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Aristotle's *Categories**

We live in the age of computerised information. Several thousand millions of web sites are accessible online in the World Wide Web. Some supermarket chains collect terabytes of customer information. Hospitals struggle to document their work in Electronic Health Records (Ball/Collen 1992). Even some branches of science, like Genetics, are no longer possible without computerised storage and retrieval of information, so huge is the collection of data that is amassed by scientists in these fields. Hundred years ago, it was still possible for a medical practitioner to keep track with the progress of this profession. Today, a practitioner would need several weeks of reading to cope with a day's output of medical research (Gaus 2003). But how can a medical practitioner find the relevant information when he needs it? How do we find the relevant pages in the ocean of the World Wide Web, or entries in databases? We need reliable techniques of information retrieval: search engines, indices, and categorisation. Faced with such an urgent need for categorisation, a book on categories is be more than welcome. Aristotle, a young philosopher from Athens in Greece with a Macedonian background, has now published a philosophical investigation on this topic. — Such could be the beginning of a review of Aristotle's *Categories*, were it published today. The aim of this essay as an "Untimely Review" is to speculate how such a review would continue. Such an exercise in counterfactual history is easier when we review some neglected and hitherto uninfluential text. For such a text can really have a fresh impact on contemporary philosophy, whereas a classic text, being neither neglected nor uninfluential, is, as a rule, already an active force that has shaped and continues to shape the philosophical landscape. This applies in particular in the case of Aristotle's *Categories*, which has been for more than two millennia one of the most influential textbooks in philosophy. Writing an untimely review about Aristotle's *Categories* imposes the additional problem that some people doubt both that

* Thanks are due to Ingvar Johansson, Bertram Kienzle, Barry Smith and Niko Strobach, who made timely comments on the first version of this untimely review.

this is the correct title and that it has actually been written by Aristotle himself.¹ For my part, I do not see any conclusive reason to deny the authorship of Aristotle. I will occasionally cite passages from other works attributed him. Whoever denies Aristotle's authorship is invited to read "Pseudo-" in front of "Aristotle" when appropriate and to think of these references as giving only hints about the argumentative context of this text. Similarly, I will use the traditional title to refer to the text without any commitment to its authenticity.

But there is an additional problem in judging the counterfactual influence of *The Categories* were it to be published today. The short work that goes under the title *The Categories* is, without doubt, a fine little exercise in ontology. It is, however, rather improbable that it would be accepted for publication were it submitted today to, say, *Nous* or the *Journal of Philosophy*. Start with the language it is written in: Aristotle's rough ancient Greek is no longer a standard language for philosophical publication. Moreover, there are no footnotes and references, nor section headings and indices, and at times (witness ch. 9) the text very much gives the impression of being a mere draft. And in fact it is widely believed that the vast body of Aristotelian texts that came upon us are notes for the use within the Peripatos rather than texts prepared for publication.

Part of the problem is that it is not clear whether the text is meant to unfold a single coherent topic or whether it is rather a collection of different strands of thoughts only loosely connected with each other. Aristotle starts off with a distinction between homonyms, synonyms and paronyms. In making this distinction, he deviates from the general modern use of these terms, according to which they are terms for the words with which we speak, whereas Aristotle uses them as terms for the things we speak about. Thus synonyms are normally taken as different words that have the same meaning, like "mobile phone" and "cellular phone"; in Aristotle, however, they are two things for which the same word can be used with the same meaning. If for example we call both Socrates and Plato "human", then we use "human" with the same meaning. Thus it is Socrates and Plato that are synonymous when being referred to by the same term "human". The same applies for homonyms, which are things for which the same word can be used in different meanings, like the institution which administers my money and that wooden thing in the park, both of which are called "bank", but with different meanings attached to the same term.

He then continues to present a cross-classification of things that can or cannot be said of a thing (because they are individuals in the one case or universals in the other) and that do or do

¹ Among those who doubt the authorship of Aristotle is Schmitz (1985), whereas others, like Frede (1981), argue, that there is in fact no genuine reason to doubt Aristotle's authorship.

not inhere in other things (thus they are dependent or independent things). This yields a four-fold ontological classification of entities represented in figure 1.²

Fig. 1: The four-fold division of beings in Cat. 2

	predicated of other things	not predicated of other things
inherent in other things	Accidental universals (white, knowledge)	Individual accidents (this white, this knowlege)
not inherent in other things	Substance universals (man, horse)	Individual substances (this man, this horse)

