

09. DISTURBANCE

One

Drawing on nonlinear mathematics and the work of complexity theorists, ecologists have advanced our understanding of how ecosystems develop their adaptive and responsive structures by being open to disturbance. But disturbance can be thought of as much more than a way that ecosystems evolve. Michel Serres devoted an entire book to this subject. In *Le Parasite*, translated in 1982, he uses the figure of the parasite to show how disorder alters ordered systems in the direction of greater complexity, ensuring their continued existence. In another work Serres invokes the first century Roman poet Lucretius (c.99 BCE-55 BCE), who wrote a long poem, *The Nature of Things*, describing the orderly system of the world as a laminar flow of atoms raining in the void. The rain of atoms is disrupted by the introduction of the *clinamen*, of chaos or declination: the swerve by means of which nature is introduced into the universe, and by which being becomes becoming.

Two

Lucretius first describes the homeostatic interpretation of the universe that the *clinamen* disrupts. It is a world where

... no visible object utterly passes away, since nature makes up again one thing from another, and does not permit anything to be born unless aided by another's death.

(Rouse 1928: lines 265-6)

Having described the "order of fate" as a consistent rain of atoms, Lucretius introduces the *clinamen*:

As the atoms are falling straight down through the void owing to their weight, at undetermined times and places they swerve a little with just the smallest change of direction.

(ibid: I 216)

Lucretius then asserts the cosmological rationale for the swerve:

If it were not so, all would go on falling like raindrops through the infinite void, there would be no collisions and no blows, and nature would have created nothing.

(ibid: I 221)

This gives us free will:

...but what keeps the mind itself from having necessity within it in all actions, and from being as it were mastered and forced to endure and to suffer, is the minute

swerving of the first-beginnings, at no fixed place and at no fixed time.

(ibid: I 284)

Again if every motion is the outcome of the last in an endless chain, and the atoms do not by swerving initiate a motion to break the law of destiny, and prevent an infinite causal sequence, how can living things have free will?

(ibid: I 251)

Lucretius makes it clear that the swerve is diagonal:

Wherefore again and again I say the bodies must incline a little; and not more than the least possible or we shall seem to assume oblique movement, and thus be refuted by the facts.

(ibid I 244-247)

Three

The clinamen describes a nature that can renew itself precisely because it is rich in disorder and surprise. A powerful surge occurs in the nature of things, and now vitality, movement and systemic transformation are a dance of order and chaos. Unaccounted for in Newtonian physics, the world of the clinamen is where trajectories are unstable, the irreversible unfolds – it is the open world in which, through fluctuations and bifurcations, things are born, grow and die. The world of landscape architecture we might say, where, as Lucretius puts it,

...stars and meteors fall to earth

And the sun also from the height of heaven

Throws its heat out and sows the field with light.

(Melville 1999 Bk II, lines 210-213)

Lucretius was an Epicurean, and his poem is a narrative re-telling of the philosophy of his master Epicurus, who founded a school of philosophy in Athens teaching from a garden until his death in 270 BCE. Lucretius uses his beautiful and compelling poem to explain the philosophical system that Epicurus had developed and to spread it around the known world. Serres brought Lucretius to the attention of modern thinkers, linking his work specifically with the rise of complexity theory and the development of emergence

Four

The clinamen, reformulated by Serres as the parasite, is to be found in all landscape systems, rural and urban. Typically, it first presents itself in a negative guise, viewed perhaps as a malfunction, an error, or noise within a given system. For example, the presence of artifice within the pictorial system of a natural landscape, or a weed in a cultivated garden. Its appearance elicits a strategy of exclusion. Epistemologically, the system appears as primary, and the parasite as an unhappy addition that it would be best to expel. Such an approach, however, misses the fact that the parasite is an integral part of the system. By experiencing a perturbation and subsequently integrating it, the system passes from a less to a more complex condition. Thus the parasite ultimately constitutes the condition of possibility of the natural system. Serres' formulation of the parasite offers a way of theorizing the transaction between nature and city without privileging the latter as fallen, pictorial or architectonic, and without treating the former as a moral force. Both Lucretius' clinamen and Serres' parasite advise us to consider nature, not in terms of its laws and regularities, but rather in terms of perturbations and turbulences, in order to bring out its multiple forms, uneven structures and fluctuating organizations. As Prigogine once said, we use to think of nature as ordered and regular but now we see instabilities and fluctuations everywhere.

Five

Serres emphasises the occurrence of unexpected novelty, the calling card of emergence. "The parasite," he asserts, "invents something new ...It expresses a logic that was considered irrational until now, it expresses a new epistemology, another theory of equilibrium" (Serres quoted in Harari and Bell 1983: xxvii). Through the operations of the parasite, then, new things are made. This making is physical, real, but always different, new. The clinamen directs us back to the material world and its composition, putting relations between things at the heart of doing, acting and becoming. It shows how landscape systems can be driven to reveal new orders of agency. Serres' work enables us to see the city as a system of complex spaces linked by passages from realm to realm, from one local singularity to another. It makes possible a regionalism – a construction of place – that is not built on the notion of identity but on difference, for the "regional epistemologies" that the travelling subject navigates, while specific and local, are themselves travelling. Local processes, formations and operations undergo "regional evolutions, partial accelerations, temporary regressions, alterances, equilibriums, finite transformations" (Serres quoted in *ibid*). The continuing transformation of regions is itself plural. Serres attributes these transformations to interference. He argues that the declinations opened up by interference make new passages through systems, following a language of paths, routes, movements, and planes. This is the language of landscape architecture. Does not landscape design open up paths, cut routes, enable transitions, develop planes of interaction across which beings engage each other in intensive, novel becomings. Is this not achieved by means of a magisterial interference in the order of things?

