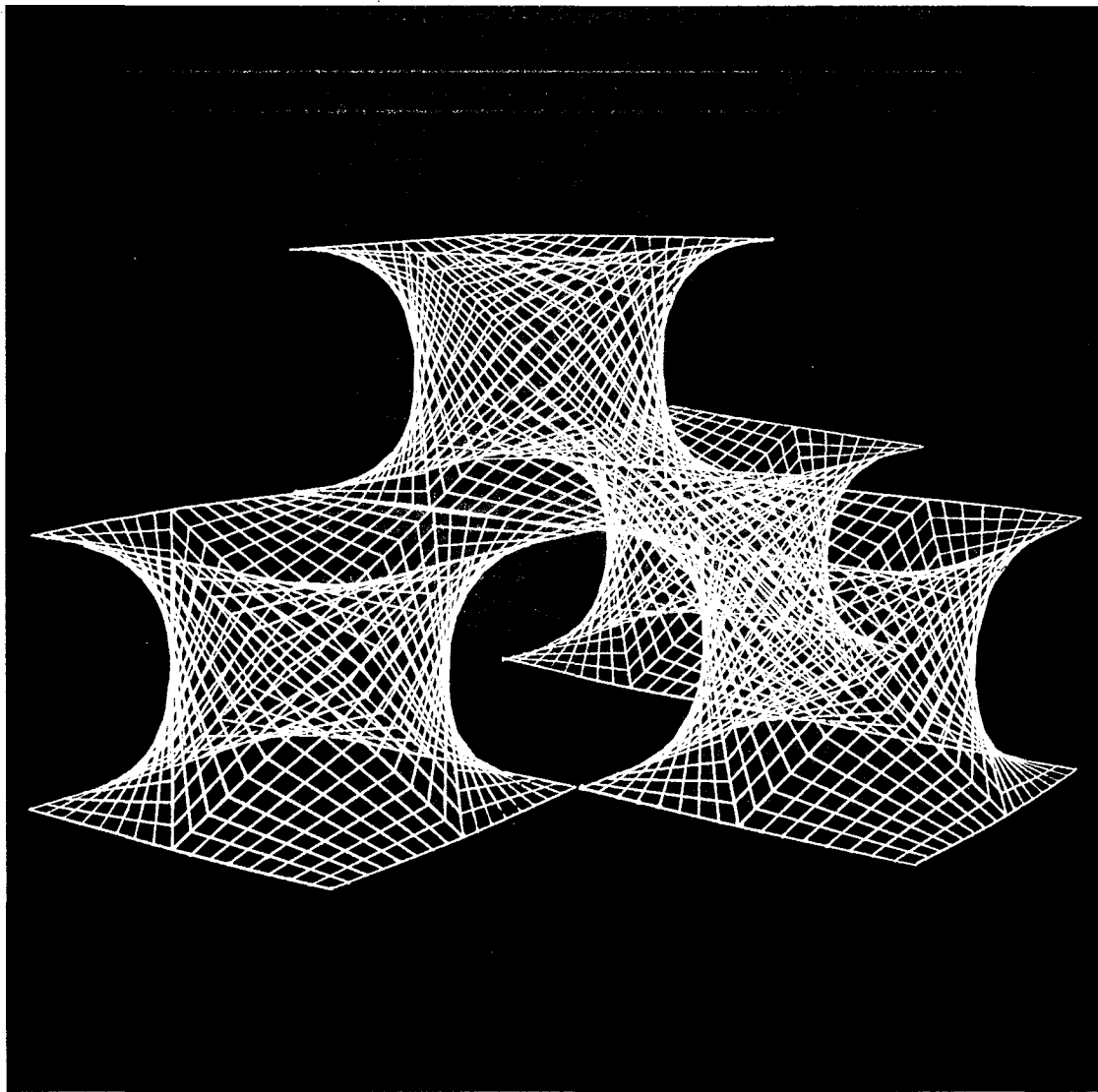


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ORDERING PRINCIPLES IN 20TH CENTURY URBAN DESIGN APPROACHES

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Abstract: *The paper presents a comparison of ORDER in twentieth century approaches to urban design. ORDER is discussed from a meta-content perspective, according to two counterparts: 1. order as arrangement; 2. order as command. Fifteen prevailing urban design approaches are examined in relation to the type and degree of physical order they propose. Then, their sources and power of authority are exposed and classified. Historical evidence supports the paper's conclusion, namely that the actual "ordering capacity" of any approach may be directly related to the arrangement / command counterparts.*

