project-action j (heading the column).

On scale A, the alternatives are:

- comparing project and existing situation (alternative 0)
- comparing alternative projects on the same site
- comparing alternative project-implementation by phases

This should allow the design format to conform to the evaluation process, and suggest a remedial approach in generating alternative projects on the same site, to be submitted to the Environmental Impact Reports.

TABLE 5. COLUMNS OF THE EXTENDED MATRIX. A:PROJECT AREA; B:SURROUNDING CONTEXT;
C:FUR AND NESTED URBAN NETWORK .

* Domains/nodes relationship (concentration, complementarity, subcentring, spill over, crowding out,...) * Area characteristics (inner a., expansion a., derelict a., ...) * Land use transformation by functions	B2 Functional integration	• Building typology and structure • Block size and dimensional relationships (heights, distances, capacities) • Relative location of buildings (alignement, orientation,spacing)	A1 Containers. Disposition of masses
* Domains/channels relationship (spheres of influence, accessibility, connectivity,...) * Traffic generators distribution (for people, freights, both, and hierarchie of generated fluxes, modal split,...) * Location of junctions and characteristics (intermodality,...) * Interference between hierarchy of mobility systems and hierarchy of meeting places	B3 Network consistency	• Distribution of functions (building suitability indices, intersectorial, mix, etc,...) • Structure of real estate and land property (lot shape, size and distribution of lots) • Tenure typology (public/associative/private)	A2 Domains. Land use
* Implementation flexibility (possible alternatives, their compatibility,...) * Obsolescence cycles of project components and plants * Turn-over of allocated activities and lay-out plasticity (expected vacancy times, adaptability to meet unforeseen circumstances,...) * Synergy between under-utilization periods and peak use	B4 Timing consistency	• Channels (fluxes capacity, frequency, differentiation, hierarchy, lenght) • Nodes (typology, hierarchy, location, grid density) • Distribution and configuration of plant networks • Distribution and configuration of transport and communication networks	A3 Networks. Paths, fluxes, mobility
- Project location: national-regional setting; sub-regional setting (core/periphery; outer ring; secondary urban center,...); local setting	C1	• Intensity of use in time (continuous/discontinuous) • Priorities, phasing, linkages in timing, interim policies • Timing coordination of agencies, authorities, promoters	A4 Time. Agenda and urban time budgets
- Area-wide urban actions (infrastructure, reclamation, services, utilities...) demanded by the project from other decisional subjects	C2	• Time complementarity in the use of equipped spaces and infrastructure by different users	
- Variation in the residual carrying capacity of the area	C3	* Containers/domains relationship (pertinence, density, accessibility) * Urban morphology change, described by -fabric fittingness -collective outdoor spaces distribution and asset -circulation, parking, access layout	B1 Morphological framework

On scale B, we have to compare alternative adjustments between the proposal and the urban context, depending on whether

- urban policies are kept constant (land use after Master Plan regulations)
- the project is completed with no contextual intervention
- the project and the Plan Variant are jointly developed

Scale C compares various projects carried out by institutions or corporations in different parts of the metropolitan area. The measurement of the project performances, with respect to the various objectives, can be expressed by

- (1) Cardinal measures of some specified fallback effects or social predictors
- (2) Ordinal ranking or normalized ordinal measures (reducing the impact range to a uniform scale)
- (3) Presence or absence of the impact, or indication of its directions (+/=/-)
- (4) Lexicographic description, possibly associated with the retrieval procedure of a library of simulation models.

Unlike the cost-benefit analysis, where the costs and the benefits cannot be measured by the same unit of measure (the former being the resources employed, and the latter, the goods or services produced) and are thus commensurable only if converted in money, here (following Hill) costs and benefits are always defined in relation to the goal, and as such they are valued as progressing or regressing with respect to that goal.

As the matrix scalars measure the distance between the project and the existing situation, the focus moves from the normative plan-project conformity to an evaluation of expected changes on the present state. This shifts the principle of intervention legitimacy from checking its normative congruity with the Master Plan to safeguarding the existing conditions of life, so that "the description assumes part of the legal value of the Plan" (Mazza, 1991).

The matrices are meant to offer an exhaustive description of the problem map and to make the language and the inference criteria of the different actors involved as coherent as possible. As in the Planning Balance Sheet, the resulting tabular profile of the project alternatives forms a descriptive (not prescriptive) review of social accounts. "As an information device, it aids decision-makers, but it is not a decision-making tool" (Schaenman, 1976). In other words, it is not a way to solve the problem of evaluation, but rather to properly set it; it is an attempt to match the complexity, or density, of the social demand in a complex environment and try to scan its dimensions.

The outlined procedure is in some ways heteroclitic, but it meets some practical purposes that are often neglected in evaluation procedures. In multicriteria analysis there is a large imbalance between the studies on formalized techniques for dealing with the matrix P criteria/objectives, and the work spent to codify the modes of building up the matrix itself. In fact, the taxonomies heading rows and columns are often so sporadic as to invalidate the reliable use of the formal tools and paraphernalia. In addition, they do not permit exploitation of retrospective analysis as a major data source for improving impact analyses because of the heterogeneity of the criteria employed even in similar cases.

Making the parameters homogeneous should help to :

- obtain a replicable evaluation procedure, and so ensure greater uniformity of judgement;
- infer prediction rules from previous experiences;
- provide indicators effectively monitored in similar situations, so as to validate the assessment of proposed developments.

2.3. Targeting the Parameters

Evaluation cannot work in a vacuum. It needs some valued goals or objectives. If the plans give reasonably independent aims and priorities, one could evaluate projects simply by judging the congruity between the objectives of the plan and the simulated impacts of the projects. But, at least in Italy, this is not the case. The plans' objectives are usually so extensive and overlap to such an extent that it makes it virtually impossible to determine their probable efficacy with given resources.

