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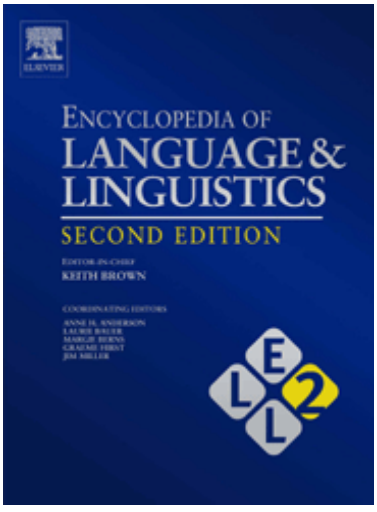

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- *Geschichte der Perser und Araber zur Zeit der Sasaniden* (1879)
- *Zur Grammatik des klassischen Arabisch* (1897)
- *Beiträge und Neue Beiträge zur Semitischen Sprachwissenschaft* (1904–1910).

As a well-respected scholar and colleague, Nöldeke figured prominently among fellow Orientalists like Bergsträsser, Brockelmann, and Lagarde. William Wright, the father of Arabic grammar in the west, sought recognition for and published Nöldeke's noteworthy translation (Nöldeke-Wright, 1884 [1981]). MacLean (1901 [1972]) dedicated his *Dictionary* to Nöldeke. In recent times Shahīd labels him "the equal of his contemporary, Ulrich von Wilamowitz-Möllendorf, the foremost figure in classical philology" (1977: 119). Lipinski (1997) relies upon a number of Nöldeke's unique contributions for his recent Semitic grammar.

See also: Brockelmann, Carl (1868–1956); Semitic Languages.

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Nominalism

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Nominalism is usually characterized in contrast to other two major theoretical alternatives concerning the ontological status of universals. According to this characterization, the nominalist position holds that universals are mere words (e.g., the word 'round'); in contrast, the conceptualist position would identify universals with concepts (e.g., the concept expressed both by the English word 'round' and by the Latin word 'rotundus'), and the realist position would claim universals to be universal things (e.g., the nonmental, nonphysical, abstract Form of Roundness itself).

Both historically and theoretically, there are a number of problems with this simple, indeed, simplistic conception. First, by these standards, no premodern author would qualify as a nominalist since all these authors held that our universal terms owe their universality to the universal concepts they express (thus, on this account all these authors would have to be classified as conceptualists), and no medieval author would count as a realist because they all denied the real existence of Platonic 'abstract entities' (although most medieval authors did posit universals both *in re*, as trope-like individualized forms such as the individual roundness of *this* billiard ball as opposed to the numerically distinct roundness of another one, and *ante rem*, as Divine Ideas, identical with God, who is not an 'abstract entity') (Klima, 2001). Accordingly, this conception leaves in obscurity the genuine theoretical differences of medieval nominalists and realists, who first distinguished themselves under these designations. However, as we shall see, clarifying these genuine theoretical differences, we can have a deeper understanding not only of what a genuinely

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nominalist position was in the late Middle Ages but also what in general a genuinely nominalist position has to consist in, as well as the important conceptual connections such a position has to such broader issues as ontological commitment, abstraction, induction, essentialism, and the possibility of valid scientific generalizations.

Extreme Realism: Plato's Ideal Exemplars

The problem of universals originated with Plato's answer to the question of how universal knowledge (e.g., our knowledge of geometrical theorems) of a potential infinity of individuals is possible. Plato's answer in terms of his theory of Forms involves the idea of regarding individuals of the same kind as copies of an original exemplar or archetype and assuming that our understanding has some direct access to this exemplar. Clearly, if I can read today's news on the printer's printing plates, then I do not have to buy the copies at the newsstands to get my news. Likewise, knowing that the form of all triangles, after which all triangles are modeled, has three angles equal to two right angles, I know that all triangles have the same property. Thus, Plato's answer is obviously a good answer to the question of the possibility of universal knowledge. However, this answer raises more problems than it solves. If the exemplar is not one of the copies, yet it has to be like the copies (given that the copies all have to be like it), then what sort of entity is it? In fact, this is precisely the basis of the most famous argument against Plato's theory, the Third Man (Wedberg, 1978). For if the exemplar has to be of the same sort as its copies, it can be grouped together with its copies into the same kind. However, if for a group of individuals of the same kind there always has to be a common exemplar, and nothing can be its own exemplar, as Plato's theory claims, then there has to be another exemplar for the exemplar and its copies taken together. Since this reasoning can be repeated indefinitely, we have to conclude that for a given set of copies there would have to be an infinity of exemplars, contrary to the theory's explicit claim that there can only be one such exemplar. Therefore, since the theory as stated entails inconsistent claims, it cannot be true in this form.