Six

Extending the idea of disturbance to the modern city, urban theorist Henri Lefebvre argues that the complexification of space and the objects that occupy space cannot occur without a collateral complexification of time and the activities that occur over time (Lefebvre 2003: 167). "This space," says Lefebvre of the urban realm in general, "is occupied by interrelated networks," and is characterized by a tendency towards homogeneity (of logics, intentions,

codes, values and systems) that is simultaneously disturbed by differences; “subsystems, partial codes, messages and signifiers that do not become part of the unitary procedure that the space stipulates, prescribes and inscribes in various ways” (Lefebvre: 167-8). It is a space whose relationships, according to Lefebvre, are “defined by interference.” For Lefebvre, the city is entirely relational - and parasitism is, as Serres says, “the heart of relation,” joining order and disorder in a never-ending dance. The parasite, the noise in the system, through its presence and absence, produces the system (Serres 1982: 52). The contemporary city, then, is a space of transformation. Its metabolic processes move at varying rates, and the parasite is the cause of this fluctuation, it is the catalyst of metamorphosis. The vast “interrelated network” of the city incorporates the processes of the social, economic, cultural, physical, mineral, organic. It includes all forms of matter, image, movement, light.

Seven

Sometimes urban designers and administrators try to expel the parasite, and it is through just this attempt at exclusion that an infinite number of possibilities appears as the irruption of a disorganization into the system. The modern city is therefore impossible of organization – despite insistent attempts on the part of planners, designers and political authorities to do just this. Serres and Lefebvre demonstrate how resonant an “ecological urbanism” could be if it could adopt the transgressive concept of disturbance as the condition of possibility of the city, as its space of transformation. If we could design passages, routes and pathways to permit the turbulent stream of natural process to enter the city and disorder and disrupt its operations of control, and the “logics of surplus value” that Lefebvre says deny natural process (Lefebvre 2003: 35).

Eight

For Lefebvre, the urban square, the plaza of modernism, is the zero degree of multiplicity, where everything is part of an order that hunts down disorder with overwhelming repressive force. According to geographer Edward Relph, who documents the decline of mainstreet as an organizing spatial program, and the subsequent rise of the plaza in the 1930s, the plaza, or urban square, which is situated at the heart of the modernist city, is the inverse of nature (Relph 1987: 85). Neutralized by democratization, reduced to Lefebvre “blind field” where the urban simply becomes the industrial and a re-presentation of fictive nature dominates, modernist urban public open space rejects particularity and ravages anything associated with natural systems.

Nine

If the new polycentric and contradictory urban field has become truly multiple, we can only *intuit* its movement and its demands on human life. The organizational figure most suited to the contemporary city is not the plaza but the dynamic meshwork, a truly differential space-time web whose constituent elements can only be perceived from place to place and moment to moment, never in totality. This urban realm is not mappable, it has no fixed coordinates or causes that can be easily traced. In its movement from modern to postmodern the city created a milieu in which the public realm is uncertain and dynamic, a realm for which transgression, understood as disturbance and interruption, is a way of life. It is a force field of social and

political, aesthetic and cultural, individual and collective intensities that construct spatial orders and code, distribute and organize the flows of human desire throughout these orders. The meshwork symbolizes the decentered, multiple, indeterminate, open-ended and capricious 21st century city. The movement of bodies in space, and of relations between them, a movement that occurs in different time frames in different sets, which jumps spontaneously from level to level at intensities, this is the habitus of the contemporary subject. This subject is in the grip of larger forces, the laws of fate, which are always disturbed by chance, by the clinamen.

Ten

It is the tipping point that provokes transgression, bifurcation, the phase transition, the swerve from order that introduces unexpected consequences. This is the basis of adaptability, of resilience. What does not kill me will make me stronger. Georges Bataille understood transgression as a gift. The notion of the gift emblemizes a transgressive, sometimes violent act, a transgression that is necessary in order to introduce into the reified world of things the illuminations of sacrality. This is why Lefebvre and Serres separate the city from nature. So it can come back as a gift. They are explicit about this. Serres says the city is founded on the exclusion of nature. Thus when the garden has appeared in the city it is as a sign of an absence. Likewise, for nature to appear in the city it must become artifice. Olmsted underlines the artificial character of the park when he justifies Central Park as art. But nature is always already in the city. Natural process is the “infrastructure” of the city. Human beings are natural beings and if, as Lefebvre says, “there is a production of the city ... it is a production of human beings by human beings” (Lefebvre 1996: 101). The city depends on that which it excludes. This dependence takes the form of a continual renegotiation of its relationship with nature. Nature therefore is the parasite of the city. It is the noise in the system. But because the city itself is naturalized, this nature cannot be seen. The city appears denatured even though it is permeated by representations of nature. Therefore it must be revealed. Urban landscape architecture is thus a matter of revelation. Landscape architecture, however, has given away the key to the revelation of nature under the guise of human accommodation. Is this not the same reason that, despite the existence of the parasite being the condition of existence of the city, we try to expel the parasite? Lefebvre describes what happens when we do this. “The city,” he says, “has a hole which is sacred and damned, inhabited by the forces of death and life, times dark with effort and ordeals, the *world*” (Lefebvre: 88).

{C}[i]{C} Hayles advises by way of counter-argument that the introduction of disorder into a system does not *necessarily* imply a movement to greater complexity. See Hayles, N. K. (1990). *Chaos Bound: Orderly Disorder in Contemporary Literature and Science*. New York, Cornell University Press. p.196-216.