It may then be preferable, as suggested here, to go the other way round, and try to reconstruct the desiderata of the local community from a preliminary inquiry on the objectives of the major, feasible urban projects (the collage of which make up the real plan).

Different decision-makers, different personnel in the program unit, or different segments of the public may have dissimilar values and do not pursue the same goals. Some are conflicting; others, indifferent; others cooperative among themselves. Some goals can be better achieved if made explicit; others, if they remain secret. In any case, the task of project evaluators is not to collect information about the intentions of the promoters, clients, and the public, but simply to check the compatibility among their physical outcomes.

The extensive checklist has merely a discursive function, meant to orient the contents of social surveys, and to center on the brainstorming sessions in public hearings, quartier workshops, and so on, with project advocates, developers, and representatives of the various clientele

groups. In this way, the checklist seeks to reach an understanding of those "whose interests are the objectives intended to represent" (Lichfield et al., 1975). This is perhaps the most delicate and subjective aspect of the evaluation process, and might be the most useful phase of the conversational approach to city planning.

2.4. Centering on the Assessment

Although in the beginning it is appropriate to take into account a broad range of objectives, in most cases only a small subset of them requires detailed consideration, according to the specific typology or local constraints.

In order to identify the achievement parameters of the relevant goals in a particular case, it is easy to check, over the extended matrix, the cells where we notice discrepancies between impact prediction in the rows and project action in the columns. This step is subject to interpretation, however, since the interference is hypothesized, or inferred, from similar cases.

The frequency of the crossing points can give evidence of significant sub-blocks on the extended matrix, where we have to legitimately combine sets of actions and objectives previously considered separately. One screening criterion is to select parameters that are able to be translated into project requirements or related to urban standards. The sub-list of requisites and/or supporting policies designed to implement any specific objective can be used later as a "compensation or mitigation package" in order to indemnify groups or areas whose preferred goals will be disregarded by the project eventually chosen.

Some compositional rules to assemble lower-level objectives in major goals so as to get a manageable matrix are:

- (1) *Maximizing the union between indicators pertaining to the same objective.* Only within homogeneous subsets can we add up different goal-achievement parameters. "Summing costs and benefits only makes sense if they are all referred to the same objective" (Hill).
- (2) *Minimizing the intersection between intermediate objectives pertaining to different goals, especially if they are competitive.* The removal of the largely overlapping objectives, and their replacement with distinct secondary objectives, is necessary to legitimate the weightings. It makes sense to ascribe different weights to different utility indicators, provided that they refer to disjoint sets.
- (3) *Pointing out possible trade-offs between objectives re-classified in families.* The clustering of sub-indicators should apply only to parameters for which there are no internal trade-offs among different target groups. As to objectives eventually neglected,

we can put the previously defined "compensation packages" on the credit side for the corresponding interest groups.

This work of set analysis obviously does not strive for objectivity. It simply has a protocollar function of semantic hygiene. Although it should be prepared in the technical session — where it helps experts in different disciplines define a common language — it should be inspected in the public session, where it permits agreement on assessment criteria.

It is obvious that, if we were to do this *una tantum*, such a procedure would take too much time and money. However, if it were just part of an implementation routine of the strategic plan through locally evaluated projects, the information system previously built up would allow convergence sooner by difference and specification on the judgement modes of the case under approval. This would occur by cyclically providing new pieces of information to update the database on the social metropolitan demand.

2.5. Linking the Ends Hierarchy and the Lattice of Pertinent Impact Predictors

Even after the scoping selection and aggregation, the residual list of objectives can vary in magnitude, scale, and detail, and thus be inconsistent. In order to bring a readable structure to it, we can proceed by splitting disproportionally broad goals into smaller ones, and by explicitly connecting each operation objective with the goals to whose attainment it contributes (Keeney and Raiffa, 1976).

If every objective is consistent with just one goal, the path of connecting lower-level objectives to the upper-level ones is vertical and generates a hierarchical tree, as suggested by Keeney and Raiffa, 1976 (see Figure 2). If, instead, we do not have a univocal relationship between objectives and goals, a semi-lattice results, represented by the dotted lines in the same figure.

The structure of the transversal relationships displays the presence of either complementary (+) or competitive (-) links among instrumental sub-objectives pertaining to different goals. If the logic underlying the hierarchy is sound, the lattice branches will not be numerous, and therefore should be reciprocally compensated.

The urban impact of a project (that is, its backwash or spill-over effects) depends on the degree of spatial saturation, functional congestion, and social adaptability in the context in which it is placed. To clarify the system of interdependence between project actions and the pursued objectives, we can lay out a map of multiple causal loops, as suggested by Maruyama, 1963.

