

Urban Morphogenesis

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Martina Löw's (2001) *Raumsoziologie* sees urban space as a "relational" space. Her work from the time of her PhD on women who live on their own, and the culture of the self has been on such a construction of space. From the time of her Habilitation (2001), she develops space as a relational order of social goods and living beings, which might include living things. So, early on Löw's sociology was reaching out beyond the human. The notion of urban morphogenesis addressed in the present short essay is of a piece with Löw's work on the logic of the city itself, the "Eigenlogik" of the city (Berking and Löw 2008). Löw understands the city in terms of urban form, not a mere background for social processes, further not a fixed form, and especially not a platonic form, but as a processing of forming.

What can this relational space in the context of such morphogenesis mean? It means surely that urban space is neither absolute space nor empty space as is Kantian/Newtonian space. That is the space of classical physics. In relational space our attitude to the city is, in the first instance, more subjective, more like Kant's Third, aesthetic critique. Yet, the old aesthetics of Kant is not completely grasping it wholly either. I'm not at all objective vis à vis the cities that I've lived in – to Hong Kong, to Chicago, to Berlin, London, Paris. And yet, neither am I subjective as in Kant's aesthetic. A more modern post Kantian, for Italy post-Crocean aesthetic of Luigi Pareyson's "formativita" (2009 [1954]) is more in line with how I experience "the city", these cities. Pareyson's aesthetic, his *Formativita*, has more to do with Wittgenstein's forms of life (Ribault 2022). We see the city from the point of view of our forms of life, from the "how" of our culture. And further with Pareyson, for whom art and design are forms of making, or better-making forms, we see in the city the process of such forming. Thus, the city itself is a process of formativita, of *self*-making, and adding Löw of self-making in its relationality with its outside, with its ecology. This is also a question of urban *meaning*, which is how the city, how urban space in its self-making connects and selects from its ecology, its atmosphere, geosphere, hydrosphere and biosphere. Should we add its techno-sphere? That combination of what Michel Serres (2013) called *biogée*, the amalgam of biosphere and geosphere including lithium, silicon, even hydrogen.

It is closer to the space of relativity, to an Einsteinian space of relativity. A topological bending of time, space, whose topology is also social. Löw draws on Simmel for this. Simmel's "Metropolis" essay (1903) appeared two years before Einstein's special relativity paper, so it could not have influenced his relational space. Yet Simmel (2009 [1900]) surely was also moving beyond container space, beyond universal and empty space, as was clear already in his *Philosophie des Geldes* (Philosophy of Money). Simmel's *Money* was an implicit critique of such empty and universal space, which he read as in the register of instrumental rationality. Simmel famously juxtaposed Goethe versus Kant, that is Goethe's (1810) *Farbenlehre* (Color Theory) versus Newtonian optics. While, as mentioned, Simmel could not have been aware of Einstein's annus mirabilis in the sociologist's relational space; he surely worked not in a universalist or empty space not in a topographical space – in which social events happened. In contrast, Ernst Cassirer's (1921) neo-Kantianism was more fully Einsteinian¹. Einstein's near co-founder of special relativity, Henri Poincaré, was also the founder of topology. And topology, unlike topography, is constitutively relational. So, we speak, of not topographical but of topological equivalents. The coffee cup and the donut are topological equivalents. They are not equivalent in topographical or Newtonian space. Insofar as Einstein and Poincaré are consistent with a topological geometry has more to do with Wittgenstein's forms of life. That is not neo-Kantian but properly post-Kantian. A neo-Kantian view will displace the objectivity of the First Critique with the subjectivity of the Third. Post-Kantian space is instead in this late Wittgenstein forms of life paradigm. This a time-space, a topology forming and deforming that plays itself out in time. A time-topology like Einstein's time-space of relativity, this is closer to the "formativita" of the city.

What do we mean by "forms of life"? "Forms of life" comes from Wittgenstein's *Philosophical Investigations* (2009). This stands in contrast to the early Wittgenstein's *Tractatus Logico Philosophicus*. If the *Tractatus* was in the register of logic, in a sense of Fregean logic, the late Wittgenstein's *Investigations* had more to do with the philosophy of the mind. If the *Tractatus* was idiomatic of analytic philosophy, the *Investigations* had also to do with Continental philosophy, even with phenomenology. Yet Wittgenstein's forms of life were less about the individual mind than about cultural (social) forms themselves. If the *Tractatus* spoke the language, the predicative (propositional) language of "the what", the *Investigations* spoke the performative language of "the how". Thus the "how" of the social, the cultural, the "how" of social processes, which are also a making, a making of again the "how", the formativity of the city.

