

Topics on General and Formal Ontology

Paolo Valore
Editor

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General and Formal Ontology

Paolo Valore

The word *ontology* derives from τὸ ὄν (*tò òn*), which is the neutral participle of εἶμι (*eimi* =I am) and whose genitive form is ὄντος (*òntos*), and from λόγος (*logos*). The literal meaning of this discipline is therefore “investigating that which is”. Currently, ‘ontology’ is mainly used in two meanings: *a*) a philosophical discipline that studies being, that is as a part of metaphysics; *b*) a theory that deals with types of entities, specifically those types of abstract entities that are allowed in a language (ontology as specification of a conceptualization). Meaning *b*) has become widespread above all in areas connected with Artificial Intelligence and computer science. The ontology addressed in this collection of essays is predominantly that engaged in the study of being. Also included is the question of the types of entities that are allowed.

Research in ontology has often overlapped with research in metaphysics in general or the two have been viewed as identical. It is possible, however, to introduce at least one criterion for distinguishing between them. This is the meaning that we give to the two perspectives: what we call ontology can be considered as the study of being and existence in general, whereas the nature (essence) of being (its ultimate meaning, its known characteristics – if there are any) is the object under investigation by metaphysics. While we can include the existence of thoughts among the various objects permitted in our ontology, we are unable to enquire into the nature of “thought” without abandoning ontology for metaphysics. In some cases, moreover, it is not possible to draw a very clear dividing line between the two branches, the reasons being both intrinsic (the effective connection between them) and extrinsic (the common overlapping of ontology and traditional metaphysics). Nevertheless, it is clear that the field of ontology is traced out in relation to existence and being.

Is ontology today the same as the old traditional ontology? The field of study is evidently the same in certain respects: the problem of existence and being, of what there is and what is real, both in the sense of the question as to the single entities that can be acknowledged as real and in that of asking oneself what, in the final analysis, reality is. From a very general point of view, this can be understood

in at least two ways: either in relation to existence and being as such or to *real* existence and *real* being (as opposed to ordinary or phenomenal existence).

In the first case, one can follow two paths: either giving preference to common sense as the common denominator for the different theories and as the final criterion for the factual truth of the various levels of objectuality or acknowledging various ontologies in relation to different fields and theories, often with great elasticity even to the point of the coexistence of openly conflicting objectual fields.

In the second case, ontology is understood as reconstructing the domain of reality *in itself*, or even only that of *authentic* reality, beyond and often underlying the objective level of experience. This kind of ontological research is unlikely to speak of ontologies in the plural and proceeds very much like traditional metaphysics.

Hence, the object of ontological study is above all that which we are prepared to acknowledge as real, that which we will accept or posit. In this definition, no emphasis should be placed on any psychological connotation: we are forced to *posit* a certain area of objectuality (even the very level of reality *in the proper sense*) since this area must be acknowledged. An ontology thus includes everything that can be acknowledged as real (or as *actually* real). The emphasis is not on the act of experiencing or of acknowledging objects but on the content of experience or on the acknowledged object. Due to this characteristic, ontology cannot even be reduced to epistemology.

Contemporary ontology exploits the idea of logical form to tackle the problems of traditional ontological research. The logical-mathematical conversion of existential assumptions may be of interest also to the philosopher who is engaged in ontology in the “classical” sense of the term. The task of such a remodeled ontology is to promote a new conversion of traditional philosophical problems by freeing itself from the “literary methods” and making use of advances in scientific research, in the first place in logic. In this way, the “logical form” of our theories is displayed, which does not necessarily coincide with their linguistic-grammatical form. Therefore, current ontology differs from traditional ontology in the method of study, based essentially on the *logical form of existential statements*. But there is another aspect that can help us to circumscribe contemporary ontology: that of an ontology *of justification*. Instead of presenting a picture or series of pictures of what the world is like (or a simple list of what exists), it aims to find the reasons for which it is justifiable to claim existence.

I will now discuss briefly the meaning to be attributed to the expression “formal ontology”. The formality of formal ontology may be understood in various ways. First, formal ontology should be thought of as a part of general ontology, distinct for example from a material or other ontology. In this sense, formal ontology deals with something that *is* formal whereas *material* ontology deals with something that *is* material. Along the same lines, formal ontology has developed as a formalized discipline that represents not so much a formal part of ontology as an “ontological” part of the varied world of formal disciplines. Formal is understood in the strong sense as in “formal logic” and ontology is constructed relying on axiomatic structures and logical-deductive procedures.

Another way to understand the “formal” restriction on “ontology” is to refer to the typical meaning of the phenomenology of formal ontology as a *categorical* ontology: in other words, there are categorical structures studied by ontology. Note, in passing, that we are free to choose this meaning also without identifying these categorical structures with those of intentional acts. What is understood here is close to this use of “formal”, for which it is better not to assume, at least in advance, all the phenomenological implications in the sense of the school of thought. This use also comprises what was presented as a first hypothesis: the idea of subjecting the “forms” to investigation, which makes our ontology formal. However, this should not be interpreted as implying an alternative discipline called “material ontology”: “formal” is not opposed to anything but, rather, it clarifies “ontology” by integrating its *object* in the definition. In other words, this does *not* mean that there are other objects of ontology that are neglected. Formal ontology in this sense *is* general ontology. At the same time, this addition also explains the instruments we can utilize for our research, instruments that are sometimes precisely “formal”. In this way, the second meaning is in part recuperated as well, without however embracing the idea of a formal discipline within logic. To rely also on formal instruments does *not* mean that ontology is no longer a part of metaphysics, nor that it is an axiomatized and “artificial” system (in the sense in which we speak of “artificial languages”).

To sum up, formal ontology is general ontology which, *as such*, deals with the formal structures of objectual levels, the formal preconditions for assuming objects in general and the formal categories of levels of reality. We thereby encompass also the concise definition of ontology as “specification of a conceptualization” (meaning *b*). In fact, an ontology is incomplete if it does not also include an indication of the basic categories of our level of objectuality, that is an indication of the ways in which we conceptualize something as “object” or “entity”. Ontology in this sense is formal also because it does not spurn resorting to logic, in the broad sense, as the sometimes privileged path to achieving results that are not in themselves internal to logic.

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