

# Issues of Design and Planning

Marcel Herbst

April 27, 2019



# 1

## THE OREGON EXPERIMENT

**I**N THE FALL of 2017, at a book fair, I had a casual conversation with an architectural student regarding issues of urban design. We found a range of common interests, we started to talk about pattern languages as they might refer to urban development, and I learned then that Christopher Alexander et al. [1975] had worked out a campus plan for the University of Oregon (UoO) in Eugene. This was new to me.

I knew of Alexander [1964], of course, having read his “Notes on the Synthesis of Form”. I knew that Horst Rittel<sup>1</sup> and Alexander had been teaching at the UC Berkeley College of Environmental Design. When visiting Rittel (1965/66) on Telegraph Hill in San Francisco, it was quite normal that the conversation drifted towards Christopher Alexander, because the two seem naturally allied, but my impression then was that both were primarily antagonists, unfortunately: I do not know to what extent nor why.

At the time, I was an exchange student enrolled at the UoO, assisting in the architectural department and studying economics

---

<sup>1</sup>My theses advisor at the *Hochschule für Gestaltung* in Ulm.

and sociology. At the end of this academic year, I had found a new place at an East Coast university to continue my graduate studies. But I still had to bridge three months during which I had no income. I applied for various temporary jobs — working in a canning factory or as a walker-on in a Western movie, selling encyclopaedia door-to-door, assisting loggers — , but I was not successful. Finally, the chairman of the Architectural Department, Donlyn Lyndon, took pity on me, arranged for a job at the campus planning office, and offered me to look for his house during the summer session while he and Alice Wingwall were travelling.

During this summer of 1966, I was charged to draft a campus plan. I do not recall that much about this assignment, the preparatory work or the frames of reference, other than the rejection of my design; but I still have some sketches. Although I subsequently studied, taught and practiced regional planning and economics, I lost track of Christopher Alexander and his particular approach: I probably thought that his studies lacked the required rigor and could not form the base for possible simulations of development patterns that were to become feasible with the development of information technologies. After I had learned recently that Alexander and his associates had been working on the same topic as I, however, I ordered “The Oregon Experiment” to delve into the story of my past and to see what that crew had done.

Campus — or higher education — planning had been a focus of my professional life. This had not been on my conscious agenda. When I started my work after graduating from architecture school, the office I was now working for — Schwarz & Gutmann — was charged (around 1963) to formulate the framework for a design competition with the aim to build student and faculty housing to complement the new campus of Höggerberg of the Swiss Federal Institute of Technology (ETH) in Zürich, and I was working on that assignment (among others; the first housing units were then built 2016 — see Schwarz and Gutmann [1965]). In

the summer of 1966, as I have said, I worked in the campus planning office of the UoO. And finally, in 1988, after years of teaching and practical work in the fields of economic development and planning (much of it in developing countries), I started to head the planning office of ETH Zürich (up to the year 2000): my focus in that position (and subsequently) was not physical planning as such but institutional — or higher education — research [Herbst et al., eds, 1997; Herbst et al., 2002; Herbst, 2007; Herbst, ed, 2014].



Reading “The Oregon Experiment”, my first impression was a sense of astonishment about the way the argument was formed and conclusions were drawn. I had already been exposed to tracts with few footnotes or references (such as Kenneth E. Boulding’s “The Image”), and indeed “The Oregon Experiment” contained some (apart from photographs that relate to built structures), but Boulding [1961] “wrote [...] a wonderfully crafted little treatise for the educated layperson” [Herbst, 2018, 102] while “The Oregon Experiment” is far less polished; I shall elaborate on that below.

A common ruse employed by political scientists, religious preachers, philosophers — and others — is to use terms in very idiosyncratic ways, not in the form the terms are used normally. This has the advantage to form a school of thought by forcing people, readers or students, to rephrase their own concepts. Alexander<sup>2</sup> gives the word ‘pattern’ such a new meaning. Pattern, in the normal context of architecture or urban design, refers to an arrangement of buildings, courtyards and roads, of lines or surfaces; in the context of textile design, the word might be replaced by the term ‘motif’; in the framework of social sciences, ‘pattern’ might

---

<sup>2</sup>When I refer to Alexander in der following, I mean the entire team, i.e. Alexander et al.; and when I refer to sources of knowledge, to literature, I shall try to cite those belonging to the period during which “The Oregon Experiment” took place.

