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*"Peter Eisenman; Feints" edited by Silvio Cassarà. edition Skira, Milano 2006.*

**What is a Diagram anyway?**

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*What, then, is a diagram?*

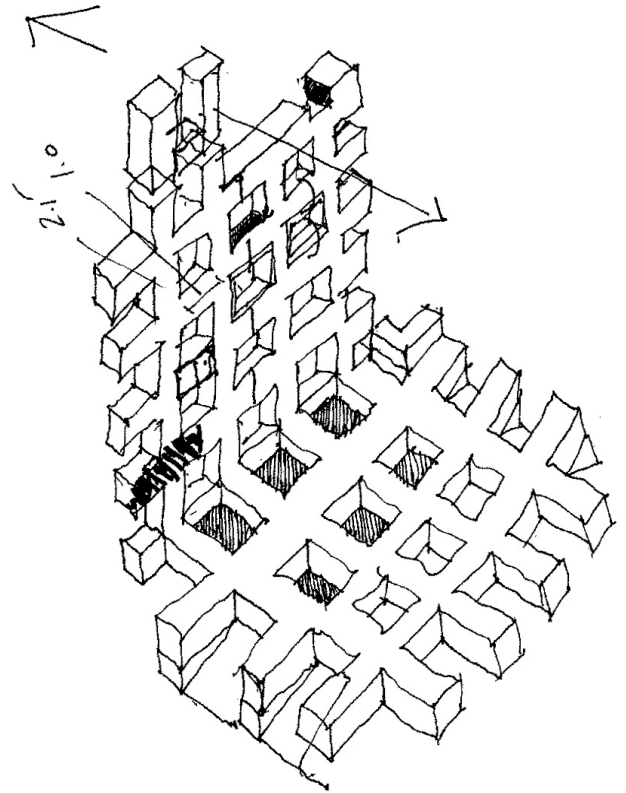
Well, the dictionary definition allows a pretty wide sweep of possibilities. The Oxford English Dictionary traces the word from the Old French, "diagramme", out of the Greek "diagramma", from "dia", ("through", "across"), or and "graphein", something written, like a letter of the alphabet. Which takes diagram from simply something "marked out by lines", all the way through a geometrical figure, to a written list, a register, a gamut or scale in music. More precisely, and along the lines of its geometry, a diagram might be "a figure composed by lines", an "illustrative figure", a "set of lines, marks, or tracings". But it is the function of these traces that is important: a diagram serves something else. It illustrates a definition, aids in the proof of a proposition, it represents the course or results of any action or process.

*How might it do this?*

First, it doesn't, like a picture, represent the "exact appearance of an object". Rather it represents "symbolically". In this sense, it is an abstraction of what it represents, giving only "an outline or general scheme of it"; it exhibits "the shape and relations of its various parts" without imitating them. Through this abstraction it is able to signify variations, actions, or even mental processes. It is at once precise-giving form to a definition or statement-and vague-an outline or "general scheme".

*You used the word "symbolically." Is the diagram then a symbol?*

Perhaps the most penetrating examination of the nature and role of diagrams was undertaken by Charles Sanders Peirce (1839-1914), in the context of his general theory of signs, his semiology. For Peirce, all thinking took place with signs, things which served "to convey knowledge of some other thing". which they were "said to stand for, or represent". A sign therefore always has an object, and the sign in turn excites an idea in the mind, a mental sign of the same object, or that which interprets the sign<sup>2</sup>. But, of course, all signs are not the same. Peirce distinguished three kinds of signs: the *Icon*, the *Index*, and the *Symbol*. The *Icon* is that kind of sign that is most like its object - "a sign which stands for its object because as a thing perceived it excites an idea naturally allied to the idea that object would excite". Most icons indeed are likenesses. In this definition, a photograph, or even a fragment of audio mimicry would be an icon. An *Index*, by contrast, holds no resemblance to its object, it simply points to it: "An index stands for its object by virtue of a real connection with it, or because it forces the mind to attend to that object". Peirce cites the barometer, that indicates the temperature, the weathervane that indicate the direction of the wind, or the pole star, from which we derive our sense of direction in nature. And finally, the *Symbol*, which unlike the *Icon* or the *Index*, which are "non-declarative" signs, "is a



sign naturally fit to declare that the set of objects, which is denoted by whatever set of indices may be in certain ways attached to it, is represented by an icon associated with it".

