

A Ten Point Guide to Urban Field Theory

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one

Ultimately urban field theory derives from Einstein's revolution in physics, documented in his papers devoted to the special (1905) and general (1916) theories of relativity. Einstein freed space and time from their metaphysical and absolute character. In his equations, which deal with transformations between stationary and moving systems, he reduced time to a dependent (variable) coordinate. He made the following theoretical innovations, which are interesting and fruitful for landscape architecture:

1. Space and time are no longer absolute entities but a continuum - 'space-time,' - a field or set of fields with their own frames of reference and no external or material substratum.
2. Reality is a four-dimensional manifold, not a 3-D system evolving according to a separate and external one-dimensional time. Each 'inertial system' now expresses its own particular time, determined as a mutual relation of events to the frame in which they are registered.
3. Time flows at different rates depending on when and where it is measured. It is relative and contingent.
4. Space-time becomes understood as a field which cannot be reduced to component dimensions or conditions.

The major break here for landscape architecture is the emancipation by Einstein of the field concept from any association with a substratum as a bearer of forces and events. Forces and events are imminent in the field, they are part of it. Field theory made possible the scientific expression of the principles of imminence, dynamism and continuity, research areas of much interest to landscape architectural designers. Einstein's unified formulae not only linked space and time but also showed that energy and matter were one, or at least that energy could be created from matter and vice versa. This was a new concept: matter-energy (refer to Ten Point Guide to Open Systems Theory).

two

The philosopher Henri Bergson shared with the science of his day a sense of the undividedness of the object-field. The world is at once an aggregate of separate fragments *and* a materially indivisible whole. The substance of the world is not resolvable into pure or independent material forms. Rather, these latter shift and fluctuate in and out of formal arrangements. Bergson re-introduced the importance of the notion of Becoming, an ancient philosophical conception of the world which had fallen out of favor after Newton published his *Principia Mathematica* (1687). In *Creative Evolution* (1911) Bergson repudiates the mechanistic view of time. Understanding Becoming, he argues, requires 'living in' becoming, and therefore in time. (The mechanistic philosophy only holds 'outside time': Bergson overturns this conception). Experience tells us that we are immersed in becoming, flux. We find that movement is not constituted of successive immobile states, as the Newtonian science would have it, but that 'the body is changing form at every moment; or rather, there is no form, since form is immobile and the reality is movement. What is real is the continual *change of form*...'¹ For Bergson, the world-substance is animated. It describes a moving

¹ Henri Bergson 1911 *Creative Evolution* New York: Henry Holt, p 302

field of vectors of differing qualities and intensities and that form is 'a mere cut made by thought in the universal becoming.'²

three

In the latter half of the 20th century the idea of the core-periphery city was replaced by a polycentric and web-like sprawl. Here multiple centers are served by overlapping networks of transportation, electronic communication, production and consumption. The daily urban system is dynamic and temporal. There is a shift of emphasis from form to processes, and a corresponding move to a rhizomatic model of urban growth rather than a hierarchical tree-like growth.

Three significant effects of urbanization:

- a) The rise of new kinds of site. Ambiguous areas, peripheral sites, middle landscapes, neither here nor there.
- b) A remarkable increase in mobility and access as a result of rising populations, the increase in cars and public transport, increases in access to capital and its investment, the abundance of information and media.
- c) Cities are now viewed as dynamic systems rather than formal configurations. The familiar urban typologies of square, park, district are of less use or significance than are the infrastructures, network flows, ambiguous spaces, and other polymorphous conditions that constitute the contemporary metropolis.

This has resulted in a renewed concern with infrastructure and services, and with the provision of multifunctional, flexible surfaces.

four

A number of writers and designers began to explore the potential of understanding urban conditions in terms of a field structure. Stan Allen and James Corner even named their design firm Field Conditions. Allen wrote an influential article called 'From Object to Field' in which he argued that a field condition is any formal or spatial matrix capable of unifying diverse elements while respecting the identity of each.³ Field configurations, he said, are loosely bounded aggregates characterized by porosity and local interconnectivity. The internal regulations of the parts are decisive; overall shape and extent are highly fluid (check: Einstein and Bergson). Field conditions, then, like open systems, are bottom-up phenomena: defined not by overarching geometrical schema but by intricate local connections.

This kind of thinking enabled designers to work with the new urban effects outlined in (3) above. There was a movement from the One to the Many, from individuals to collectives, from objects to fields - to working with, rather than against the site, registering the complexity of the given in order to produce something new. And a corresponding move away from the geometrical and spatial ordering of the site to an organizational approach that was able to consider urban elements in terms of what they do rather than what they look like.

five

One of the outcomes of the new thinking was to redefine the relationship between figure and field. The figure is not understood as a demarcated object but as an effect emerging from the field itself – as moments of intensity, as peaks or valleys within a continuous field – as figure-and-field (Einstein again). What is intended here is a close attention to conditions at the local scale, even while maintaining a relative indifference to the form of the whole.