Figure 2. Ends, objectives hierarchy

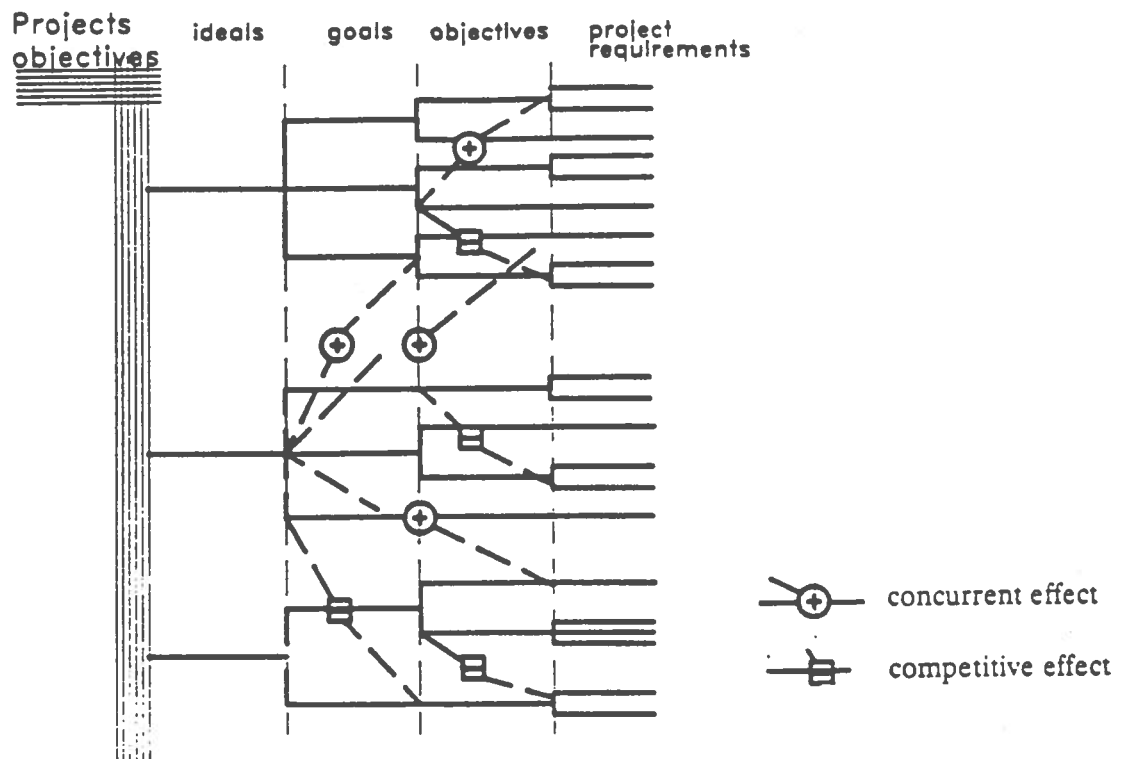
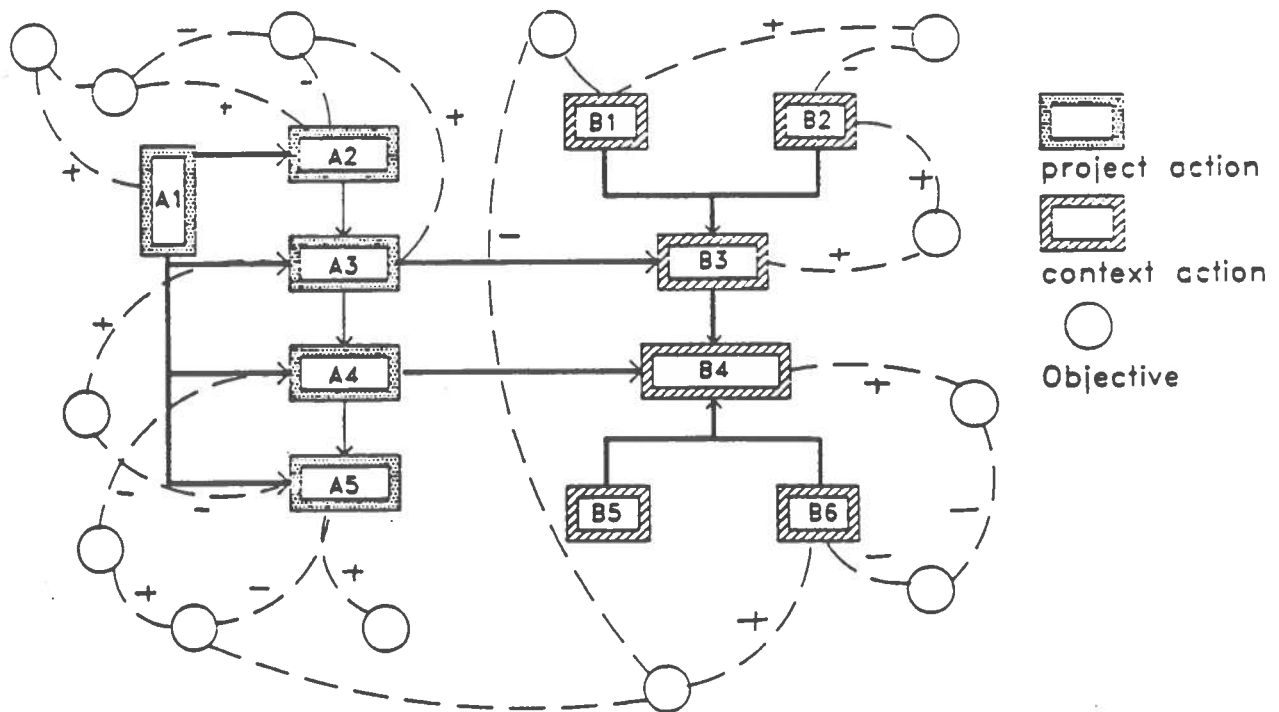


Figure 3. Map of multiple causal interactions.



Before trying to quantify the degree of the correlation between each couple of variables, we can use the set of loops depicted in Figure 3 to infer the system's direction of movement according to the frequency and sign of the loops converging on the nodes of the project actions. Using causal models, it is then possible to calibrate the system parameters, assuming that land use and project actions are endogenous variables, and impact indicators are exogenous ones (see Figure 3, adapted from Guldeberg et al., 1977).

The use of prediction techniques or formal simulation models must be carefully centered on, especially in the impact assessment. In fact, if the explanatory ability of quantitative models is uncertain on an aggregate level under steady conditions, it is quite unsatisfactory at the micro-scale and in the presence of strong exogenous shocks. Inasmuch as major projects are innovative for the urban framework, they invalidate the forecasting effectiveness of techniques that are primarily based on trend projections. Furthermore, the estimate of policy-generated benefits, questionable even at the first impact, becomes altogether hypothetical in successive rounds, mainly because of substitution effects.³

In this context, the use of the model is "local" and does not claim any explanatory function —only an argumentative one —disproving some connections and supporting others. Moreover, having specified the typology both of the intervention and of the context, in retrospect we can choose similar cases to validate the estimated range of calibration.