Here we can see some convergence with four-category ontologies recently defended by other authors like Jonathan Lowe or Barry Smith.³ But ontologists are still in dispute about whether all of these four fields are to be accepted in an ontology. Some try to content themselves with one field only, like, most prominently, trope theorists, who acknowledge only individual accidents.⁴ Others accept two of these fields, like David Armstrong who accepts individual substances and accidental universals, but rejects individual accidents and substance universals. Bertrand Russell, in his later years, accepted only universals, and rejected both individual substances and individual accidents.⁵ Given such a dispute in the contemporary debate it would be good to have some arguments for the acceptance of all four fields – but Aristotle is content with giving the twofold dichotomy.

Two paragraphs later, the author presents a list of ten classes of things signified by names or predicates. The author does not use the word “category” in this context, it appears only much later in the text (in Cat. 8, 10b19.21f). But it is probably this list that gives the work its title, because we also know from some of his other writings that he uses to call the entries of this list the “categories”, and indeed it is this list that is traditionally refered to as the list of the categories. Originally, a “category” means “predicate”, but then it became a technical term for “a kind of predicates” (a term that Aristotle also employs for the elements of his list of ten) or even, like in *Metaphysics* V 7, for “a kind of being”.⁶ To coin names for his categories, the

² On the history of such diagramms cf. Angelelli (1967, 12) and von Wachter (2000, 149).

³ Cf., e.g., Lowe (2006), Smith (2005).

⁴ For an overview cf. Macdonald (2000).

⁵ Cf., e.g., Russell (1940, ch. 6).

⁶ For more on the historical development of Aristotle’s theory of categories cf. Bonitz (1853), Kahn (1978) and Oehler (1997). Cf. also Jansen (2005).

author uses nominalised Greek indefinite pronouns or interrogatory pronouns (which would be indiscernible in Aristotle's handwriting and can thus not be distinguished by the evidence of the manuscripts alone), and nominalised verbs:

- *ousia* or substance (elsewhere called by him: "the what it is"),
- the how much,
- the how constituted,
- that what is related to something,
- the where,
- the when,
- the positioning,
- the having,
- the acting,
- the suffering.

It follows a discussion of the first four of these, i.e. of essential, quantitative, relative and qualitative things (chs. 5-8). The remaining six categories are only discussed summarily and elusively in ch. 9. Then follows a series of remarks on various other philosophical concepts that can be seen as unfolding the opening remarks on homonyms. There are chapters on contraries (chs. 10-11), on priority and simultaneity (chs. 12-13), on change (ch. 14) and on having (ch. 15). While all of them are of interest in themselves, it is not obvious, why these discussions have been actually included into this short work.

One way to explain away the heterogeneity of the text is to read chs. 2-9 as also unfolding the topic of homonymity. We know from other works of Aristotle that his tenet is that "being" is not used with the same meaning when said of a substance, a quality, a relation – or, in short, when said of things belonging to different categories (cf., e.g., *Metaphysics* V 7). The categories are, thus, the highest genera, that do not themselves belong as sub-genera to any higher genus like "being" or "existing thing" (*Metaphysics* III 3, 998b22-27), for these labels do not have a uniform meaning. Seen in the light of this, chs. 2-9 can be understood as discussing the homonymity of "being". This feature of homonymity gives also rise to a methodological remark, because the homonymity of being makes it impossible to define categories in terms of genus and specific difference – simply, because there is no higher genus we could refer to. It is, nevertheless, possible to communicate about categories and to distinguish them from each other. This can be done by giving properties common to all things