*But, given we accept this division, where does the diagram fit into this schema?*

For Peirce, the diagram is neither Index nor Symbol, but rather a special kind of Icon. Here he distinguishes between three kinds of Icons: those that are more properly called images, or "hypoicons," that, as in the case of paintings, resemble their objects in many particulars; those that represent the character of their objects through parallelism, which he calls "images"; and those that mark out the internal and external relations of their objects in a more abstract way, analogously, that he calls "diagrams".

*What is the importance of the diagram to Peirce?*

As a philosopher inquiring into the nature of thought through the use of signs, Peirce is naturally primarily interested in the diagram. It is, he believes, a useful sign for thinking: "A diagram is a kind of icon particularly useful", he writes, "because it suppresses a quantity of details, and so allows the mind more easily to think of the important features". This said, a diagram is most useful of all for the work of mathematics: "mathematical reasoning is diagrammatic", he repeats, as he investigates the thought processes of algebra and geometry, both of which employ diagrams as an integral part of their functioning". More generally, he claims, all reasoning, whatever the object, is diagrammatic in form, as it works through abstraction to develop hypotheses and test them: "we construct an icon of our hypothetical state of things and proceed to observe it... We not only have to select the features of the diagram which it will be pertinent to pay attention to, but it is also of great importance to return again and again to certain features... But the greatest point of art consists in the introduction of certain abstractions".

*But doesn't this make the diagram simply a static and fixed version of one moment in thought, thus blocking any development?*

No, because it is precisely through abstraction that allows the diagram to be, so to speak, productive, so that through permutation and transformation, the "characters of one diagram may appear in another". In this sense the diagram is both the instrument of thought and its mirror.

*If that is the case, what about thought that is prospective, projective, and prognostic?*

This is where the diagram truly comes into its own. Peirce gives examples of thought processes that, using diagrams, are transformed into "resolutions", or "determinations": a "plan" is a diagram, which is no more than a program for future action, based on the ideas and principles embodied in it. For Peirce, then, the diagram is, finally, a mental formula, a schematic device, by means of which we move from one thought to another. It is, by reason of its "general" nature, its abstraction, a vehicle for the production of new, and developing diagrams.

*Does this not lead to what we might call a 'fetishisation' of the diagram?*

Certainly not for Peirce: as an icon, or "schematic image," that embodies the meaning of its object-in the case of thought, a "general predicate" it serves in itself only as an object, the observation of which produces another general predicate. In other words "the diagram itself is not what reasoning is concerned with", but rather it operates as a vehicle of transmission and production of reasoning.

*Can you give a specific example?*

In his essay on the philosopher-astronomer Johannes Kepler, whose work on the rotation of the planets after Tycho Brahe proved their elliptical orbits, Peirce found the key to Kepler's success in his method of reasoning, and this through the use of diagrams: "His admirable method of thinking consisted in forming in his mind a diagrammatic or outline representation of the entangled state of things before him, omitting all that was accidental, observing suggestive relations between the parts of his diagram, performing divers experiments upon it, or upon the natural objects, and noting the results". Here, Peirce admits that something more than the mathematical structures of reason had to come into play; something that characterized "high reasoning power". This he called "imagination". But this was not imagination in general-that "ocean-broad term, almost meaningless, so many and so diverse are its species"-nor was it the poetic imagination that conjures up the unknown. Rather, what Peirce saw in Kepler was a kind of "devil's imagination". Where, the "poet-imagination riots in ornaments and accessories" Kepler's imagination "makes the clothing and the flesh drop off, and

the apparition of the naked skeleton of truth to stand revealed before him". For Peirce this marked Kepler as a path-breaker in the progressive "de-mythologisation", of a world destined, in Max Weber's words, for general "disenchantment" through the operations of science: "we are not surprised", writes Peirce, "to find that Kepler looked on life with an eye of sadness, without tears, yet without illusion".