refer to kinship relationships. In all these cases the patterns can be drawn up, either as a common map, or as a textile design, or as a graph of relationships depicting bonds among family members or friends. But Alexander uses ‘pattern’ loosely to refer to all sorts of things: the patterns of the footprints of buildings or the distribution of facilities within a campus or city (as expected), but he extends the meaning of the term to include any aim of a plan or a vision of the future (which cannot be drawn up, or only indirectly). Patterns, in Alexander’s notion, refer to “any general planning principle” [101] (whatever that might be): to limiting the number of students enrolled, to the aim to have student cafes on campus, or to plan childcare facilities. It is unclear why Alexander uses this ruse, because he could easily have phrased his concepts using more common words. More damaging, I think, is that this inappropriate use of words hinders the proper operationalization of the planning process Alexander might have had in mind, making it very difficult to hand over experiences from team to team and from generation to generation.

If ‘pattern’ is used in a strange way, ‘pattern language’, another concept in Alexander’s vocabulary, is bound to generate confusion. On the surface, ‘pattern language’ is a language with which to generate — to ‘speak’, to ‘write’ — patterns. A language is composed of a grammar, a system of rules that regulate the use of words. Analogously, a pattern language would control or shape the patterns at hand. METAFONT, a computer language with which to generate fonts, might serve as an example of such a language (see Chapter ??). Other examples of pattern languages include music composers or various (generative) simulation programs (mimicking human dialog [Bellman and Smith, 1975], or rainfall and runoff [Hufschmidt and Fiering, 1966], or urban sprawl [Berry and Horton, eds, 1970], et cetera). In Alexander’s notion, however, a pattern language refers to the assembly of patterns used in a given context: the patterns “coalesce” in a language

[102]; there is no controlling, mimicking, simulating, generating aspect to the concept of 'language'.

In criticizing Alexander's use of terms, one ought to beware of an ahistorical argument. Around 1974 when Alexander et al. had worked on "The Oregon Experiment", information technologies were not as developed as they are today, and the theories thereof were in their infancies. Still, notions of normative behavior existed [Lindblom, 1959; Braybrooke and Lindblom, 1967], even by people Alexander had direct access to [Churchman, 1961, 1971; Rittel and Webber, 1973]; and participatory — advocacy — planning, another focus of Alexander subsumed under 'pattern', was widely discussed [Davidoff, 1965; Kravitz, 1970; Alinsky, 1971/1989]. Not only the critics of Alexander need to beware of falling into the trap of an ahistorical argument, however; Alexander himself and, in particular, his followers, may falsely trace modern developments to Alexander's early concepts<sup>3</sup>. This applies also to my own — naive — reception of 'pattern language' in that, before I had read "The Oregon Experiment", I interpreted the concept (in my conversation with the architectural student mentioned above) assertively — and faulty —, namely in the way I would have filled the concept with meaning.

In what follows, and for the reasons mentioned, I rely on "The Oregon Experiment" exclusively, not taking into account earlier nor later works of Alexander. No publication can really be self-contained, but a publication, together with its references, ought to transport a coherent picture of its content. The reader should not be forced to read the entire oeuvre of a scholar, become familiar with all the peculiarities of an author's language or concepts, in order to make his or her judgment. If this is the required entry price to understand an author, the author will collect followers, admirers, not critical readers. After I have tried, unsuccessfully, to read Heidegger a couple of times, I am satisfied now with the

---

<sup>3</sup>See in this respect: <http://www.patternlanguage.com/>.

answer of Carnap [1931].



6 |

“The Oregon Experiment” presents a planning process that relies on six principles: organic order, participation, piecemeal growth, patterns, diagnosis, and coordination. These principals are somehow interwoven, are difficult to communicate (or to absorb), cannot easily be verified and, because of their interlacing, are difficult to discuss one-by-one. Furthermore, principals used as guidance need to be described in such a way so that one understands whether, in any given case, the principle is met (or not): think of the MITZWORT. If principles depend on scale, for instance, or on the particular circumstances, et cetera, these notions of scale or circumstances must become part of the principle.