2.6. The Reduced Matrix and the Comparison between Location Alternatives

With a "clean hierarchy" it now becomes possible to add up lower objectives with joint effects on the same goal by partial sums along the columns. Similarly, for project actions with congruent effects on the objective heading the row, it is possible to assemble the correspondent-impact items by partial sums along the row.

In this way, we get the reduced matrices R and S, so that:

- In the rows we have a synthesis of the original checklist, with a selection of indicators significant for the case under exam, and grouped in reasonably disjoint classes of like breadth.
- In the columns we find a synthesis of the original, detailed, project-context description with aggregate vectors of impact that are distinct by volumes, surfaces, networks, and times.

The comparison between the column vectors r_j and s_j ($j = 1, \dots, 4$) shows, respectively, how the morphological fit between project and context, and how the functional complement, the net-

work consistency, and the synergy of usage times affect the quality objectives and parameters shown in the rows. This comparison also shows how the local offer, exceeding the existing demand, is exploited by the new intervention, and the extent to which the latter matches the unfulfilled needs in the area.

If the standards are defined in a performative way (with respect to environmental quality thresholds, density indices, urban time budgets, and accessibility), it is possible to evaluate the trade-off between goal achievement and standards by using the reduced matrix. That helps policy-makers and developers evaluate the mutual adjustment between real services or mitigation policies required to implement the project, thus achieving a more equitable cost-sharing.

We now have to check the alternative impact of proposals carried out by competing corporations in different locations of the Functional Urban Region (FUR). To this purpose, we have to compare how the relative reduced matrices match the wide area description represented in Table C. In this way, we simulate the strategic role played by each project inside the whole metropolitan system.⁴

On this scale, it is convenient to compare the estimates of the expected urban impact of the various project alternatives to different normative scenarios.⁵ If the match between R, S, and C is convertible in costs, it could be compared to the results of the gap analysis (which displays the financial gap between project costs and the pool of available private financial resources) in order to orient the public decision to join the venture.

3. REDISTRIBUTIVE EVALUATION

3.1. The Equity, Variety, and Sustainability Criteria

So far, we have described the probable impact and screened the projects by testing their feasibility, legal congruence, and urban efficacy, without introducing any specific choice criteria regarding sustainability and equity towards people and places.

The definition of priority ranking among goals of the same level presents obvious redistributive effects. These cannot be accounted for using the impact matrices because it is impossible to measure individual utility functions in order to get a function of collective preference. Furthermore, most of the impact measurements are reciprocally incommensurable, and there is no common denominator for computing one in terms of the others.

Attempts at a synthetic description of the utility obtained by converting each measure of performance into points or into dollar value, "obscures the essentially political nature of choice between alternatives" (Hill, 1985). In fact, the pursuit of any objective results in different costs and benefits to different groups and areas; thus it would be incorrect to add up the scalars to get a summary score of social utility. Such a theoretical limit is also a practical one because, if hiding social contradictions speeds the decision process in a centralized system, in a democratic context this only generates "exits."

This problem requires representing the decisional context in a discreet way, in order to get a satisfying solution throughout the principle of the best compromise.

3.2. Identifying Clientele Groups and Weighing Their Preferences

Every rational agreement, pursued by contract, requires clear identification of the contracting parties. This clarification is both condition and result of the political exchange, "since what defines the social subjects' identity, is just what is left over from the variable packet of the exchangeable items" (Veca, 1982).

In a normative sense, every affected or potentially affected party-at-interest has a right to be involved in the negotiation, so as to ensure that all the most vulnerable parties— unable to displace detrimental effect — may be taken into account. Some clientele groups, potentially affected by the project, can be identified *ex-ante* using the following criteria (summarized by Schaenmann, 1976):

- *physical proximity* (persons living on or adjacent to the land proposed for development, or in surrounding neighborhoods)
- *business relationships* (builders, realtors, bankers, and others directly involved in the development; also owners and managers)
- *political jurisdiction* (citizens of local jurisdiction or of immediately adjacent jurisdiction)
- *socio-economic and demographic groups* (age groups, racial and ethnic groups, and income-level groups)
- *other interest groups* (tourists and land owners)
- *the long-term public interest* (future generations and present groupings over time)

For each one of these groups, it is possible to select issues or impact measures deserving specific consideration.

In order to make the procedure inclusive, other groups— whose intentions are not expressed *a priori* — can be brought together by clustering their relations of uniformity, independence, anti-conformity, or conformity, with respect to different categories of impact. For example, people working in the area, potential immigrants, visitors or shoppers, and local entrepreneurs generally have competing objectives, but can reveal similar schemes when placed in opposition to the preferences expressed by people living there.

The system of local expectations can be obtained by social surveys, public hearings, and workshops, and by interviewing experts and group representatives. All of these choices are aimed at stating and rating preferences regarding the project's objectives and impacts. For convenience, the request for weighing indication should be addressed distinctly to the different social groups, in order to get from each one the weighing scale for relevant objectives summarizing their relative importance. There are cross-groups and cross-temporal variations in the satisfaction level previously achieved with respect to the different life-quality indicators. These will admit no semi-experimental evaluations of the expected project impact. Therefore, even sophisticated studies— aimed at reaching a kind of *una tantum* evaluation of subjective and objective life-quality indicators through vast research with random samples — fail to avoid the pitfall of implicitly assuming constant, rather than diminishing, marginal utility from additional unit increases.

In the well-established approach (dating from the works of Hill and Lichfield), the choice of preferable solutions is made through a cross-group, cross-objective system of weighing. The point of view of the actors involved can be inferred on the basis of the weighing hierarchy assigned by the different groups to the different goals. In addition, we can assign to the different social groups, promoters, or targets, different weighing coefficients, expressing the relative importance the decision-makers attribute to each one of them within the social structure. This system allows us to get an overall assessment of the extent to which the different alternatives can fulfill the expected goals.