1. PREFACE

Principles of physical order, usually intended as form generators of actual urban surroundings, are the ideological core of any U.D. (urban design) approach, and have been lengthily discussed (e.g. Gosling and Maitland, 1984; Broadbent, 1990). Thus, orthogonal forms, parallel housing arrangements and extensive open spaces are usually associated with Modernism and the first half of the century. Neoclassical free forms and spatial definition of continual public spaces are the characteristics of Post-Modernism and the second half of this century. Most Modernists' approaches regard urban physical order as a means towards universal solution of social problems, while (some) post-modernists seek the local cultures as bases for humanized urban places.

This paper does not intend to offer a similar clustering around the opposed poles of Modernism and (rediscovered) Classicism. Rather, it is concerned with the parameters of ORDER in U.D. approaches, regardless of their specifics. It raises questions such as: What is the locus of ORDER in various urban design approaches? How could ORDER be compared despite changing formal preferences? What could be the characteristics of ORDER in U.D. principles?

Therefore, our focus moves from urban form to the meanings of ORDER. Fifteen of the leading approaches to twentieth century U.D. are discussed as the empirical sphere for the above enquiry (The list of approaches is presented under "references").

2. TWO MEANINGS OF ORDER

ORDER as noun and verb has two major meanings: (1) arrangement and (2) command.

Order as arrangement is a state in which components or elements are arranged logically, comprehensibly or naturally, according to formulae, rules or laws. Order however, implies more than the state of affairs. It is value saturated in that it is the desired condition of society, peaceful and harmonious, as against chaos, disorder, confusion, mess, anarchism, jungle.

Order as command is an instruction that must be obeyed, a commission or request to produce or supply something. It sets a direction for action, and relies on the power of authority, convention, tradition or force.

The question raises if the two meanings are mutually related, if they complement each other or are mutually dependent. Language suggests it to be a cultural matter. In English, French and German ORDER contains the two counterparts, unlike in Hebrew, Arabic and Russian, where "arrangement" and "command" are referred to by two different words. (In Hebrew: *sefer* vs. *tzav*; in Arabic: *nizam* or *tartib* vs. *amir*; in Russian *poaradoc* vs. *prikaz*).

Nevertheless, one is tempted to speculate that the imposition or even the reading of a certain order is always dependent on a degree of ordering as command. The exercise of authority is necessary simply in order to exclude other arrangements or alternative readings.

The speculation of mutual dependence has special importance for the discussion of ORDER in U.D. approaches, since epistemologically these are ideologies, and by definition must have their *sayings about what "is" and what "ought to be"*. Accordingly, they must have two counterparts: one which enables description and analysis, and one which channels change according to a set of values. The first is connected to ORDER as arrangement. The second - to ORDER as command.

3. DEGREES OF ORDER AS ARRANGEMENT

Order as arrangement has itself two counterparts: *Distinction of objects* and *definition of relationships* between the objects.

Distinction of objects is the activity of clustering and differentiating within the Heraclitic flux of urban culture. It enables the reading of urban objects for further discussion, evaluation and actual intervention. These objects may be common, such as squares, public gardens and blocks, or unprecedented, such as "monuments" in Rossi's sense (1982) or "decks" in Smithson's sense (1968).

These urban entities fix the relevant *perspectives or aspects of observation* and the *suitable scales of reference*. The Athens' Charter, for example, took a functional perspective which required only general differentiation between "dwellings", "recreation", "work", "transportation" and "historic buildings" (Le Corbusier, 1943). Lynch (1960) presented five completely different urban entities based on human perception ("paths", "edges", "districts", "nodes" and "land-marks"). Alexander (1977) introduced 253 patterns, which clustered and differentiated every urban entity, from the general scale of cities in their natural regions to the details of furniture on a veranda.

The urban entities of each approach define also the width and *continuity of the field* under examination. Alexander (ibid.) covers the entire city and surroundings. Rob Krier (1979) - only the public realm. Bill Hillier (1984) relates only to streets.