Let us look at “organic order”, and let us combine this with the third principle, “piecemeal growth”. In organismic biology that Alexander evokes, the “order” refers to information, or instructions, that are contained — for instance — in cells in order to regulate their proper functioning and (non-cancerous) growth. In other words, at the ‘local’ level of the organism, there is somehow a concept of its ‘global’ functioning. If an anthill gets damaged by outside force, ants with a seemingly restricted — local — view will repair this damage (and in the absence, we must presume, of a global notion).

Alexander uses this picture to muse about architecture or urban design. Indeed, when looking at medieval towns, we see these places as ‘organically’ grown, in a piecemeal fashion. The individual houses had different owners, were built or expanded by a range of craftsmen over centuries, and seem to follow locally a ‘pattern’ that was conducive of a ‘global’ order, a decent town design. The argument can be extended to the micro-scale as well, to the framing of doors and windows, to the construction of roofs: local — dispersed, ‘uncoordinated’ — actions generate an overall unity; and it can be extended in time pretty much to the early 20th

century, i.e., before the automobile took over. Our notion of urbanization has this settlement in mind, the grand European cities (Prague, Budapest, Vienna, Paris, Venice, Rome, London, Berlin, Amsterdam or Barcelona, for instance), or the smaller towns (like Cambridge, Göttingen, Delft, Soloturn or Charleston). In all these cases we laud a dignity of towns and cities we miss today; and, presumably, when applauding the past, we do not look at pictures of Jacob Riis, Heinrich Zille or Lewis Hine. Alexander lifts these principles on a general level:

“Planning and construction will be guided by a process which allows the whole to emerge gradually from local acts” [5].

and:

“The construction undertaken in each [...] period will be weighed overwhelmingly towards small [piecemeal] projects”.

But in fact, most city development follows these principles, up to this day. With few exceptions of imperial powers that shaped some avenues, arches or centers, with the exception of the planning of grand highway systems (or the exception of modernist developments in the *banlieue* of Paris), this pattern has generic value. There is no need to state it explicitly in that form; and it is unclear whether the principles will lead to a decent outcome: they may be seen as a restatement of Adam Smith’s dictum of the “invisible hand”. In fact, we may presume that, in many cases, just the opposite is true.

Alfred E. Kahn [1966] focused on phenomena of decentralized — piecemeal — decisions he called “the tyranny of small decisions”. The tyranny emerges in the face of externalities which do not enter into the decision calculus. Modern societies are driven by such tyrannies: a future emerges — explodes — which nobody has foreseen, for which no provisions have been made: facebook, twitter, fake news, pollution of air and oceans, urban sprawl, the

dying of historical city centers (urban blight), garbage, fashions, the destruction of virgin forests, climate change, et cetera. If societies rectify something, they do this generally *ex post* — not *ex ante*, in the anticipation of an event; and most societal resources go into the rectification of ill-fated developments rather than into planning, foresight and anticipatory development.

I naively surmised, when I originally referred in my mind to the “pattern language”, that Christopher Alexander had developed the rudiments of a language, or an approach, by which to simulate, to explore patterns, that is, possible futures of urban development. I now realize that Alexander stated (normative) principles of urban planning, “organic order” and “piecemeal growth”, that he did not test and that appear pretty much redundant (or insufficiently specified).



A topic that Alexander addresses under — and as a proponent of — “piecemeal growth”, is the cost of construction: “[...] cost of construction generally increases with size and height of building” [84]: or: “[...] small buildings [...] cost less per square foot, than large ones” [85]. The increasing cost associated with large structures as compared to small ones are due to “[...] the loss of usable interior space, the provisions of elevators, and a 1 per cent increase in cost for the construction of each additional story” [85]; and: “[t]he loss of usable space in high buildings is due to additional corridors, lobbies, elevators and space given over to mechanical equipment”. I do not contest this (although knowledgeable people in these subject matters might).

What I find strange, however, is that Alexander leaves out the costs associated with urban infrastructure: loss of fertile land; the costs associated with access roads, highways, and the provisions for various utilities; immaterial costs (i.e. time, pollution) associated with commuting; et cetera. If such factors may not play a

grand role in the case of the campus planning of “The Oregon Experiment”, they should at least have been listed in a case that purports to serve a generic — exemplary — role. Costs of low density developments can be excessive. But irrespective of that, building lots that are covered by small constructions may not be available later on for larger structures: the smaller buildings may have a historical value, are charming, and cannot easily be erased to make space for larger buildings that might become necessary in the development of a university campus.