An interactive view of the weighing approach is suggested by Kaufmann (1986), who shows how scoring the relationships of power, salience, and position among target groups supports strategic implementation and helps identify effective alliances. Furthermore, mapping relative positions in a friendship-neutrality-hostility chart (as devised by Coplin and O'Leary, 1976; and ironically depicted by Cipolla, 1988) gives a kind of topological representation of groups' ophelimity that can improve understanding of the scope of cooperations and conflicts within a project.

3.3. Assessing Social Trade-Off

How can we take into account multiple voices when attempting to represent urban impacts?

Following the goal-achievement methodology, we can use the taxonomy of social groups involved or affected by the project to designate the columns of a matrix of social impacts (Figure 4), where it is possible to represent how or how much alternative projects affect specific objectives. The importance of the objectives will vary among different groups of interest.

The row sequence is the same as we have seen in the reduced impact matrix. The scalars designate advantages and disadvantages imputable to the different social actors with respect to the achievement of the row objectives. Wherever possible, they are expressed in terms of costs, or at least with signs of the utility direction (+, -) of the social groups heading the column.

It is also possible to identify, at least for some critical requisites, the admissible range of variation. This will be different for the different social groups. The crossing of which, however, would be too much for some groups to cope with, which should prevent making large mistakes.

The table permits us to describe the basic trade-offs:

- the utility distribution of a given social group, attainable by pursuing different objectives and readable along the columns
- the substitution rate of advantages for one group with costs for another, which results from the implementation of a given objective or requisite and readable along the rows.

Because of the co-existence of different objectives, it is convenient to resort to an ordering procedure of the expected performances in order to isolate the solution that maximizes the overall social advantage. On the basis of the weight vectors (high, medium, low), we can rearrange the objectives for each group into essential, major, or minor ones.

The cross-group comparisons of the different weighing vectors allow the identification for each project of the stable areas, the shared-utility areas, the indifferent areas, and those whose achievement is likely to foster the strongest inter-group competitiveness. The product matrix between the project expected efficacy and the normalized weight vector shows, in each project, which groups can suffer or benefit the most from it. It also helps us determine the greatest number of cross-group sensitive objectives.

A working hypothesis to advance from impact evaluation to plan implementation (by conditioned urban project) is to construct a chart of social trade-offs in order to measure the range in which the benefit costs for some groups are charged to another group. This should be done for the most sensitive groups and indicators (Figure 5), if not all.

Figure 4. The inter-groups (or inter-areas) impact matrix

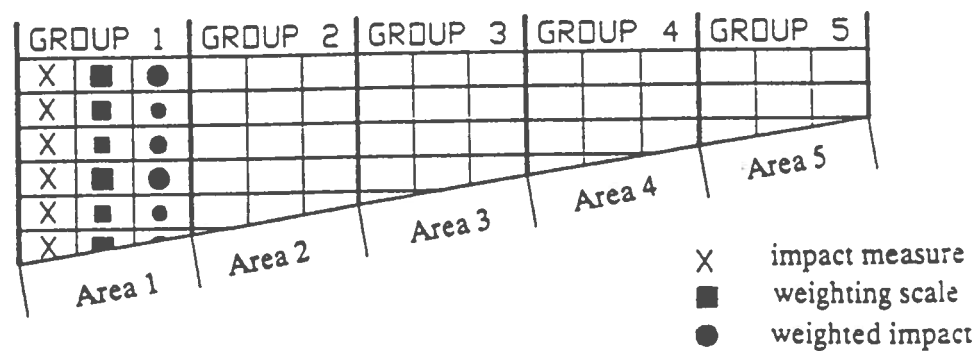
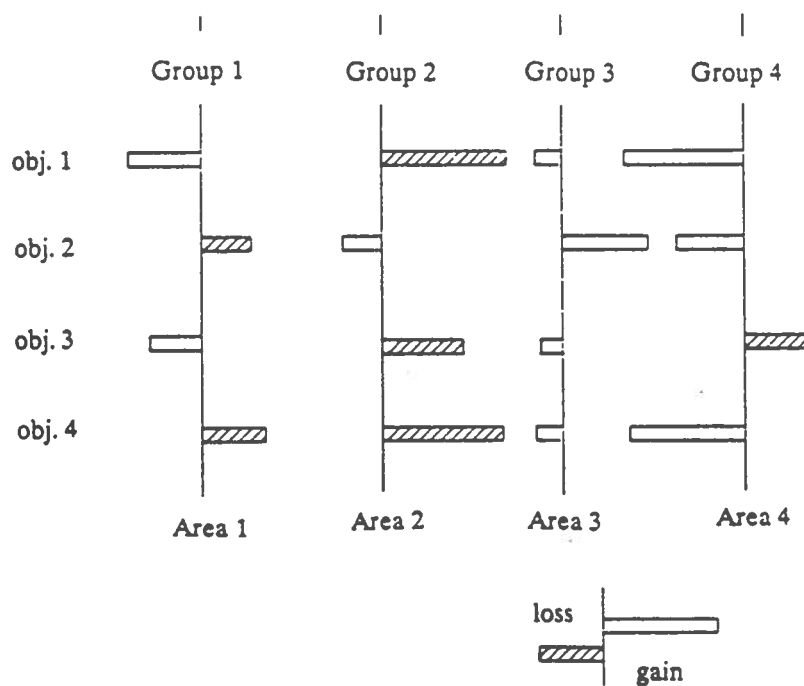


Figure 5. Chart of social trade-offs



Even if the residual objectives and the groups themselves are less numerous, the problem of choosing the preferred solution, surrogating a multidimensional curve of indifference, might be insoluble, both for computational and political reasons. It is crucial from the interpretative point of view, and so we need to ensure its logical consistency (see Palermo, 1981).

However, at the practical level, it could be iteratively worked out through intra-group zero-setting procedures for surrogate objectives, and real compensation policies for objectives that are not transferable. If we consider the groups in twos, for each couple of opposing impact objectives we can even up the relative disadvantages in a sector with the simultaneous advantages in others (that is, by paired comparison trade-off procedures, among ranked items; for a short review see Finsterbusch and Wolf, 1975).

