



# The Net Effect

**Design, the Rhizome and Complex Philosophy**

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## **Complexity as a network issue**

Understanding complex networks

**Digital communications**

**Urban networks**

**“The City is not a tree”**

**Network Nation**

**Internet**

**Design processes**

**Social processes**

**Society of mind (Minsky)**

**Semantic networks**

**Situated cognition**

**Scaffolded mind (Clark)**

**Neural networks**

**Actor networks**

...

“Strictly, it is meaningless to talk about the complexity of an object without referring to a representation.”

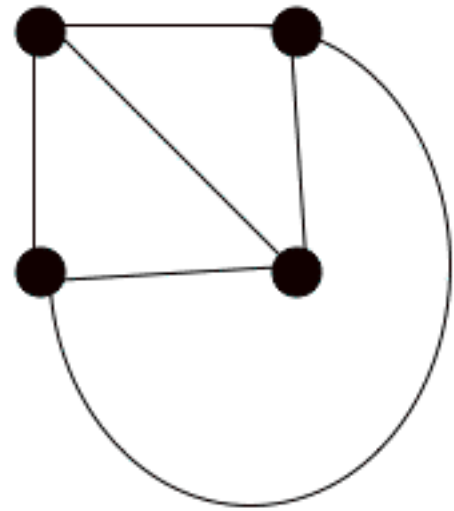
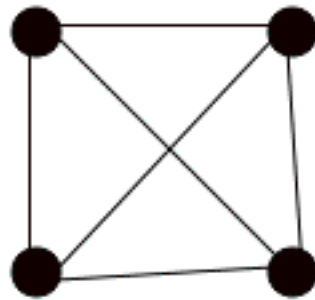
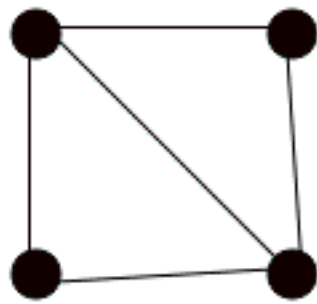
John Woodward, Design, complexity and abstraction.

## **Complexity, network, and diagram**

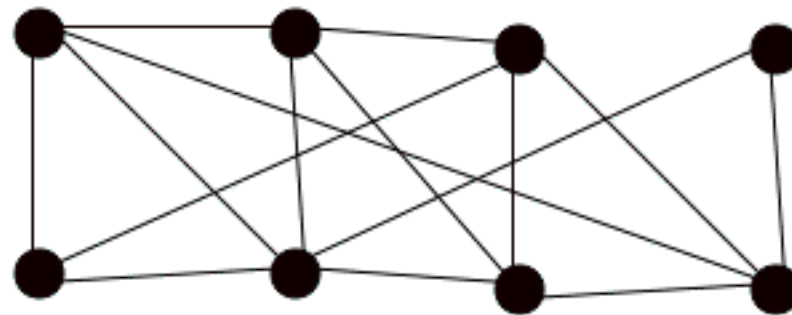
Strogatz , Steven H. 2001. Exploring complex networks, *Nature*, 410, 268 - 276.

Features of complex networks/diagrams ...

- Structural complexity: the network is an intricate non-planar tangle
- Changes over time
- Links between nodes have widely different values, directions and effects
- Dynamical complexity: nodes form nonlinear dynamical systems
- ...