One of the assignments I worked on while being employed at Schwarz & Gutmann (my first job as a professional) was addressing questions of density. We had to come up with a development plan for a village that was to be engulfed by urban sprawl of the city of Zürich. The details are not that important; but the assignment gave us the opportunity to think about the dynamics of urban development. In fact, one of the collaborators, Lucius Burckhardt, a sociologist and former colleague of Horst Rittel in Ulm, had been involved with others to propose possible avenues for urban development in Switzerland [Kutter and Burckhardt, 1953; Burckhardt et al., 1955, 1956]. In the process of our observations we realized that growth implies density: as urban agglomerations grow, their density ought to increase, and we presented these findings (in a bland paper) in Gelsenkirchen [Burckhardt and Herbst, 1963; Boedinghaus, ed, 1995]. Analogously, as a college campus grows, its density is likely to increase over time (or, alternatively, growth is being contained).



Christopher Alexander et al. make a big issue about ‘participation’:

“All decisions about what to build, and how to build it, [should] be in the hands of the users” [58];

and,

“[t]here [should] be a users design team for every proposed building project”;

and,

“[...] the users of a building know more about their needs than anyone else [...]” [42].

The authors of “The Oregon Experiment” go even that far as to attribute transitivity to this claim:

“[...] on the housing market, personal and individual homes are always worth more than mass-produced houses. When you buy such a house, it fits you better, *not* because you are the person who created it, but simply because a *particular person* created it. This simple fact itself is enough to guarantee that the places in the house are more real, better adapted [to the new owner], and more closely in tune with the actuality of living, than any house created impersonally for the mass market, by a designer” [48f].

Now, that is really far-fetched. Perhaps, Alexander had the Sea Ranch (of Charles Moore, Gerald Allen and Donlyn Lyndon) in mind when referring to a “personal or individual home”, not the vastness of ugly constructions of family homes that plaster the various suburbs. Furthermore, “personal or individual homes” are far more likely to be mass-produced (in the U.S.) than multi-dwelling buildings, and they may not be more “worth” (but simply more expensive — an argument in favor of multi-dwelling structures).

I have referred to, above, to the movement of advocacy planning (in the mid 1960s), a current which sprung up primarily in the context of large infrastructure-projects (such as urban highways and ring roads). Participatory — or advocacy — planning was adopted in other contexts later on as well (and rightly so): e.g. energy plants, public transportation, airports. Even housing projects profited. But to claim that “the users of a building know

more about their needs than anyone else” is much like stating that a patient knows more about the disease than her M.D. In fact, architects have to be trained to take into considerations the specific needs of disabled or elderly people, for instance, and untrained user groups notoriously forget these or other special ‘customers’. Even Alexander may have forgotten the disabled when he opted for buildings without elevators.



One subject missing from Alexander — and from the curricula of most architecture schools — is the patina. In olden days, people were using materials that aged well: stone, wood, ceramics; glass was practically indestructible (if it wasn’t broken). People were living in an era where the genuine was cherished, the leather goods, the fine woven fabrics, the well-crafted furniture. Patina is not a topic of modern architecture. New buildings are photographed and their pictures published in respective journals just weeks after their completion; the mold that develops later on the facades due to the wrong choice of materials, do to a cheap chemical plaster, is not documented, and these findings do not find their way into the fashionable magazines or the visual monographs of architects. When we stroll through the streets of the towns we cherish, we normally pay attention to the surface of buildings, to their facades, to vegetation, to the signs and constructive details; and, as Jane Jacobs [1961] had ably documented, we pay attention to the social fabric of the neighborhoods, the store fronts, the pubs and restaurants.



*Et cetera, et cetera.*



# BIBLIOGRAPHY

**Alexander, Christopher**, *Notes on the Synthesis of Form*, Harvard University Press, 1964.

\_\_\_, **Murray Silverstein, Shlomo Angel, Sara Ishikawa, and Denny Abrams**, *The Oregon Experiment*, Oxford University Press, 1975.

**Alinsky, Saul D.**, *Rules for Radicals: A Primer for Realistic Radicals*, Vintage Books, 1971/1989.

**Bellman, Richard and Charlene Paule Smith**, *Simulation in Human Systems: Decision-Making in Psychotherapy*, John Wiley & Sons, 1975.

