

A Neo-Aristotelian Account of Predication

In Categories 1a20–1b10 Aristotle introduces two distinctions, namely that between *types* (universals) and *tokens* (particulars) on the one hand and that between *characters* (features) and their *subjects* (bearers) on the other hand. The combination of these distinctions results in a four-fold categorial scheme called the Ontological Square. This four-category ontology, which has been promoted by Jonathan Lowe (2006, chap. 2), consists of the following items:

	Subjects	Characters
Types	Kinds (e.g. <i>Man</i>)	Attributes (e.g. Wisdom)
Tokens	Substances (e.g. Socrates)	Moments (e.g. Socrates' wisdom)

The Ontological Square is a scheme of (ontic) predication which is more subtle than the one that underlies usual predicate logic, since it involves several dimensions of predication, corresponding to distinct formal ties or *nexus*:

1. The formal tie of *instantiation* binds types to their tokens or instances: kinds are instantiated by substances and attributes by moments as particular features of substances.

2. The formal tie of *characterisation* links features to their bearers: moments characterise substances and attributes characterise kinds. While all moments are particular features of substances, some (but not all) attributes may be generic features of kinds, such as Rationality with respect to Man. In order to distinguish specific from generic characterisation, we will refer to the former as *inherence* and to the latter simply as *attribution*.

3. The formal tie of *exemplification*, which glues substances and attributes together, is the sole copula really taken seriously by logicians since Frege and Russell. It can be defined either in terms of instantiation and attribution or in terms of inherence and instantiation.

4. The formal tie of *subsumption* is a hierarchical tie between types which is crucial in Aristotelian syllogistics, but is unjustly neglected in modern formal logic. Indeed, assuming that types are not extensional, subsumption cannot be accounted for in terms of co-instantiation and hence has to be accepted as primitive.

Thus, given a minimal correspondence between atomic logical form and ontological structure, the commitment to *nexus* as a distinct ontological category entails a rehabilitation of copulae as ties of predication. This suggests a revision of atomic logical form resulting in a copula logic that amounts to a calculus of many-sorted second-order logic, called the *Logic of the Ontological Square (LoOS)*. The Logic of the Ontological Square provides four forms of predication (i.e. instantiation, subsumption, attribution and inherence) instead of only one (i.e. exemplification) as in classical predicate logic. Furthermore, predication in LoOS consists in copulae binding individual terms, whether instance terms or type-terms. Nonetheless, LoOS can be given a semantics that is akin to a first-order semantics for standard second-order logic (Shapiro 1991, 74–75).

Literature:

Lowe, E. J. (2006). *The Four Category Ontology. A Metaphysical Foundation for Natural Science*. Oxford: Oxford University Press.

Shapiro, S. (1991). *Foundations without Foundationalism: A Case for Second-Order Logic*. Oxford: Oxford University Press.