Thus each approach has its set of urban "bricks of game". There is little sense to ask Hillier about the urban "locus" (Rossi, ibid.), just as it is unthinkable to consult Rem Koolhaas (1977) about "place making" (Norberg Schulz, 1980). Urban entities are not neutral or "objective". They embody value saturated presuppositions, such as application of socialist ideas (Howard, 1961), the salvation of European urbanism (Le Corbusier, ibid.), or a return to neoclassicist urban forms (Krier, ibid.).

detailed scale	detailed-large scale	large scale	
- "2" - Cullen	- "1" - CIAM Rossi Alexander New Urbanism Critic. Regional Howard	- "3" - Lynch O.M.A. Team X	extensive field
- "3" - Venturi Krier Rowe Hillier	∅∅∅	∅∅∅	BREADTH OF FIELD a fragment

Table 1: Classification of urban design approaches according to ENTITIES.

This article, however, focuses on the discussion of the parameters of order in U.D. approaches, regardless of the specific contents of each approach, their presuppositions, etc. These are discussed only as examples.

Table 1 presents the categories for differentiation between entities of U.D., and a classification of the fifteen approaches under examination. The two basic categories are derived from the primary characteristics of any approach: (a) *the scale* of entities it offers; (b) the extension of area they may cover or "*the breadth of field*".

The scale of entities ranges between *detailed scale*, such as "The points at the top of the two domes of the Piazza del Popolo" (Bacon, 1967, pp.25) and *large scale*, such as "Metropolitan regions" (Alexander, 1997, pp.11). Some approaches cover the whole range of scales, others - only a part. The first are rich in quantity and hierarchy. The later may offer few or many entities, but never a rich hierarchy.

The relevant area for analysis or intervention may be a street or a square - i.e. *a fragment* of the city (Krier, *ibid.*), or an *extensive field* such as the endless urban surroundings of American sprawl (Katz, 1994).

Table 1 clarifies that most approaches which look at extensive urban areas use a whole hierarchy of entities, from detailed to large scale. Conversely, approaches relating to city

fragments use only detailed scale entities. It goes without saying that the first approaches imply higher degrees of order than the later. There is an intermediate level of potential order, connected to approaches which cover extensive areas with a restricted hierarchy of urban entities. The three have been ranked accordingly as “1”, “3” and “2”. Approaches which offer only large scale entities have also been ranked “3”.

Reference to city fragments by large scale entities is logically impossible, hence \emptyset .

3.1. Relationships among urban entities

The second counterpart of ORDER as arrangement is the *definition of relationships*, in our case among U.D. entities. Basically, such relationships may be strictly ordered or loosely suggested. Theoretically, they range between (I) one mathematical (geometric) rule which defines all relationships and (II) no definition of relationships among urban entities. Between these poles of extreme *unity* and *plurality*, there are theoretical possibilities of *geometrical*, *typological* and *hierarchical* unity and plurality. All these categories and *their joint combinations* form the framework for the proposed classification.

However, the empirical examination of U.D. approaches shows, that geometrical unity has never been proposed in itself. If a specific geometrical order is promoted - it is orthogonal, and it always implies a topological principle of separation by means of movement systems. Curiously enough - it is anti-hierarchical. C.I.A.M. wrapped the major transportation system in green spaces, intending to separate “dwelling”, “recreation” and “work”. (Le Corbusier, *ibid.*). More than fifty years later O.M.A. described an ideal introverted urbanism by means of the abstracted and functionally impoverished transportation grid of Manhattan. (Koolhaas, *ibid.*)

Therefore, in Table 2, the approaches of C.I.A.M. and O.M.A. are ascribed both geometrical and topological types of definitions. Regarding the degree of order - they are ranked only second (“2”), after Alexander (“1”). The “Pattern Language” of Alexander, although consisting of a plurality of rules, is nevertheless the most articulate set of relationships among U.D. entities, and it is extremely hierarchical.

unity one principle/rule	plurality several principles/rules	
<hr/>		
- "2" - C.I.A.M. O.M.A. (Koolhaas)		a. geometry
	Alexander (a+b+c)	
<hr/>		
- "3" - Team X, Hillier, Cullen, Krier, Howard, Venturi Norberg-Schulz, New Urbanism	- "1" -	b. typology
		c. hierarchy
<hr/>		
- "4" - Rowe, Lynch, Critical Regionalism, Rossi, Coop-Himmelblau		d. none
<hr/>		