1 Cassirer is still consistent with Kantian First Critique objectivity of knowledge. As seen in his 1929 debates with Heidegger. It is of course material reality and not knowledge in this that is relativistic in terms of its observer relation and its as it were topological spatio-temporal (de)formations.

Relational space or the relational city is not a detached grid, abstracted from its ecology, from its environment. It is in relation to its ecology, in contiguity with it. Here, urban form or morphogenesis is as important as the contents, the social and material contents that are in the city. Relational space here is what connects urban form with its ecology. For Bruno Latour (2017) – with Lovelock and Margulis's *Gaia* – a city's hydrosphere, atmosphere, pedosphere (geology) and biosphere, including organic matter attributed to us homo sapiens. So urban form is not only about the relations between humans and nonhumans within the city, but between the integument of the city, its urban fabric and its ecology. I mean, what is Hong Kong or Aberdeen without granite? What is Dumfries (Scotland) without sandstone? Hong Kong was carved out of granite and its extension of pedosphere into hydrosphere.

What is the relationality of the city to its exterior? What here is the role, for example, of walls? Of the Greek polis to its walls, which Antigone wailed for her brothers' burial outside the city walls of Thebes. Outside the walls of the city but hugged close was also oikos, where citizens had their wives, children and slaves. Oikos becoming of course economy, yet excluded from the politics, the political of the polis, where none of the four classical virtues was economic. You made money outside the polis. Which, was anything but a space of accumulation. The Chinese word for city is *cheng-shi*. The *cheng* is really wall. The Great Wall is *changcheng*. The *shi* also means market. The Chinese space of the city was, before markets, for grain storage. Grain to feed officers and especially soldiers who with the wall protected the rulers. The *cheng* more important than the *shi*. Very different to the market town in say England. Even now in China the town is different from the villages that surround it. It is the only village to have a proper market. Yet China never had the polis. Never had later Third Estate.

Our idea of the citizen is from this Third Estate. In Werner Sombart's city of guilds, the guild-based Rathaus excluded the Jews. Thus, Sombart's (1911) Jews and capitalism thesis. The medieval city's relationality was also the Jews on the outside, beyond the pale. The city forbade for Aristotle as Marx's *Das Kapital* also saw chrematistics, that is the unlimited accumulation of capital. First through the virtues of the city and later through the guilds and corporations of the rising middle class, the *Bürgerium*. The basis of course of civil society of *bürgerliche Gesellschaft*. It was also *Stadtluft macht frei*. In China and to a lesser extent Russia never the free city, the guild basis of *Bürgerium*. In China it was all for the emperor, for thus state. And it still unhappily is. Never for any of Third, Second or First Estate, just State. In Sombart's city of guilds, the Jews evade and are in this sense also minor players along with the Fuggers, the Medicis and other Christians of the origins of capitalism. Meaning as Marx saw too kind of a universal chrematistics (Vogl 2010). The city and its outside as the Jews alongside women and slaves were excluded from the city. The remnants of the guild structure in the city's universities many not just a Numerus clausus, but total exclusion of Jews from universities in the time of Einstein's father.

Thus, the city's, urban spaces' "formativita" casting out as it later included. Thus, Talcott Parsons's *Full Citizenship for the Negro-American?* (1965) and Jeff Alexander's *The Civil Sphere* (2008) was constituted on the boundary between the city's inside and outside. Think about today's London. In the old London East End there were Irish and Jews but few Black people, indeed almost none in the top tier of English football at the time. The same can be said of course for Germany. Urban language changes. To speak London-English 40 years ago was East End and the language of "mate". Now these Cockney semantics have moved to Essex and today's London speaks the language of "bro and fam", for Black, brown, and white Londoners.

This is also the relational city, relational space: urban form as a forming, a formativita. Stadtluft macht frei if you are in a guild, part of the Rathaus. This is Braudel's *Méditerranée*, again not the city of chrematistics, but also of an urban life that was not just guilds, but was already exploding and breaking through the exclusions of the medieval city. The city became Georg Simmel's city: which is post guild Vienna, Berlin, Paris, in Baudelaire's modernity of the transient, the fleeting, the contingent, which is also Richard Sennett's *Public Man*.

Who were Max Weber's Protestant capitalists? Not "Jakob the Rich" and the Fugger chrematistics, which came from banking monopolies in conjunction with the Counter-Reformation Habsburgs. Modern chrematistics came a few centuries earlier in Venice. Not so much Protestant or Jew, less Pope or emperor but instead doge. Long distance ship trade, journeys of a year or more necessitated double entry bookkeeping and the joint stock company. And situated not so far from the banking centres of Sienna and Florence (Medicis). Jakob Fugger was not a Protestant but in league with the Habsburgs with a wealth of what would today be more than a trillion US-Dollars, more than that of Bernard Arnault or Jeff Bezos.