*The diagram, then, as the instrument of reasoning, is also an icon of modernity?*

Yes, if, it has to be said, by "modernity" we mean to include all of the forms of thought stemming from what Husserl termed "Origin of Geometry", from Thales, Anaximander, and, of course, Plato in the *Timaeus*. But it is also true that the self-consciousness of "disenchantment" emerging in the late 19th century, was an especially modern phenomenon as we might use the term.

*And yet Peirce also holds out the promise that the diagram might lead toward another kind of future than that necessarily planned out by it?*

Indeed. Because the diagram, unlike the expressive drawing, provides no depth of meaning beyond its surface-what Gilles Deleuze calls "insight" into its object-and as it, in itself, displays the formal features of its object, it substitutes for and takes the place of its object. This is why Peirce sees the diagram in some way eliding "the distinction between the real and the copy" a distinction which, Peirce claims, disappears entirely in the diagram. Here it is that the diagram reveals its fundamental link to utopia. The question it raises: is it a real object or is it a copy of a real object, makes it an instrument of suspended reality. As Peirce concludes: "It is, for the moment", he concludes, "a pure dream". Or, in other terms, the diagram may be seen as an instrument of and for utopia.

*But then, is there any distinction to be drawn, historically, between diagrams in general, and specifically modern diagrams?*

Yes: and here the contribution of Michel Foucault is critical. For it is Foucault who enters the diagram into the epistemological distinction between "classical" and "modern", into that "gap" or "break" which he finds so intriguing between the representation of traditional power and the signs of modern power. Indeed, it is the very presence of the diagram that demonstrates the existence of a new order of powers, and a new shape of institutions. In Foucault, the diagram is the icon of an epistemological shift. Hence the celebrated example of Bentham's Panopticon, for Foucault less an architectural project than an icon of "panopticism", the generalized dissemination of modern power through the optical and spatial mechanisms of surveillance.

*But wasn't the form of the Panopticon, with its radially planned cells encircling a central observation post, simply an up-dating of every circular utopia since Plato's idealized models of Athens, Vitruvius's City of the Winds, and all the Renaissance utopias from Filarete on? What makes this especially "modern"?*

Of course, all utopias are in some sense diagrams, and their diagrams are more or less all "perfectly closed in on themselves", often circular, and all geometrical. But the difference, say, between Filarete's Sforzinda and Bentham's Panopticon, is that the diagram of Sforzinda, with its squares rotated within a circle, is as much a symbol of its perfection, in harmony with the Platonic cosmos, as it is an icon of relationships. Bentham's Panopticon, by contrast, is the opposite of what Foucault calls "a dream building": "it is the diagram of a mechanism of power reduced to its ideal form". As such, it is an abstraction of its functioning-a "pure architectural and optical system" that recognizes no obstacle, resistance or friction in its operation. Its diagrammatic nature, indeed, "detached from any specific use"-Bentham suggested the plan for prisons, asylums, hospitals, workshops, and schools-allows it to become a "figure of political technology".