**Berry, Brian J.L. and Frank E. Horton**, eds, *Geographic Perspectives on Urban Systems*, Prentice Hall, Englewood Cliffs, N.J., 1970.

**Boeddinghaus, Gerhard**, ed., *Gesellschaft durch Dichte: Kritische Initiativen zu einem neuen Leitbild für Planung und Städtebau 1963/1964*, Vol. 107 of *Bauwelt Fundamente*, Vieweg & Sohn, 1995.

**Boulding, Kenneth E.**, *The Image: Knowledge in Life and Society*, The University of Michigan Press, 1961.

**Braybrooke, David and Charles E. Lindblom**, *A Strategy of Decision: Policy Evolution as a Social Process*, The Free Press, 1967.

**Burckhardt, Lucius and Marcel Herbst**, “Wachstum, Dichte und Flexibilität.” In Boeddinghaus, ed [1995] pp. 86–103.

\_\_\_, **Max Frisch**, and **Markus Kutter**, *Achtung: Die Schweiz: Ein Gespräch über unsere Lage und ein Vorschlag zur Tat*, Vol. 2 of *Basler politische Schriften*, Felix Handschin, 1955.

\_\_\_, \_\_\_, and \_\_\_, *Die neue Stadt: Beiträge zur Diskussion*, Vol. 3 of *Basler politische Schriften*, Felix Handschin, 1956.

**Carnap, Rudolf**, “Die Überwindung der Metaphysik durch logische Analyse,” *Erkenntnis*, 1931, 2, 219–241.

**Churchman, C. West**, *Prediction and Optimal Decision: Philosophical Issues of a Science of Values*, Prentice-Hall, 1961.

\_\_\_, *The Design of Inquiring Systems: Basic Concepts of Systems and Organizations*, Basic Books, 1971.

**Davidoff, Paul**, “Advocacy and Pluralism in Planning,” *Journal of the American Institute of Planners*, 1965, 31 (4), 331–338.

**Herbst, Marcel**, *Financing Public Universities: The Case of Performance Funding*, Springer Science + Business Media, 2007.

\_\_\_, *Reflections on Society and Academia: Cultures Adrift*, Cambridge Scholars Publishing, 2018.

\_\_\_, ed., *The Institution of Science & the Science of Institutions: The Legacy of Joseph Ben-David*, Vol. 302 of *Boston Studies in the Philosophy and History of Science*, Springer Science + Business Media, 2014.

\_\_\_, Günther Latzel, and Leonard Lutz, eds, *Wandel im tertiären Bildungssektor: Zur Position der Schweiz im internationalen Vergleich*, Verlag der Fachvereine (vdf), 1997.

\_\_\_, Urs Hugentobler, and Lydia Snover, *MIT and ETH Zürich: Structures and Cultures Juxtaposed*, Centre d'études de la science et de la technologie, CEST 2002/9, [www.swir.ch](http://www.swir.ch), October 2002.

Hufschmidt, Maynard M. and Myron B. Fiering, *Simulation Techniques for Design of Water-Resource Systems*, Harvard University Press, 1966.

Jacobs, Jane, *The Death and Life of Great American Cities*, Random House, 1961.

Kahn, Alfred E., "The Tyranny of Small Decisions," *Kyklos*, 1966, 20, 23ff.

Kravitz, Alan S., "Mandarinism: Planning as Handmaiden to Conservative Politics," in Thad L. Beyle and George T. Lathrop, eds., *Planning and Politics: Uneasy Partnership*, Odyssey Press, 1970, pp. 240-67.

Kutter, Markus and Lucius Burckhardt, *Wir selber bauen unsre Stadt*, Vol. 1 of *Basler politische Schriften*, Felix Handschin, 1953.

Lindblom, Charles E., "The Science of Muddling Through," *Public Administration Review*, 1959, 19, 79-88.

Rittel, Horst W.J. and Melvin M. Webber, "Dilemmas in a General Theory of Planning," *Policy Sciences*, 1973, 4 (2), 155-169.

Schwarz, Felix and Rolf Gutmann, "Studentenwohnungen auf dem Höggerberg: Gesamtplan und Vorprojekt," April 1965.