Table 2: Classification of urban design approaches according to RELATIONSHIPS

Most approaches define a topological principle of relationship among their entities, underlaid by clear hierarchical order. For example: Howard's 1898 Garden City model was never meant to be built in the round or symmetrically, but the Crystal Palace had to be in the center, and the workshops - on the outskirts. The "web" and "stem" of Team X were recommended for neighborhoods, city centers, universities, etc. (Smithson, *ibid.*). In Table 2, this type of relationships has been ranked "3", just in front of the last and extreme category, which does not define any relationships (ranked "4"). The best example for the latter is Rowe's "Collage City" (1978). Actually, the designer's free combination of ideal urban entities, with Villa Adriana as the ultimate model, is the central principle of this approach. Critical regionalism might equally refrain from definition of universal principles, in favor of particular rules, namely local traditions of urban compositions. For example: New Gournay by Hassan Fathi (1973).

4. DEGREES OF ORDER AS COMMAND

U.D. approaches, regardless of their ordering principles (as arrangement), may acquire wide acceptance by the professional community, and used in practice, as instructions for application. Conversely, they may also be discarded as unimportant, relegated to the sidelines, forgotten, and eventually rediscovered, or not. For example: the return of Rob Krier to the writings of Camillo Sitte. (Krier, 1979, ch.1). In any case, the impact of an U.D. approach is *context* related. Contextual aspects are the economic situation,

historical background, social needs, political ideologies, technological and material possibilities etc. of the potential users (in the broadest sense) of the approach. One major manifestation of context which expresses many of the above aspects, is the *source of legitimation of the approach*. It answers the basic question: why should I (we) accept this approach? Obviously, if the legitimation issue is not resolved convincingly - the approach will not be adopted. Additionally, the more powerful the source of legitimation - the less explicit its questioning.

In contradiction to the discussion of *order as arrangement*, which was by theoretical classification, *order as command* (focussing on legitimation) is characterized according to empirical typification. The categories of sources of legitimation, in a descending order, are presented in Table 3 (together with the approaches which have been supported by each type of the sources).

The highest level of authority (or power of order as command) is manifested when an approach is legitimized by a prevailing social / political ideology ("1" degree of authority). When Howard, for example, sowed his garden city ideas, they met the fertile soil of general conviction that a solution was acutely needed counter flight from the land and the overpopulation of towns. Howard clearly addressed "reality", hence his approach had an "obvious" source of legitimation.

Degree of authority	Type of source of legitimation	Supported approach
- "1" -	Prevalent political / social ideology	Howard, C.I.A.M.
- "2" -	Scientific research	Alexander, Hillier Lynch
- "3" -	Tradition	Cullen, Venturi,
- "4" -	Convention of discipline	New Urbanism, Critical Regionalism Krier, Team X
- "5" -	Philosophy	Norberg-Schulz
- "6" -	Personal preference / view	Rossi, O.M.A. Rowe (collage)

Table 3: Classification of sources of legitimation of urban design approaches

The second powerful source of legitimation is scientific research ("2" degree of authority). In Western culture, scientific justification entails natural low and objective

knowledge. Everyone must agree about the truth value of the approach, and accept (?) the implied conclusions. For example: ignoring the five variables of urban perception discovered by Lynch (1960) is unthinkable. Their actual application, however, must change according to the changing context.

The third source of legitimation is a living tradition besides the professional community (“3” degree of authority). This is a shared outlook of a wider group, including the professionals and the users. Cullen for example, drew on the English tradition of the Picturesque, while Venturi explicitly addressed the American Strip.

Degree “4” of authority is attributed to a convention or tradition within the discipline of U.D. This is a shared outlook of a specific community, and is highly dependent on fashion, public relations, etc. Krier, for example, promoted (European) Historicism. This trend was enthusiastically embraced by theoreticians of the eighties, e.g., C. Jencks (1977, pp. 81-90), but had little influence on the built world. A controversial example may be Critical Regionalism, which is sometimes criticized as “architecture for the affluent”. (Taylor, 1989 pp.19-35).