*But the Panopticon is only one example of eighteenth-century ideal planning. How is it to be considered a generalized figure?*

Because, in Foucault's terms, all institutions at the end of the eighteenth century are undergoing a similar transformation, and, if they were not already in existence, were being developed according to the same schemata. A host-Foucault uses the word "swarming"-of new institutions were being invented in order to develop the disciplining, in the most general sense, of society; its "reform" according to rational principles as the philosophies put it. And of course Bentham was the very type of reformer-his prison was invented to redeem the criminal, re-fabricated (re-manufactured) in order to return to civil society; it was also, following Beccaria, an

institution of temporal incarceration to replace torture and slave deportation as a civilized form of punishment. These institutions were not necessarily designed by architects, but by doctors, lawyers, scientists, educators, and not according to the laws of classical representation, but according to the rule of the diagram. This produced the first glimmerings of a "functional" architecture-"an architecture that is no longer built simply to be seen... but to permit an internal, articulated, and detailed control".

*But the discourse of power might have been right for the mid-sixties and seventies, but hasn't worn out its welcome thirty years on? What use is the panoptical diagram to us now?*

It was Deleuze, who, precisely in his study of Foucault, who adumbrated a theory of the diagram that was at once more generalized and more evolutionary, if one can use that word, than in Foucault's own, historically specific, example. For Deleuze, Foucault's contribution was to have identified what he termed the "cartographic" character of the diagram. For Deleuze, the panoptical diagram generalized, was the specific prison diagram generalized to an entire society: "It is the map, it is cartography coextensive with the entire social field". For Deleuze the importance of the diagram is that it "specifies" in a particular way the relations between unformed/unorganized matter and unformalized/unfinalized functions, that it joins the two powerful regimes of space (the visible) and language (the invisible but ubiquitous system). The diagram, then, in Deleuze's terms is a kind of map/machine, a spatio-temporal abstraction that "refuses every formal distinction between a content and an expression, between a discursive and a non-discursive foundation. It is, he writes, "an almost silent/dumb and blind machine, even though it is that which causes sight and speech": "If there are many diagrammatic functions and even materials, it is because every diagram is a spatio-temporal multiplicity. But it is also because there are as many diagrams as there are social fields in history. When Foucault invokes the notion of the diagram, it is relation with our modern disciplinary societies, where power divides up the entire field in a grid: if there is a model for this, it is the model of the "plague" that sections off the ill city and extends into the smallest detail. There are accordingly diagrams for all social orders-for factories, theaters, monarchies, imperial regimes".

*This, however, is simply to restate Foucault-what does Deleuze draw from this for his own philosophy?*

We have to remember that all of Deleuze's re-readings of philosophers -Kant, Bergson, Nietzsche, Foucault-are in effect re-formulations; like the diagrams of which he speaks endlessly, previous philosophical maps are there to be re-drawn, their boundaries erased and their topographies disturbed. Here the diagram works hard: "What is more these diagrams are all interrelated-they interpenetrate each other. This is because the diagram is profoundly unstable or fluid, never ceasing to churn up matter and functions in such a way as to constitute mutations. Finally, every diagram is intersocial and in a state of becoming".

Then what happened to institutions in the late eighteenth century could happen again, with new and improved diagrams?

Not only that, it has already happened many times-first with Kant, then with Bergson, then with Foucault himself, who was, as we know hardly delineating diagrams for history's sake, but rather for his active politics of engagement with the late version of the carceral society in which he lived. Thus for Deleuze, the diagram's importance is that "it never functions to represent a pre-existing world, it produces a new type of reality, a new model of truth. It is not subject to history, nor does it hang over history. It creates history by unmaking preceding realities and significations, setting up so many points of emergence or creativity, of unexpected conjunctures, of improbable continuums. It doubles history with a becoming [avec un devenir]".