What are the forms of this relational city, this relational space? Formativita is a morphogenesis, in the sense of D'Arcy Wentworth Thompson. In this formativita surely the empty space or the city-space is not at stake as a mechanism and not even as a Bayesian inflected quantum mechanics. Formativa has to do instead with organism, but – especially in the digital city – more than just organism. Thompson's (2014) magnum opus, again taught in so many of the architectural schools (and an influence on inter alia Corbusier and Van der Rohe) was *Growth and Form*. And at stake in such urban formativita is of course growth. The city as form-in-growth may wreak havoc on the atmosphere. Yet, it may be more like a plant than an animal. There are of course mobilities in cities and between cities. But urban form itself has no mobility. Unlike animals with mobility through their muscle tissue, the city expands like a plant towards light, soil (its geology). Towards hydrosphere and water, toward light and energy.

Plants without not just muscle tissue but also without brain-organ or nervous tissue respond to signals. These signals do not work via the synapses of neurons or the central processing unit of a computer brain. The founder of media theory, of

the mathematical theory of communications of the unrepentant physicalist that was Claude Shannon (1963). Shannon-type communication-signals are physical, electrochemical impulses detected by receptor cells. Not necessarily specialized neuronal cells. Electrochemical signals work through differences or perturbations. What are the signals that urban forms respond to? From their geosphere, their atmosphere, their biosphere and hydrosphere. How does the city as form, as forming, select from these perturbations to decide which of them constitute signals on the boundaries of its ecology to create urban meaning. What is this semantic of urban meaning-making?

The zeros and ones of the digital are not just signals but symbols. Signals becoming symbols through homo sapiens and our elementary forms of religious life. Martina Löw's cultural Raumsoziologie has featured the symbolic dimension of urban space, but also very recently of digital life spaces. Here the relationship of signal to symbol is quite central. We think of computation in terms of a physicality (signal) and indeed Alan Turing himself was a physicalist. Yet the digital, the zeros and ones are a question of not the continuous but the discrete. And the symbolic (from Durkheim on) is always about the discrete, the carving up of social life into the discrete of totems. The discrete of the mathematical, of phonetic languages as Marshall McLuhan's media theory was well aware of. The city, once the region of only the continuous, as increasingly digitized is increasingly also already in the realm of the discrete. All this part and parcel of what Löw calls the "refiguration of space".

Plants communicate through signals. Their receptors respond to signals to move toward water, light and fertile soil. Yet what Castells (1991) called the informational city is becoming more technological. Not only signal-mediated communications from the outside as Kiev responds to the threats of Putin and threats are signals. This informational city can work more like a central processing unit or alternative a large language model, or it can work through a more morphological computation. Where the computation takes place on the skin of the city.

This is a morphogenesis. *Formativita* as forms of life in making. Now literally technological forms of life (Lash 2002). Early versus late Wittgenstein. Late Wittgenstein forms of life, forms of making. The *formativita*: the ways of making of the city of urban space. In a dialogue, the evolving city itself involving niche construction and modification as it modifies its niches, (Keith and de Souza Santos 2021) its geology, its hydrosphere, often sadly its atmosphere; its biosphere as monkeys flood out of the jungles into the urban spaces of Delhi and Mumbai. Let's get back to forms with Wittgenstein and Einstein, form becomes forming, and such forming is relative, becomes relative, that is juxtaposing one social space, one form of life to another, unlike the universal and empty predications of true not true of his earlier incarnation.

Thus, relational space and relativity. Thus, Einstein's thought experiment in which inside a windowless elevator you cannot tell whether the lift is at rest in a gravitational field or is hauled up with constant acceleration. Or again of course

topological equivalents. Of a time-space morphing into its topological equivalents. Each relative to the other. Not the non-relationality of topography. The formativata of urban space is in such a topology, of the same that morphs into a difference that is also an equivalent, a same.

Thus, an informational city that is not, as in the earlier Turing, only algorithmic (Longo 2019). It is a city that relates to the affordances of its environment, which for James J. Gibson (2014) were comprised of information, but not digital or algorithmic information. The discrete binary and the algorithm in the “early Turing” are about number. But the morphological computation here, unlike CPU computation it worked less through the digital than something more analogous to the analogue (Mazzolai et al. 2020; Calvo 2022). It is less about the discrete than the continuous. You count the discrete, you measure the continuous. This urban morphology is ecological in fact and in method. Such for me are some implications of Martina Löw's relational space. It becomes obvious that some 23 years after its initial publication, *Raumsoziologie* in an expanded field.

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