Planar graphs



Non-planar graphs

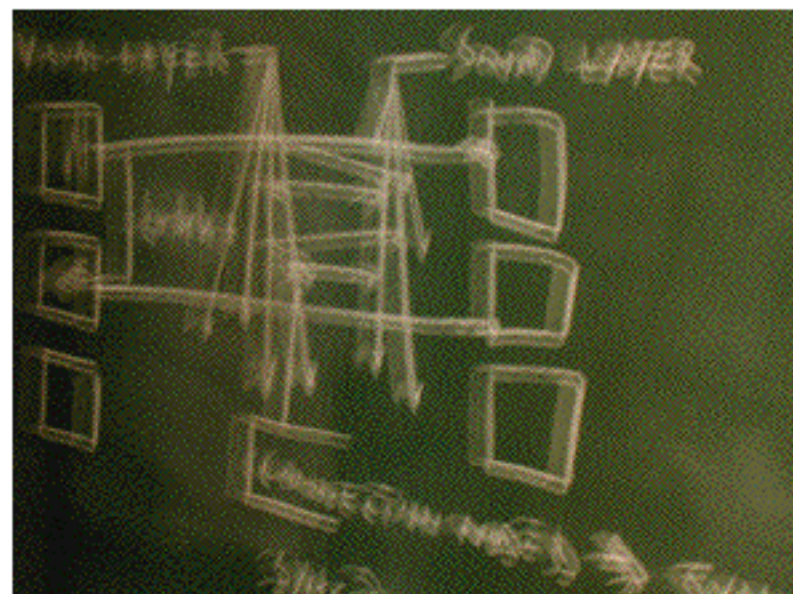
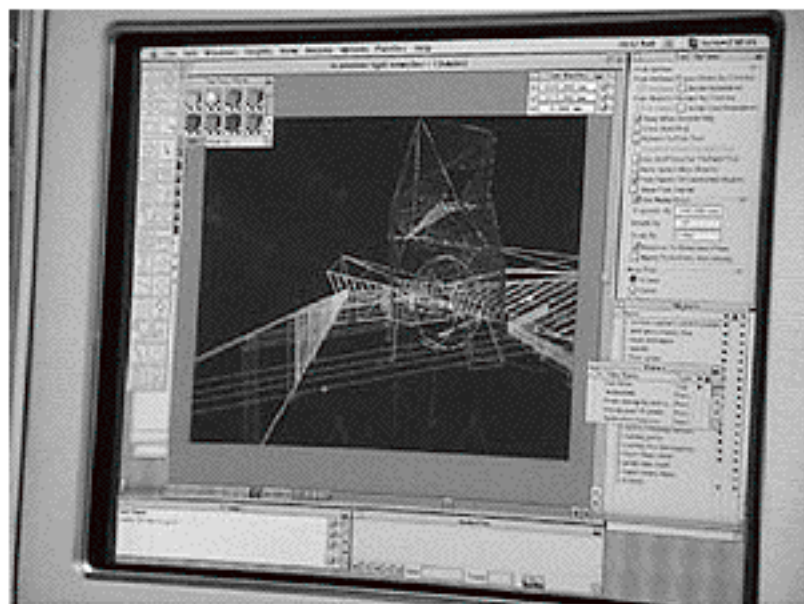
Steadman, Philip. 1983. *Architectural Morphology: An Introduction to the Geometry of Building Plans*. London: Pion.

March, Lionel, and Philip Steadman. 1971. *The Geometry of Environment: An Introduction to Spatial Organization in Design*. London: RIBA Publications.

# Network metaphysics

(the authority of the network: abstraction and universality)

- there are hidden/deeper/higher meanings than are revealed on the surface
- networks are a way of representing deeper meanings and/or
- meanings reside in complex interrelationships (networks)



## The relevance of Deleuze and Guattari's concept of the rhizome

Deleuze, G., and Guattari, F.: 1988, *A Thousand Plateaus: Capitalism and Schizophrenia*, Trans. B. Massumi, Athlone Press, London.



Deleuze, Gilles. 1993. *The Fold: Leibniz and the Baroque*. Trans. T. Conley. Minneapolis, MN: University of Minnesota Press.

———. 1994. *Difference and Repetition*. Trans. P. Patton. London: Athlone Press.

Deleuze, Gilles, and Felix Guattari. 1977. *Anti-Oedipus: Capitalism and Schizophrenia*. New York: Viking Press.

———. 1988. The smooth and the striated. *A Thousand Plateaus: Capitalism and Schizophrenia*: 474-500. London: Athlone Press.

———. 1988. *A Thousand Plateaus: Capitalism and Schizophrenia*. Trans. B. Massumi. London: Athlone Press.

A rhizome is an “acentered, nonhierarchical, nonsignifying system without a General and without an organizing memory or central automaton, defined solely by a circulation of states.”

Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, 21.

organicism



“... there is no overcoding with the rhizome.”