*But what about Guattari; is he a diagram philosopher too?*

It is this potential of mutation, of endless transformation and becoming, that makes the diagram for Deleuze, as well as Guattari, an especially transgressive device. As Gary Genosko has recently noted, the very fact that the diagram organizes an escape from pure linguistics into a de-territorialized spatial zone: "Diagrammatic machines of signs elude the territorializing systems of symbolic and signifying semiologies by displaying a kind of reserve in relation to their referents, forgoing polysemy and eschewing lateral signifying effects". This is why Guattari spends his life diagramming, dividing the world into flows and striations, orders and chaos. Diagrams are naturally and delightfully ill-behaved, they "do not behave like well-formed signs in a universal system of

signification and fail to pass smoothly through the simulacral dialogism of ideal models of communication". In this way, what might seem to be "an arid algebra of language" in diagram form actively serves Guattari's "pragmatics of the unconscious" and thence his insurgent social practice.

*The panopticon gives us an insight into the emergence of the functionalist diagram, and we can trace its influence throughout the modern movement, and well into the architectural practice of the late twentieth century. But if we are as critics engaged in an insurgent social practice, how does the diagram help us in developing an insurgent architectural practice? Isn't the diagram as we know it now simply the icon of corporate economics?*

Of course, as Peirce indicated, and Foucault and Deleuze sustained, there is nothing ontological about the diagram-it declares itself for or against nothing. But the development of a critical diagram is as potentially de-stabilising to convention as the sustenance of a normative diagram. Deleuze, in his study of the painter Francis Bacon, finds that in the painter's practice-in the literal application of paint to the canvas-the diagram (or "graph" as Bacon calls it) is several times disturbed, erased, and re-construed. The mental graph of the painter is in this way directly obliterated by the act of painting. The "figurative givens" whether in the painter's head or on the canvas, will be "removed by the act of painting", wiped out, erased, covered over. Such a process, that sees the diagram as something to be mutilated and recreated, scored, and re-scored by the marks of the hand, might indicate a parallel practice for architecture.

*But surely you are not saying that we should return to the time of chiaroscuro, of clair-obscur, of patina, and intuition?*

This would, even if desired, be impossible-only the simulacra would remain. But such a practice of erasure can easily be envisaged with respect to the analytical drawing, whether constructed by hand or digitally. Look for example at Eisenman's Terragni drawings. It is not clear to me that all the elaborate, analytical deconstructions of the Casa del Fascio are in themselves diagrams, properly speaking. Each one is too specific to perform this role. But it is clear that Eisenman possesses a "diagram" of Terragni, or that, so to speak, "Terragni" is a diagram for Eisenman. Rather in the same way that the Dom-ino house is a diagram for Le Corbusier, and all his ensuing villas are elaborations of this diagram, as well as its erasure-with their own diagrams to be sure, so that the villas are in effect diagrams of diagrams-so for Eisenman, Terragni holds a diagram, envisaged as a mental cartography of formal relations, that underlies each of the individual investigations. Diagram Diaries is, in this sense, a record of the search for a diagram that, precisely because it is a diagram can never be entirely constituted as such, but acts as a spur to the genetic production of subsidiary diagrams, new diagrams that take as their elements old diagrams, and so on. The endless permutations, and all those that might be imagined but are not there, do not in themselves define, or pin down the diagram. Rather they establish a kind of rhythm of enquiry, a punctual relationship between "Terragni" and "Eisenman" over a lifetime. And in this process, the diagram emerges as the icon of catastrophe, of its own obliteration. As Deleuze notes of Pollock: "the painting thus becomes catastrophe painting and a diagram painting at one and the same time"

*Yet Eisenman has hardly ever referred to Deleuze, while he has often, at least since 1985, claimed Derrida as a strong influence. What would a diagram be for Derrida?*

It's not at all clear that Derrida would have proposed the "diagram" as a model of thought; at first sight one might understand deconstruction as a thoroughgoing destruction of all iconic signs. And yet, given Freud's propensity for diagramming the "architecture of the unconscious", and Derrida's fascination with the idea of the "mystic writing pad", and its "traces", one might begin to discern a consistent preoccupation with a certain kind of mental diagram in Derrida. This might be, for example, connected to the network set up by the ambiguous or polysemic meanings ascribed by words-such as the pharmakon, or the chora-, words that far from delineating precision, describe a field of operation, within and outside of a text. The very impossibility of pinning such words down, the demand for all texts to be undone as positive signs or instruments of meaning, would in this sense be a diagram. Perhaps here, the affinity Derrida/Eisenman might be characterized as a practice based on the mental maps, of which Peirce speaks, but one that never resolves itself into fixed or purely iconic signs.