² Bergson *ibid.*

³ Stan Allen 1997 'From Object to Field' in *AD Architecture After Geometry*, 76/ 5,6.

The idea of field suggests a re-conceiving of the question of surface. However, seeing the field as a horizontal phenomenon has tended to encourage an emphasis on function primarily in the plan dimension, which has limited the productive potential of the notion.

Nevertheless, in *Programming the Urban Surface*, Alex Wall argued that instead of refusing the horizontal characteristic of the field we should examine it more closely.⁴ Cities of the late 20th century (LA, Auckland, Adelaide) are characterized by horizontal extension. What these field combinations seem to promise in this context is a thickening and intensification of experience at specified moments within the extended field of the city. Wall suggests that the new institutions of the city will perhaps occur at moments of intensity, linked to the wider network of the urban field and marked not by demarcating lines but by thickened surfaces. Many writers have enthused that this reconfiguration of urban surface is advanced by digital technology which has the ability to explore the implications of field-to-field relations. In the computer a field of immaterial ciphers (pixels and bits) is substituted for the material traces of the object. They can be coded and re-coded at any time. Again, this has been problematic in landscape architecture as, first, it has encouraged one-dimensional design thinking and, second, it has led to a disconnection from the often impersonal effects of design decisions based on the manipulation of coded signs.

six

Movement in and of fields is often characterized by a special kind of mobile aggregation that acts like a dynamic network. These aggregations have been called flocks, or swarms. Examples in nature are schools of fish and flocks of birds. What is interesting about these entities is the way their behavior is local and specific, and relatively indifferent to the behavior of the overall system. And yet this local behavior contributes to the larger pattern.

Artificial life theorist Craig Reynolds created a computer program to simulate the flocking behavior of birds – which he calls ‘boids.’ (See his website: <http://www.red3d.com/cwr/boids>). The boids were programmed to follow three simple rules of behavior:

- 1) to maintain a distance from other objects in the environment (other boids and obstacles)
- 2) to match velocities with other boids in the environment
- 3) to move towards the perceived center of mass of boids in its neighborhood.

None of the rules said: form a flock. The rules were entirely local, referring only to what an individual boid could do or see within its immediate vicinity. If a flock was going to form it would have to do so bottom-up, as an emergent phenomenon. And yet flocks did form. Every time.

The flock is clearly a field phenomenon, defined by precise and simple local conditions, and relatively indifferent to overall form and extent.

seven

To contextualize or to reject context: this has been the debate (between, say, New Urbanism and the deconstructionists). The potential of a (yet-to-occur) well-developed theory of field conditions is to find a way out of this polarized debate, acknowledging the distinct capabilities of new construction, and at the same time recognizing a valid case for diversity and coherence in the city. The idea is to learn from the complex self-regulating orders already present in the city.

⁴ Alex Wall 1999 *Programming the Urban Surface* in J. Corner *Recovering Landscape*. New York: Princeton University Press.

Attention is shifted to systems of service and supply, a logic of flow and vectors. This implies close attention to existing conditions, carefully defined rules for intensive linkages at the local scale, and a relatively indifferent attitude to the overall configuration. Allan calls this the *logistics* of context. It suggests a network of relations capable of accommodating difference, yet robust enough to incorporate change without destroying its internal coherence. Permeable boundaries, flexible internal relationships, multiple pathways and fluid hierarchies are the formal properties of such systems.

Above all it is necessary to recognize the complex interplay of indeterminacy and order at work in the city.

eight

Recent landscape architecture texts, such as *Landscape Urbanism*, *Recovering Landscape*, *Changes in Scenery* and *The Landscape Urbanism Reader*⁵ are full of nomenclature and terminology related to field conditions, moving form, non-Euclidean geometry, temporality, self-organization, differential change and spatial organizations with active parts. Unlike texts on music, biology or mathematics, however, there are few terms to discuss the role of the human subject as an active participant in the dynamic processes these landscape texts investigate, either transmitting or receiving, or simply engaging on different levels with these processes, and in different ways.

For instance, the systems that are analyzed by Easterling in *Organisation Space: Landscapes, Highways and Houses in America* (1999) are placed 'outside' the subjectivities of those who live and work in them. Within the author's fascinating account of 'network interplay' and 'relationships among multiple distributed sites' there is no corresponding account of how human bodies are aligned and realigned with respect to these networks, no sense of imbrication of body and site. This is not necessarily a failing of Easterling's; her intention is elsewhere. There is a need, however, for a theorization of the specifically human dimension of these multiple systems, for there is a lingering sense in Easterling, and in the books mentioned above, that if we are to frame sites in terms of fields, this could be done without reference to the fact that these fields are lived.