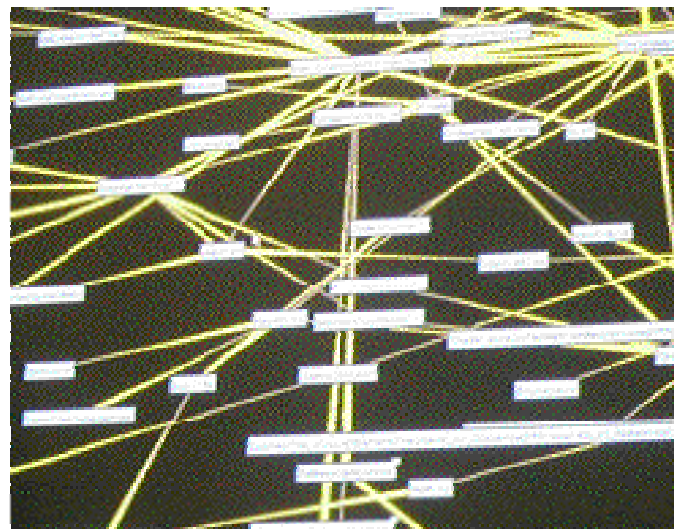
Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, 9.



Deleuze and Guattari seem simply to be supporting a non-hierarchical view of things (networks v trees)

... but they also advocate a non-hierarchical view of meaning

- To appropriate the rhizomic nature of things is to see them as single-layered
- Concepts of levels (of meaning and abstraction etc) are recast in terms of “breaking through,” subversion, cuts, etc.



The plane of consistency of Nature is like an immense Abstract Machine, ... This plane has nothing to do with a form or a figure, nor with a design or a function. Its unity has nothing to do with a ground buried deep within things, nor with an end or a project in the mind of God. Instead, it is a plane upon which everything is laid out, and which is like the intersection of all forms, the machine of all functions; its dimensions, however, increase with those of the multiplicities of individualities it cuts across.

Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, 254.

... the other network: the warp (structured) and woof (loose) of the weaver

[the beneficent ruler] brings their life together in agreement and friendship and makes it common between them, completing the most magnificent and best of all fabrics and covering with it all the other inhabitants of cities, both slave and free.

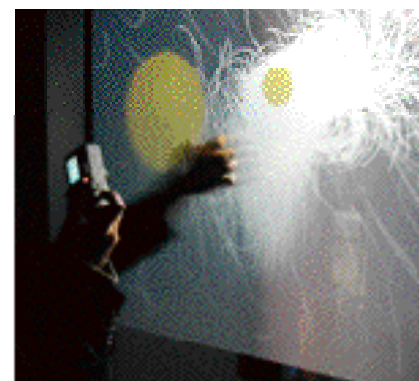
Plato. *Statesman*, 311c.