subsumed under a category, i.e. by characterisation,⁷ and by giving examples. Aristotle uses both of these ways. When presenting his list of ten in ch. 4, he explains the categories “in outline” (*hōs typō*, 1b28) by giving lists of examples, while in the chapters dedicated to the single categories, i.e. chs. 5-9, he discusses such questions like: Are these things ontologically dependent on other things? Do the things in this category allow for opposites or for graduality? Which are their relations to other entities? Answers to questions like this are very much searched for today. In an age of an still increasing flood of data and information, much of our scientific knowledge can only be stored and processed electronically. In order to produce coherent and workable knowledge databases and to make them interoperable with other such systems, it is essential that these databases use compatible sets of basic categories, and Aristotle’s suggestions in *The Categories* are still a good starting point for this endeavour that is now known by the name “applied ontology”. Though not obviously a coherent treatise, all of Aristotle’s topics in *The Categories* are relevant for this new discipline, be it the relation between language and reality (ch. 1), be it the rules on taxonomic trees (ch. 3), or the search for the highest genera, the top level ontology (ch. 2, 4). Which categories are dimensions of change and how are changes to be classified (ch. 14)? Aristotle also discusses formal ontological relations among the entities within these genera: Being in something, being predicated of something (ch. 2), being prior to something (ch. 12), being simultaneous to something (ch. 13), having (ch. 15). At least the relation of priority should be given more emphasis in today’s applied ontology, and so should some of Aristotle’s means to characterise the categories: graduality and opposites are not yet standard topics in applied ontology, let alone the bearing opposites have in normative contexts – a topic Aristotle deals with in ch.11. There is, however, a bunch of questions that are left open by Aristotle. First and foremost, it is not clear, whether the author thinks that his ten-categories-list is exhaustive. In other writings, he seems to suppose its completeness or at least that there are only finitely many categories (*Posterior Analytics* II 22, 83b15-17) – although he mentions on this occasion only eight categories (like in *Metaphysics* V 7). Nor is it clear whether the categories are thought to be distinct. The author seems to have problems with some examples, and he seems to be willing to admit that a species might be of a different category as its genus (see end of ch. 8) – which would indeed be a strange result.⁸ Moreover, the author does not make explicit how his four-fold distinction of kinds of entities in ch. 2 and his list of ten categories in ch. 4 relate with each other. For many of the entries in the list of ten are things that are neither substantial nor

⁷ Cf. Johansson (2004). On characterisation in counterdistinction to definition cf. also Johansson 2006.

⁸ For more on this problem cf. Jansen (2006).

to be said “in another thing”. It is obvious that relations are of this kind: They are ontologically dependent on their relata but they do not inhere in any of their relata. A way out would perhaps be to say that relations inhere in their relata taken collectively. More has also to be said on places and times, and Aristotle has indeed more to say on these topics in his *Physics*. There, Aristotle defines the place of a thing as the inner border of that body which surrounds the thing in question (*Physics* IV 4, 212a6), and time as the number of successive changes (*Physics* IV 11, 219b2) – with change, in turn, being dependent on substances. Thus in these cases, too, there is an intimate connection to the category of substance.

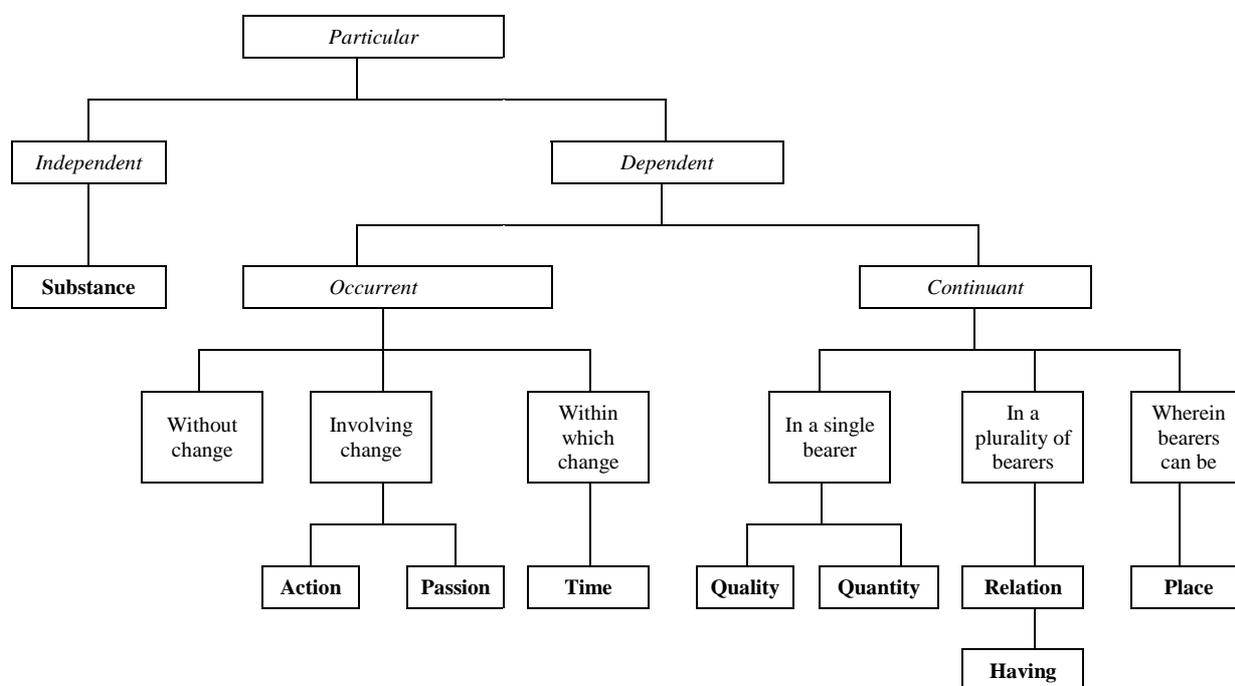
As Aristotle does not much more than to give a few examples for the six latter categories, it is not clear either which criteria hold for belonging to them. Admittedly, there is a chapter on “having” at the end of the book (ch. 15), which, however, seems to deal with many things but not with the category he presented in the list in ch. 4. Some of the categories seem to be superfluous or at least not as primordial as others. Why, for example, do we need a special category of having? Aristotle’s examples of having are: “wearing shoes” or “carrying arms”. Couldn’t we deal with these as relatives among other relatives, instead of creating a new category?