Rather than computing the substitution elasticity matrix, we can make use of the so-called "trade-off game method" (Johnson, 1990), which turns the suggestion to resort to public hearings instead of to computer runs into a replicable procedure. This is done in order to estimate trade-off sets among parameters not described in commensurate units (McAllister, 1980). As to non-transferable objectives, a mitigation of the detrimental impacts can be had by aggregating different "compensation packages," so as to build up a composite "shadow project."

The basic shortcoming of the procedure outlined above is that it assumes that social actors with uneven degrees of power can play the simulation game in conditions of parity. This may occur mainly for indicators with such a deep and concentrated adverse impact as to be near threshold values, so that the possibility to turn to legal opposition is likely to impose a conciliatory approach.

3.4. Assessing Spatial and Temporal Trade-Offs

A similar approach is suggested for assessing spatial trade-off. Relying on perimetrical criteria for local impact analysis and network clustering for ranking flux, we can identify a typology of areas affected by the project and build up a matrix of expected spatial impacts (see Figure 4). On this matrix, it is possible to represent how different solutions affect different urban sub-areas in order to identify the most vulnerable sites.

The related chart of area spill-over/backwash effects (see Figure 5) can simulate the displacement pattern of the project. Throughout a sensitivity analysis it is possible to select the minimizing trade-offs, then define inter-urban mitigation projects (especially accessibility-oriented) or compensation policies.

As many impacts vary over space, other may vary considerably over time and along the chain of successive rounds. Thus, they need to be distinguished by whether their effects are long- or short-term ones, so as to take into account their cumulative impact. This will ensure that they can be included round after round. The relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity is thus summarized by the EIR guidelines:

- a. Describe cumulative and long-term effects of the project which may adversely affect the environment. Relate the cumulative effects to other development in the area.
- b. Specify effects of the project which narrow the range of beneficial uses of the environment or which pose long-term risks to health or safety.
- c. Indicate why the project should be undertaken now, rather than reserving the site for future alternative actions.

The last guideline also poses the problems (as in the cost-benefit analysis) of how to deal with time through an opportune discount rate, and of how to deal with the uncertainty of the expected consequences. These can be ranged by prospective analysis in order to provide a pack of normative scenarios (weighed in terms of probability, or correcting the discounting back rate with a risk factor).

The first two can be described in more detail drawing a table such as the one in Figure 6, showing the inter-temporal effects in the columns and a selection of the reduced matrix indicators in the rows that make more sense for evaluating cumulative effects of development. The scalars can represent the project impact on the indicators, allowing for the effects of the work in progress, the first round effects, and for the variations that may subsequently occur. Since different impacts may have synergic effects along the time (so that groups of minor impacts at time t could cumulate and produce a major one later on), it is useful to display the generation sequence of subsequent rounds of impacts by trees of deviation amplifying (+) feedback and by roots of deviation counter-acting (-) feedback (see Figure 7).

The scalars will point out the width or the direction of the occurred variation on the parameter and its distance from "targets to be reached or ceilings to be avoided" (Schaeman, 1976), in addition to discriminating between reversible and irreversible effects. If, for example, we take air quality into account, having defined a ceiling of maximum tolerable emission gas exhaust z , we can measure not only the variation quota brought about by the project to date x , but also the remaining margin for future development, given by the length of the segment $z-x$. The sum of such segments assigns the residual carrying capacity of the urban area under exam.

Figure 6. The inter-temporal impact matrix

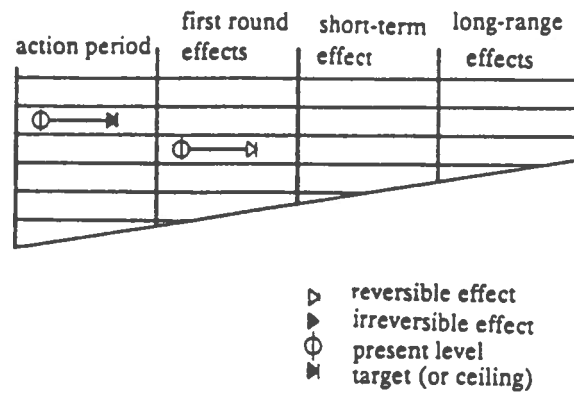
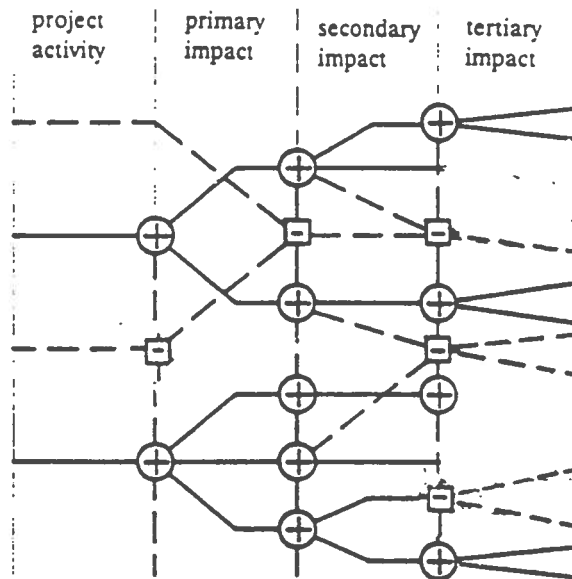


Figure 7. An hypothetical impact tree



In addition, the rows should list all the indicators connected to some kind of performance standards or for which some target or ceiling have previously been defined.⁶

Again, the relative importance of the inter-generation impact indicators cannot be defined *una tantum*. Even the marginal utility of long-term goals changes in time depending on the degree of fulfilment of the fungible objectives agreed upon in the strategic plan, and on the distance from non-transferable standards, which cannot be entrusted to negotiation.

