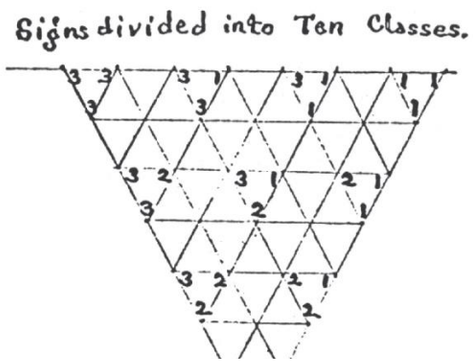

Seminars on Pragmatism and the Sciences

Thursday, 11 October 2018
h. 14,30, Sala Paci,
Department Of Philosophy, University of Milan,
Via Festa del Perdono 7 – 20122, Milano

FRANCESCO BELLUCCI
(University of Bologna)

PEIRCE ON DIAGRAMMATIC REASONING

It is known that Peirce's doctrine of diagrammatic reasoning derives from Kant, but the details of the derivation have not been fully clarified. In the *Discipline of Pure Reason*, Kant says that mathematical cognition is cognition from the construction of concepts, where to construct a concept means to exhibit that concept a priori in intuition. Construction can be ostensive (as in geometry) or symbolic (as in algebra). Peirce agrees with Kant that mathematical reasoning is constructive, but extends this idea to the whole of deductive reasoning: all deductive reasoning is mathematical reasoning, and all mathematical reasoning is diagrammatic reasoning, i.e. reasoning based on construction, observation, and manipulation of diagrams. As for Kant, for Peirce diagrams can be of two main kinds: geometrical and algebraical. The generalization of Kant's philosophy of mathematics into a doctrine of diagrammatic reasoning was influenced, as Peirce himself acknowledges, by F. A. Lange's *Logische Studien*, in which it was argued that the intuition of space is the source of the necessary and yet synthetic character of both logical and mathematical reasoning.

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