Last but not least: The categories come along as a mere list. They could, however, be more structured. Aristotle himself frequently acknowledges the pride of place of the first category, substance (ch. 5, 2a34-35, 2b3-5, 2b15-17): Substances are the ultimate grounding of all other beings. Quantities and qualities only exist if and only if there are substances having these quantities and qualities, and relations only exist if and only if there are substances that are related to each other in certain ways. It is this feature that, in the end, gives ontology the unity that is required for being a single science, which is in danger in the light of the homonymy of “being”. But as all other categories depend for their existence on substances, or so Aristotle argues, all being is ultimately related to the being of substances (*Metaphysics* IV 2). Thus the first big divide among the entries of Aristotle’s list of ten is that between independent and dependent entities, with individual substances being the only independent entities and all the others being dependent entities.

A second divide within Aristotle’s categories is the distinction between continuants and occurrents: Continuants exist as wholes at every moment at which they exist at all, whereas occurrents need time intervals to unfold as wholes. Substances, quantities, qualities and spaces can exist as wholes at a given moment. Actions, passions and, trivially, time intervals do of course need time intervals for their existence. The latter are thus perdurers or occurrents,

the former are endurants or continuants.⁹ Adding some quibbling to these two big divides, we get the hierarchy of categories represented in figure 2.¹⁰

Fig. 2: A hierarchisation of Aristotle's categories



This tree is not necessarily complete. Further categories can be added to make more explicit the categorical structure of the world. This is, or so it seems to me, in perfect accordance with the project presented in the *Categories*, which seems to be rather a working report on an ongoing research project than something ultimate and completed. Barry Smith, for example, has suggested that Aristotle's list of ten has to be supplemented by categories for non-material things like holes, cavities, and channels.¹¹

Furthermore, we have to mention one very important issue not included in this tree: The top node in this tree is "particular". But things do not only come along as particular tokens, but also as types. There are not only particulars, but also universals. In a way, universals do also divide up into the ten categories, and thus this tree is kind of mirrored under a top node

⁹ Cf. Johnson (1921, 199) for the classical definition of occurrents/continuants and Lewis (1986, 202) for perdurants/endurants.

¹⁰ Previous suggestions to add a structure to Aristotle's list have been brought forward by, e.g., Aquinas (*In octo libros Physicorum Aristotelis expositio, lectio 1, 6*) and Franz Brentano (Brentano 1862; cf. Simons 1992).

¹¹ Smith (2004).

“universal”. But we have, in fact, to tell a more complicated story about the characterisation of the division of the universals into categories. For among universals, there is no splitting up into dependent and independent universals. For all universals are dependent entities, as Aristotle clearly points out: Even the existence of a kind of substances is ontologically dependent on the existence of some instance of this kind (Cat. 5, 2a35-2b6c). There are no independent universals, but only universals of independent things, i.e. universals whose instances are independent. Nor is there a division between continuant and occurrent universals, for no universal has a development in time.¹² There are no universals that are continuants, but only universals of continuants, and universals of occurrents, i.e. universals whose instances are continuants or occurrents, respectively.