## Plato's rivals: the Stoics

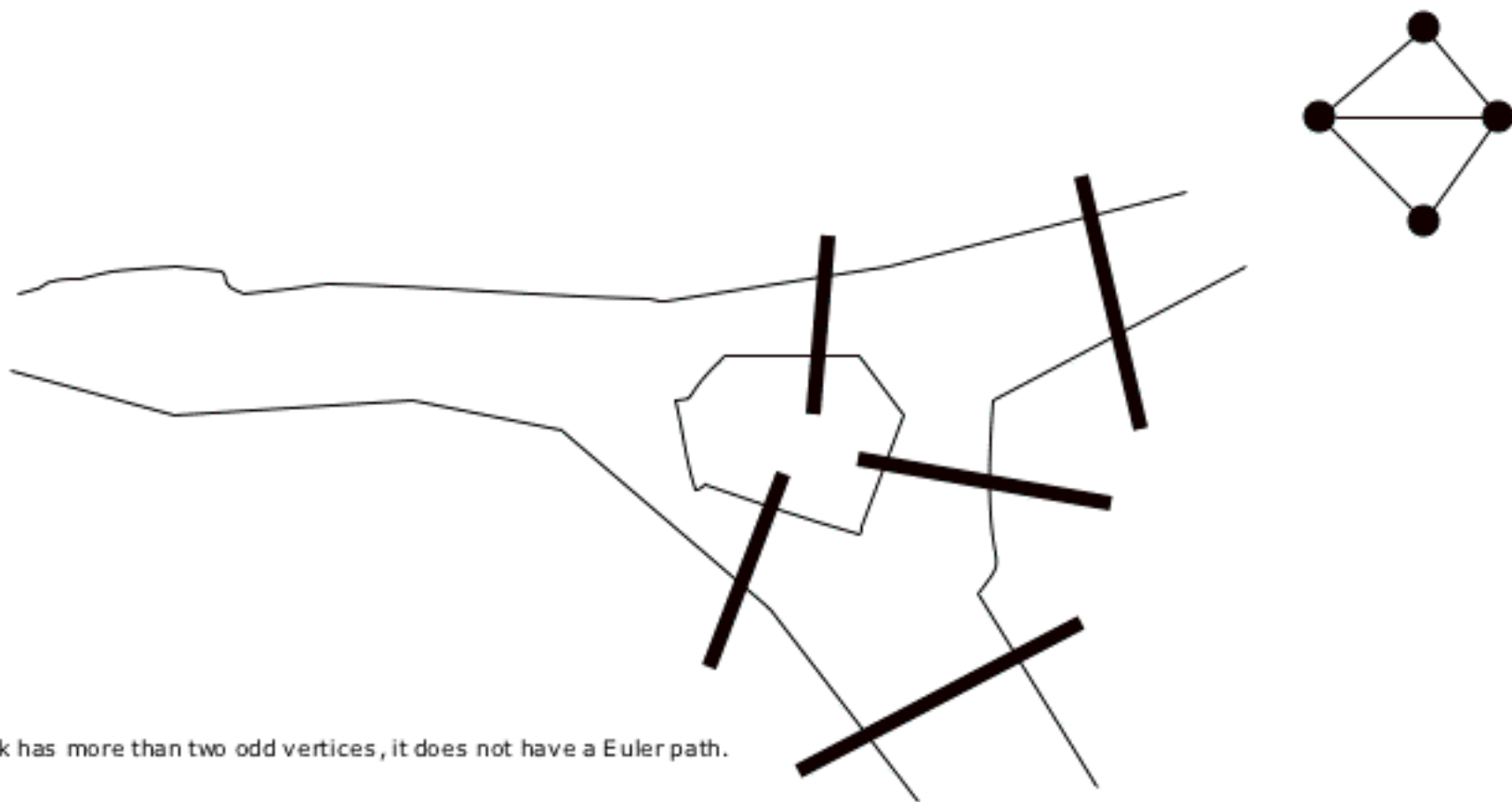
“... observe how all things are submitted to the single perceptivity of this one whole, all are moved by this single impulse, and all play their part in the causation of every event that happens. Remark the intricacy of the skein, the complexity of the web.”

M. Aurelius, Meditations, 73.



## The loop

The Königsberg bridge problem and the Euler path



If a network has more than two odd vertices, it does not have a Euler path.

## **Authority of the loop**

Free form

Democratic

Indeterminate paths

Give and take

Flows

Circuits

...

## **Authority of the cut**

Breaks in the loop

Rupture

Discontinuity

...

every machine functions as a break in the flow in relation to the machine to which it is connected, but at the same time it is also a flow itself, or the production of a flow, in relation to the machine connected to it.

G. Deleuze and F. Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 36.

everything functions at the same time, but amidst hiatuses and ruptures, breakdowns and failures, stalling and short circuits, distances and fragmentations, within a sum that never succeeds in bringing its various parts together so as to form a whole.

G. Deleuze and F. Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 42.





## **Network pragmatics (conclusion)**

- complexity is a network thing
- a network is a diagram
- "Network" is (just) a term/metaphor
- it carries authority in certain contexts
- it does not give us access to hidden meanings
- there are other metaphors (eg metaphor, interpretation, play ...)
- a network representation is not special
- the rhizome and subversion
- creative subversion "can begin to burgeon nonetheless, throwing out rhizome stems ..."
- the network is an effect
- complexity is an effect of networks?