*Does this mean that the "diagram" is everything or nothing, in the same sense indicated by Derrida's chora?*

Not entirely, although the status of neither this/nor that does allow for a certain diagrammatic productivity built up on the interference-what Norbert Wiener would call "noise" of the oscillation between the two poles. And mention of Norbert Wiener, returns us to the domain of semiology, but in the manner of information theory, of cybernetics, as developed after the Second World War.

*But this would be to open up an entirely different domain of discussion that of cybernetic diagrams as the progenitors of digital diagrams. Might we say that the notion of feedback is in a sense built into the diagram from the outset?*

Yes, and what is remarkable about the development of digital diagrams in the last decades, is the extent to which they depend on information and communication theory, and even more, to which they reveal the processes working behind the diagram itself. Indeed, software iteration, linked to the input of certain information, when animated, provides a map that is neither quite "mental" nor purely iconic, a map that can be manipulated at will to produce other maps.

The circle is thus closed; from Peirce to Deleuze a theory of the diagram has evolved to the extent that it is enacted on the screen. This is at once the delight of diagrammatic play, and the trap of facility; when diagrams had to be laboriously engraved, delineated, and drawn by hand their ubiquity was controlled by thought. With digital iteration, diagrams become both malleable and potentially thoughtless. The control of diagrams; their policing will become for the next decade the central question of theory: not what would thinking about diagrams mean, but in what way might diagrams think?

Which would return us to Derrida, and his often asked question", the question of architecture as a possibility of thought, which cannot be reduced to the status of a representation of thought". We might ask precisely the same question of the architectural diagram, about diagrammatic thinking.

" Ibid.

4 Ibid., p. 14.

5 Ibid., p. 17.

6 Ibid., p. 274.

7 Ibid., p. 13.

8 Ibid., pp. 206-207.

9 Ibid., p. 212.

10 Ibid.

11 Ibid., pp. 246-247

12 Ibid., pp. 206-207

13 Ch.S. Peirce, Values in a Universe of Chance. Selected Writings of Charles S. Peirce (1839-1914), edited with an Introduction and Notes by P.P. Wiener, Doubleday, New York, 1958, p. 255, essay on "Kepler".

14 "Ibid.

15 Ibid.

16 M. Foucault, Discipline and Punish. The Birth of the Prison, trans. Alan Sheridan,

Allen Lane, London, 1977, p. 205. 17 Ibid., p. 172.

18 G. Deleuze, Foucault, Editions Minuit, Paris, 1985, p. 42.

19 Ibid., p. 43.

20 G. Genosko, "Guattari's Schizoanalytic Semiotics", in E. Kaufman and K.J. Heller, eds., Deleuze and Guattari. New Mappings in Politics, Philosophy, and Culture, University of Minnesota Press, Minneapolis, 1998, pp. 175-190.

21 Ibid., p. 186. 22 Ibid., p. 175. 2" G. Deleuze, Francis Bacon, The Logic of Sensation, trans. Daniel \V. Smith, Afterword by Tom Conley, University of Minnesota Press, Minneapolis, 2003, p. 81.

2. Ibid., p. 86.

25 J. Derrida, "Architecture Where the Desire May Live," interview with Eva Meyer, Domas, vol. 67 (1986), p. 17.

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<sup>1</sup> The Compact Edition of the Oxford English Dictionary, vol. 1 (OUP, 1971), p. 714.

<sup>2</sup> Ch.S. Peirce, The Essential Peirce. Selected Philosophical Writings, vol. 2 (1893-1913), p. 13.