Some teachings of the *Categories* remained firmly in the cultural memory of the philosophical schools, like, e.g., the list of the categories itself. This list is still today a philosophical commonplace, though (or maybe: because) it has again and again been criticised by, among others, the Stoics, the Neo-Platonists, Kant and many contemporary ontologists. Other elements of the *Categories* have fallen into neglect and could inspire anew contemporary ontological research. Here I want to mention two things: Aristotle’s non-reductionism and a strand in the *Categories* that I want to dub his “concretism”.

A many contemporary ontologies are reductionist. They try to reduce the numbers of categories of things that ‘really’ exist to a minimum, and the other categories are send into oblivion. Not so Aristotle. He does not see the task of ontology in eliminating as many categories as possible, but in assigning each category its place in the world of all beings. His main tool in doing so is the relation of priority, discussed in ch. 12. The most important kind of priority for ontological purposes is “natural priority” which is defined by Aristotle in terms of ontological dependence: A is naturally prior than B if it is possible that A exists without B, but not that B exists without A. With such a formal relation at hand, it is possible to refrain from reductionism without giving up the intuition that some entities are more basic than others.

The second feature I mentioned was Aristotle’s concretism. Sometimes this term is used to describe the representation of an abstract idea in a concrete term. Here, I use the term to describe Aristotle’s habit to represent concrete things with the help of terms that a derived from the names of abstract things. Cases in question are the two-yards-long-thing, the sick person, father and son. This habit indicates that in many passages of the *Categories* Aristotle is developing an ontology of the concrete rather than of the abstract. Many contemporary

¹² Cf. Johansson (2005), Hennig (forthcoming).

ontologies try to account for the structure of concrete things by dividing them up in a multitude of abstract constituents; most famously trope theory, which considers the world to consist only of abstract particulars. While traces of this account can also be found in the *Categories*, it is not as dominant as one may expect on this background.

Evidence for Aristotle's concretism are also his terms for his "big" categories (i.e. those to which he dedicates an extensive treatment in chs. 5-8), which are terms for concrete things. This is most evident in the case of the *pros ti*, literally the "related-to-something", discussed in ch. 7: Fathers and sons are *pros ti*, not fatherhood or son-hood. The *pros ti* is thus not an abstract relation, but a thing to which a certain noun applies because it is the relatum of such a relation. The only exception to this is to be found in *Metaphysics* V 15, 1021b6-8, which does not only prove the rule but also that Aristotle is aware of the ontological difference between the relatum and the relation. For some categories he has even different terms that allow him to differentiate between *quale* and quality (*poion, poiôtês*), quantum and quantity (*poson, posotês*). The latter is only rarely used by Aristotle; possibly because in his ears it was even more awkward than the terminological coinage *poiôtês*, "quality" (cf. Plato's *Theaetetus*, 182a8). The price Aristotle pays for this is that he uses *poson* both for the concrete quantum and the abstract quantity, thus confounding things he previously took great pain in differentiating in ch. 2. The lesson to be learnt for modern (applied) ontology is that we have two kinds of things to categorise, the concrete things and the abstract things. We have to take account of red things, long things and fathers on the one hand and of red colour, length and fatherhood on the other hand. And we have to spell out the intimate relation between the entities in these two lists.

One more thing that could inspire contemporary ontology hinges on Aristotle's deviant talk about homonyms and synonyms as things instead of terms. For ontology deals with the things in reality, not with terms in language or concepts in cultures.¹³ But without language we would not be able to communicate which were the aspects of reality we want to refer to. Deictic gestures can point to concrete things only, but with the means of language we can refer to properties that we abstract from the concrete things we perceive. Thus we can distinguish as well between the roundness, the redness and the rolling of a ball as between the round, the red and the rolling thing – although it is one and the same ball that is round, red and rolling. The referring function of language is the ontologist's means to distinguish and access the different features of reality. But the topic of ontology are these features; for the ontologist language is an instrument and not an area of research – and thus we have a good

motive to follow Aristotle in talking about the things signified and not about the signifying terms.

Such could be the content of an untimely review. How could such a review conclude? Maybe thus: Aristotle's *Categories* can help to find our way around the internet. The first question of any retrieval technique that is more than a search for strings of characters should be: To which category does the thing belong that I am searching for? Aristotle's little treatise suggest helpful changes in perspective that could benefit contemporary ontology, and especially the steadily growing field of applied ontology. They can give new impulses towards applications in biomedical, legal or business information sciences, but also inspire new work on the old question: What is being?

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¹³ Cf. Smith 2004.

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