When Easterling does incorporate the role of subjectivity it is in terms of what she calls 'housekeeping,' the 'comprehensive control' of architects, planners and managers over the 'distributed spatial systems' under their care, rather than an active engagement with their possibilities for the imaginative construction of what might be called affective participation. With Easterling, then, as with Mostafavi, Wall, Rahim and many of the others, there is no mention of the necessity for redefining practices of human intervention in organizational protocols and systems in order to spark critical realignments of 'subject' and 'object' in the felt experience of life in the landscapes of the city.

nine

Part of the point of Deleuze and Guattari's field-like formulation of 'the rhizome' is that with this notion they want to get away from analyses based on distinctions between individuals and their environments, whether these environments are physical or sociological.⁶ The arrangements in space and time to which Deleuze and Guattari's work point are not subordinated to taxonomic separations of bodies, places, and times. Instead, the problem of 'making multiples' is the problem of how a life is constituted, for as subjects we are

⁵ Respectively: Mostafavi, M. and C. Nalje, Eds. (2003). *Landscape Urbanism: A Manual for the Machinic Landscape*. London, Architecture Association.; Corner, J. (1999). *Recovering Landscape: Essays in Contemporary Landscape Architecture*. New York, Princeton University Press.; Schroder, T. (2001). *Changes in Scenery: Landscape Architecture in Europe*. Basel, Birkhauser.; Waldheim, C., Ed. (2006). *The Landscape Urbanism Reader*. New York, Princeton Architectural Press.

⁶ Gilles Deleuze and Felix Guattari 1987 *A Thousand Plateaus*. London: University of Minnesota Press.

never fully constituted but always passing in and out of the systems through which we compose our sense of ourselves. Rhizomatic fields are likewise never given to us but constructed through us, linked to us, and though they may always seem to precede us, nevertheless it is just their possibility that we express to one another through design.

“The rhizome is an a-centered, nonhierarchical, non-signifying system without a General and without an organizing memory or central automation, defined solely by a circulation of states.”⁷

It is characterized by six principles - all active simultaneously - described in the introductory chapter of *A Thousand Plateaus*.

Principles

1. *Connectivity* – the capacity to aggregate by making connections at any point on and within itself.
2. *Heterogeneity* – the capacity to connect anything with anything other, the linking of unlike elements
3. *Multiplicity* – consisting of multiple singularities synthesized into a “whole” by relations of exteriority
4. *Asignifying rupture* – not becoming any less of a rhizome when being severely ruptured, the ability to allow a system to function and even flourish despite local “breakdowns”, thanks to deterritorializing and reterritorializing processes
5. *Cartography* – described by the method of mapping for orientation from any point of entry within a “whole”, rather than by the method of tracing that re-presents an *a priori* path, base structure or genetic axis
6. *Decalcomania* – forming through continuous negotiation with its context, constantly adapting by experimentation, thus performing a non-symmetrical active resistance against rigid organization and restriction.

ten

The figure of the rhizome extends and deepens the notion of the urban field. It gives greater depth and directionality to Wall’s ‘thickened surfaces’, and describes an active, energetic organization of forces rather than an inert and passive ordering of them. It adds life. The characteristics of the contemporary city – ambiguity, indefiniteness, poly- or a-centredness, accelerated mobility – lend themselves to a rhizomatic landscape architecture that exemplifies the principles outlined above. The ongoing reinvention of techniques is a critical aspect of contemporary design, and the ideas of field and rhizome permit a playful invigoration of *modus operandi* that are not dependent on splits between nature and culture or human and non-human, or formal solutions to sociological problems, or even visual and aesthetic codes. Twenty-first century urbanism is characterized by a huge range of scales, a diversity of domains and rapid, unpredictable changes. Cities are messy and fluid, shaken by sudden, massive shifts in texture and form caused by diffuse and transitory interactions. Geographer David Harvey argues that contemporary designers’ and planners’ work should be less about finding new spatial forms and aesthetic appearances than the advancement of ‘socially just, politically emancipating and ecologically sane spatio-temporal processes.’⁸

Humans, then, constitute the field of our endeavor.

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⁷ *ibid.*

⁸ Harvey quoted in James Corner, ‘Landscape Urbanism’ in *Landscape Urbanism: A Manual for the Machinic Landscape*, (Eds) Mohsen Mostafavi and Ciro Nlaje, London: Architectural Association.

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