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Abstract: In this paper, we try to shed light on the ontological puzzle pertaining to models and to contribute to a better understanding of what models are. Our suggestion is that models should be regarded as a specific kind of signs according to the sign theory put forward by Charles S. Peirce, and, more precisely, as icons, i.e. as signs which are characterized by a similarity relation between sign (model) and object (original). We argue for this (1) by analyzing from a semiotic point of view the representational relation which is characteristic of models. We then corroborate our hypothesis (2) by discussing the conceptual differences between icons, i.e. models, and indexical and symbolic signs and (3) by putting forward a general classification of all icons into three functional subclasses (images, diagrams, and metaphors). Subsequently, we (4) integratively refine our results by resorting to two influential and, as can be shown, complementary philosophy of science approaches to models. This yields the following result: models are determined by a semiotic structure in which a subject intentionally uses an object, i.e. the model, as a sign for another object, i.e. the original, in the context of a chosen theory or language in order to attain a specific end by instituting a representational relation in which the syntactic structure of the model, i.e. its attributes and relations, represents by way of a mapping the properties of the original, which hence are regarded as similar in a relevant manner.