This kind of weighing, which makes the point of view of the political apparatus explicit, is to be justified in perspective, thus posing the problem of defining choice criteria in view of the macro trade-offs: efficiency/equity/environment sustainability.

4. NEGOTIATING RECIPROCITY

The efficiency/sustainability trade-off can be dealt with through scenario analyses. For example, as previously suggested, normative scenarios can be drafted based on the way project actions of different scale (A, B, and C) — undertaken by different public and private decision-centers — combine together.

In evaluating urban projects, we could avoid taking redistributive effects into consideration only in the case of a coincidence between greater efficiency in allocating resources and maximum collective welfare. This could happen only under a very extreme hypothesis. Since the basic reason for public intervention is a gain from a better income redistribution, the efficiency/equity trade-off should be explicitly taken into account. The alternative view holds that policy decisions should be based only on efficiency grounds, relying on fiscal transfers for income redistribution (Musgrave, 1969). However, this assumes a costless and instantaneous institutional system (Richardson, 1978). Moreover, it implies an efficient and impartial redistributive Leviathan. The basic cost of this approach is its distortion of the purposes of the techno-political apparatus.⁷

A working hypothesis to deal with the efficiency/equity trade-off regards the efficiency as a constraint and equity as an objective, depending on the dominant phase in the city-life cycle (Curti, 1986).

In the short run, there is also a relevant trade-off between equity and environmental sustainability. As demonstrated by Baumol (1979), the environment safeguard is a kind of strongly regressive growth taxation, with more negative effects on lower-income classes and less developed areas, since these both are more sensitive to employment problems and more exposed to inter-

regional competitiveness. This is also true inside the city, as noticed by Hirsch (1976), at least on the subject of the redistributive effects of growth control and land use regulations. A paradigmatic evidence of the problem is illustrated by the case of the San Francisco Bay Area, where the less favoured Oakland area asks for "go policies" while the richer San Francisco area asks for "stop policies."

To cope with such a clear-cut bipartition of the political market we had better consider the penalizing results of plan variants and project mitigations in terms of ophelimity; that is, identification of different compensation weighs for different social subjects. In this hypothesis the weight of each objective (and its corresponding compensation, if not fulfilled) can be assigned on the basis of the gap between the intervention context and the standard values of that goal; thus, the evaluation process also turns into a flexible way of implicit normation, coherent with the maximum-minimum principle (Rawls, 1971). Therefore, we can build into the "post-modern" plan-making practice the old modern principle of marginal ophelimity, thus justifying progressive tax.

From the previous trade-off analysis, it is possible to set out a system of conditional rules to be satisfied together with the implementation of the project. Afterwards, by introducing mitigation works for the unavoidable adverse impacts, or compensation policies for the transferable ones, we will indemnify the most vulnerable groups and areas by ascribing their costs to the most advantaged ones.

To this purpose, instead of acquiring techniques for connecting linkage fees and mitigation policies (JAPA, 1988), it is perhaps more convenient to adopt a kind of "object-oriented approach," as proposed by the "shadow project" idea (Klaasen and Botterweg, 1976). Converting intangibles into money and fiscally compensating the damages generated by the proposal does not preserve the environment from the chain of deteriorations. Therefore, they suggest indemnifying the environment itself by undertaking a regenerative project, the cost of which should be at least equivalent to the induced deterioration. The shadow project approach is not completely satisfying as an accounting artifice of the environment's decay, in particular that of the urban habitat, both because of its historical uniqueness and of the high positional variability of values. But it is more effective as a device for long-term impact management aimed at defining complementary projects to mitigate both the negative effects on intangibles (Nijkamp and Van Delft, 1977) and the strategies of real compensation between groups and areas.

The social trade-off analysis should allow public participation to identify and legitimize explicit requests and, in this way, define a framework for clear negotiation. The inter-urban

displacement analysis can help concurrent local governments build up partnerships to implement common projects over wide areas, instead of engaging in reciprocal vetoes.

Ascribing cost-benefits in terms of real outcomes is a way to reintroduce barter as a manageable decision tool in a dark political market.⁸ It is also a way to give back to the "reciprocity" operator⁹ —typical of the cooperative networks— its structuring role in the implementation process of the indicative plan by means of conditioned urban projects.

The outlined evaluation procedure can be seen as an interactive framework of a decision process, where the decision-maker defines the hierarchy of long-term objectives, while the program personnel, experts, clientele groups, and other local municipalities affected by the project contribute to setting the weighting scale between objectives and social parts. Redistributing decision-making and negotiating roles should allow us to deal with uncertainty without avoiding responsibility.

NOTES

¹This occurs even more easily when, as in many Italian cities, megaprojects turn out to be in contrast with the Master Plan in force.

²As incisively summarized by Hill (1985): "*corporate planning*," when separate corporate bodies independently determine the best strategies for their own sake; "*central planning*," when a powerful authority directs and coordinates the interlocking system of urban relationships as a whole; "*policies planning*," when distinct agencies of institutions carry out their initiatives separately or in parallel; "*participatory planning*," acted by small groups of people interested in or affected by the planned intervention.

³For example, we want to reckon the gross benefits in terms of the amount of employment generated by a given public investment increasing the efficiency of some group of firms: if we do not take into account the displacement effect on the competing firms, we risk over-estimating the additional job demand, etc.

⁴E.g., with regard to: the shaping of new intra-metropolitan centers, decongestion of the central area, requalification of the outskirts, redistribution of the induced fluxes, intersectorial specialization/diversification of productive field, techno-economical innovation of the urban area, inner areas restoration, and better utilization of existing infrastructural system.

⁵Moreover, we can draw normative scenarios by comparing different sequences of feedbacks and lags between project-actions, context-actions, and area-wide actions. The bunch of normative scenarios resulting this way should be tested with respect to two extrapolative borderline scenarios, obtained by projecting previous trends according to a low and high hypothesis of boom or stagnation in the aggregate demand for the same building typology.