The second least power of authority, “5”, is attributed to approaches which present philosophical texts as their source of legitimation. Norberg-Schulz (1980), for instance, establishes his entire approach on the Phenomenology of Heidegger. This has a rather restricted authority, first and foremost because an acquaintance with Heidegger’s writing is a precondition to its acceptance.

Finally, the least powerful source of legitimation, “6”, is personal preference or individual outlook. Rowe, for example, in his “Collage City”, draws on a variety of sources to unfold his personal idea of free composition of historical (and future) precedents. One may share his view, or not. Similarly, O.M.A. “discover” Manhattanism as the prematurely neglected urbanism for the culture of congestion. One may share the preference of the artificial over the natural, or not.

5. U. D. APPROACHES - ORDERING CAPACITIES

The ORDERing capacity of an U.D. approach is a combination of its ordering principles referring to arrangement (U.D. entities and their mutual relationships), and its ordering power as determined by the source of legitimation of each approach. The first

counterpart is a meta-content expression of the specific components of the approach, while the second one represents its context. Therefore, the ORDERING capacity of an approach may change according to circumstances (context). The following is a classification representing the current state of the art.

Table 4 simply summarizes the indices annotated to each approach. The results have a ratio significance. The indices serve only as a means to classify the approaches within several *groups of ordinal significance*. The grouping itself is tentative, but the general tendency seems to have some historical support.

The summary in Table 4 clearly produced two groups: group I and all the rest. Then, within groups II-VI, the last one is somewhat outstanding, while the others occupy a continuum of sum total indices.

Here one may ask: what is the meaning or reference of this grouping?

This paper suggests that the *correlative of the ordering capacity* of an approach is its *actual implementation in practice*, both three dimensional building and education. This is reasonably so, because actual implementation of a distinct approach

(a) is recognizable only when some form generating principles are offered (order as arrangement), and

(b) implementation is expectable only when there is a rather powerful source of legitimation (order as command).

Despite possible differences of interpretation, there seems to be no doubt concerning the ordering capacities of the Athens Charter, the Garden City idea and the Pattern Language (group I). They are incomparable to capacities of all other approaches. The Garden City model has been adapted to hundreds of new towns and suburbs all over the world (Stephen, 1991), the C.I.A.M. principles are the basis of post W.W.II Town Planning, and Alexander is probably the most comprehensive attempt to provide an empirical account of integrated urbanism.

approach	arrangement	command	sum total	group
Alexander	1+1	2	4	I
Howard	1+2.5	1	4.5	
C.I.A.M.	3+2	1	6	

Hillier	3+3	2	8	II
New Urbanism	1+3	4	8	
Cullen	2+3	3	8	

Venturi	3+3	3	9	III
Norberg-Schulz	1+3	5	9	
Critical Reg.	1+4	4	9	
Lynch	3+4	2	9	

Krier	3+3	4	10	IV
Team X	3+3	4	10	

Rossi	1+4	6	11	V
O.M.A.	2+3	6	11	

Rowe	3+4	6	13	VI

Table 4: The ORDERing capacity of urban design approaches

Group II includes approaches which are rarely as a group. Still, they have their established influence on practice, though for different reasons. Going on to group III, it is rather difficult to decide whether Venturi has less or more ordering capacity than Hillier (group II). Thus approaches of group III, might eventually change positions with those of group II. The same goes for groups IV and V, or III and IV. However, more extreme changes of location seem improper. The grouping is more like a Wittgenstein arrangement of "family resemblance" than a strict quantitative categorization. For example: the experiment of Aldo Rossi to establish an autonomous theory of U.D., including his particular references by "monument", "locus" etc., had little impact outside the world of academia. Although his position in Table 4 could be exchanged with that of Krier, for instance, it could not be exchanged with the position of Critical Regionalism, which is manifested in numerous urban projects of the Third World (e.g., Curtis, 1988

pp. 144-153, Fathi 1973). The most questionable result of Table 4 is the location of Lynch's approach. His "The Image of the City" is part of most architectural curricula. Retroactively, it is perhaps correct to attribute this approach implicit topological order (marked "3" in Table 2), and clearly classify its ordering capacity in group II. Finally, the "Collage" approach is indeed only one of several offered by Collin Rowe during the high time of U.D., in the eighties.

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