⁶This, in turn, is not to be understood in an univocal sense, repeating for the artificial habitat the misunderstanding of the Roma Club about development limits, but it is to be connected to the concept of adaptability of the urban environment —that is elasticity of long-term substitution of the built structure.

⁷As the public choice theory has corrosively proved (Tullock, 1962; Buchanan, 1969), the decision-maker's main aim is often to maximize short-term consensus, which brings one to give priority to benefits that appear contemporaneously with the electoral mandate. Public projects, especially in the case of urban interventions, instead activate indirect multiplicative effects on the adjacent activities and spill-over ones on the context quality. Such impacts represent a relevant quota of the benefit entries, often incommensurable with the price system. As a result, the discretionary margins in the estimate of the side-effects reduce the evaluation procedure to little more than a *petitio principii* (Hirschman, 1975).

⁸As the financial transformation of land and real estate makes transactions unreadable for the large public, similarly the monetization of exchanges makes the pace of the political market so fast as to hide from most of the local electorate the role played by different decision-makers.

⁹Such an operator is frequently disregarded because of a mere transposition of a Fordistic view (dominated by the operator competitiveness/hierarchy) from the business sphere to the social one.

BIBLIOGRAPHY

- Baumel, W., and W. Oates. 1979. *Economics, environmental policy, and the quality of life*. New Jersey: Prentice-Hall.
- Bosselmann, P. 1989. "Dynamic Simulation of Urban Environments: Twenty Years of Environmental Simulation at Berkeley." *Institute of Urban And Regional Development Working Paper* No. 509.
- Colorni, A. 1991. "Qualche riflessione sui metodi di analisi e valutazione per i grandi progetti metropolitani." In *Il governo delle trasformazioni metropolitane*, R. Bellotti and G. Gario, eds., Milano: Franco Angeli.
- Coplin, W., and M. O'Leary. 1976. *Everyman's Prince: A Guide to Understanding your Political Problem*. North Scituate, Mass.: Durbury Press.
- Curti, F. 1986. "Counterurbanization or selective reurbanization: Some explanatory hypotheses from an hybrid model." *Archivio di Studi Urbani e Regionale* 4.
- Dery, D. 1990. *Data and Policy Change. The fragility of data in the Policy context*. Boston: Kluwer.
- Dowall, D. E. 1989. "Public Real Estate Development: A New Role for Planners." *Institute of Urban And Regional Development Working Paper* No. 496.
- Finsterbusch, K., and C. P. Wolf, eds. *Methodology of Social Impact Assessment*. Stroudsburg, Penn.: Hutchinson Ross Publ.
- Friedmann, J. 1973. *Retracking America: A Theory of Transactive Planning*. New York: Anchor Press.
- Guldborg, P. H., F. H. Benesh, and T. McCurdy. 1977. "Secondary Impacts of Major Land Use Projects." *AIP Journal*, July 1977.
- Hill, M. 1982. "Can multiple-objective evaluation methods enhance rationality in planning?" In *Rationality in Planning*, M. Breheny and A. Hooper A., eds.
- Hirsch, F. 1976. *Social Limits to Growth*. Twentieth Century Fund.
- Kaufman, J. L. 1986. "Making Planners More Effective Strategist." In *Strategic Perspectives on Planning Practice*, B. Checkoway, ed., Lexington: Lexington Books.
- Keeney, R. L., and H. Raiffa. 1976. *Decision with Multiple Objectives. Preferences and Value Tradeoffs*. New York: John Wiley & Sons.
- Klaassen, S. W., and T. H. Botterweg. 1976. "Project Evaluation and Intangible Effects: A Shadow Project Approach." In *Environmental Economics*, P. Nijkamp, ed., Leiden: Martinus Nijhoff.

- Johnson, R. 1990. *The Economics of Building*. New York: John Wiley and Sons.
- Lanzara, G. F. 1988. "Designing in complex environments. The case of the metropolis." Paper presented at the 2d Conference on *World Cities and the Future of the Metropolis*, XVII Triennale di Milano, 9-11 November.
- Lichfield, N., P. Kettle, and M. Whitbread. 1975. *Evaluation in the Planning Process*. Oxford: Pergamon.
- McAllister, D. M. 1980. *Evaluation in Environmental Planning. Assessing Environmental, Social Economic, and Political Trade-offs*. Cambridge, Mass.: The MIT Press.
- Mazza, L. 1991. "Il riordino urbanistico della città metropolitana: quale forma di pianificazione?" *Confronti*, forthcoming.
- Mioni, A., T. Bagnati, M. Barzi, and F. Curti. 1990. *Sistemi di simulazione e di valutazione per l'istruttoria regionale di grandi progetti di intervento territoriale. La funzionalità urbanistica*. Milano: IRER.
- Nijkamp, P., and A. Van Delft. 1977. *Multi-criteria analysis and regional decision-making*. Leiden: Martinus Nijhoff.
- Palermo, P. C. 1981. *Politiche territoriali e modelli*. Milano: Franco Angeli.
- Rau, J. G., and D. C. Wooten, eds. *Environmental Impact Analysis Handbook*. New York: McGraw Hill.
- Rawls, J. 1971. *A theory of justice*. Cambridge, Mass.: Belknap Press of Harvard University Press.
- Richardson, H. W. 1978. "The State of Regional Economics: a Survey Article." *International Regional Science Review*, Fall.
- Schaenman, P. S. 1976. *Using an Impact Measurement System to Evaluate Land Development*. The Urban Institute, Washington.
- Smardon, R. C., J. E. Palmer, and J. P. Felleman, eds. 1986. *Foundations for Visual Project Analysis*. New York: John Wiley and Sons.
- Teitz, M. B. 1978. "Policy Evaluation: The Uncertain Guide." *Institute of Urban And Regional Development Working Paper* No. 298.
- Tutino, A., ed. 1986. *L'efficacia del piano*. Roma: edizioni Lavoro.