Moderate Realism or Conceptualism: Aristotle's Universals

Prompted by such and similar inconsistencies, Aristotle famously rejected Plato's Forms and provided a radically different sort of answer to Plato's original question concerning the possibility of universal knowledge. Plato's idea was that this sort of knowledge is possible because of the human soul's prenatal access to the Forms serving as the common exemplars of all sorts of particulars the soul comes to experience in this life and the soul's ability to recollect these Forms and their properties prompted by these experiences. In contrast, Aristotle's idea was that we can have this sort of knowledge from experience in this life. To be sure, the finite number of experiences we can have in this life with individuals of the same sort can never justify universal knowledge claims that cover a potential infinity of such individuals. However, if our cognitive faculties enable us to recognize a common pattern that equally characterizes any possible individual of the same sort, then even this finite number of experiences may enable us to make valid generalizations covering all possible individuals of the same sort. Using the previous analogy, in this case I do not have access to the printer's plates (if there is any such thing at all, which need not be the case if copies can 'self-reproduce,' as in photocopying); I can only collate a number of variously smudged, incomplete newspapers, from which, nevertheless, I am able to extract their common content so that I will know the news any other copy of the same issue may carry even before actually checking it. This is the idea Aristotle worked out in his theories of abstraction and induction.

The Moderate Realism/Conceptualism of Medieval Aristotelians

According to Aristotle and his medieval interpreters, human understanding is characterized by two intellective powers or faculties, namely the active intellect (nous poietikos, *intellectus agens*) and the receptive intellect (nous pathetikos, *intellectus possibilis*). Due to the obscurity of Aristotle's formulations, in the Middle Ages there was much debate about the makeup of these faculties, namely whether they are material or immaterial, and whether they existed as individualized powers of individual human souls or, rather, as separate substances connected to individual human souls to carry out their intellectual operations (pretty much as mainframe computers are connected to their terminals). However, regardless of these differences, there was quite general agreement concerning the function of these intellective powers (whatever they are in themselves) and how they can produce universal knowledge without having to 'look up to' or 'recollect' Platonic Forms. The active intellect has the function of producing simple, universal concepts (i.e., universal representations of individuals) from their singular representations provided by

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the senses. The receptive intellect, on the other hand, receives these universal representations for further processing, combining them into more complex concepts and judgments by means of complexive concepts, the so-called syncategorematic concepts ('syncategoremata'), and using these judgments in reasoning.

Abstraction, Induction, and Essentialism

In the process of abstraction, the active intellect forms a common concept by considering the multitude of experiences of particulars of the same kind, disregarding what is peculiar to each while focusing on what is common to all. The common concept retained in the receptive intellect is a mental representation that represents the individuals it is abstracted from only with respect to what commonly characterizes them all. Accordingly, the same mental representation will naturally represent in the same respect not only those individuals that it is abstracted from but also other individuals of the same kind – that is, individuals that resemble the observed ones precisely in the same respect in which the abstracted concept represents the observed individuals. Therefore, if the receptive intellect forms a judgment with this concept in which the predicate belongs to the particulars that fall under this concept on account of falling under this concept, then it is able to produce a valid scientific generalization by induction – that is, by reasoning in the following way: This observed S was P, and that observed S was P, and so on for all observed S's; therefore, in general, every S is P. Obviously, this inference is valid (not formally, but materially) only if an S is essentially and not merely coincidentally P – that is, if an S is P on account of being an S so that any S is necessarily P, as long as it is an S (and if it is also essentially an S, then it is necessarily an S, and hence also a P, as long as it exists). This is precisely why this inference requires the multitude of experiences, namely to ensure that the observed S's have been P not by mere coincidence but precisely on account of being S's. However, if this inference is valid, then it obviously provides a good answer to Plato's original question (concerning the possibility of universal knowledge) without resorting to Plato's universal Forms.

The Ontological Commitments of Moderate Realism

However, the previous conception may still involve an enormous amount of ontological commitment; admittedly, not to Platonic universal Forms but to individuals of a rather strange sort, the individualized forms of individual substances. If all our common terms are applicable to individual things on account of our common concepts, and we gain these concepts by abstraction from the individualized forms or properties that sort individuals into various kinds, then apparently there are as many individualized forms in an individual substance as there are true common predicates of it. (Yet, this conception need not make individual substances into mere congeries of individualized forms, in the vein of modern trope theories. On this conception, individual substances are the primary units of reality that account for the individuation of individualized forms, and not the other way around (cf. Campbell, 1997; Daily, 1997).) In this moderate realist view, commonly endorsed by medieval authors of the 13th century (e.g., Thomas Aquinas), the world is a world of individuals without 'universal entities,' but it is populated by all sorts of nonsubstantial particulars, serving as the individualized *significata* of our common terms. The universals of this world, then, are the common terms of our language as well as the concepts they express, and the individualized forms as-conceived-in-a-universal-manner by means of these concepts (i.e., as-existing-in-the-mind as the direct objects of these concepts) (Klima, 1999). To be sure, these authors were able to reduce the ontological commitment of their theories by two fundamental semantic strategies: the distinction of several senses of 'being' and the identification of the semantic values of various terms.

On the first strategy, ontological commitment simply becomes ambiguous among different kinds of entities credited with different degrees of reality corresponding to different senses of 'existence' or 'being' (such as being in reality, *esse reale*, and being in the mind, *esse rationis*; cf. Klima, 1993) – a move generally rejected by nominalists.

On the second strategy, however, ontological commitment is reduced even within the same domain of entities. For instance, since two billiard balls A and B are similar in shape, the moderate realist view is apparently committed not only to the individualized roundness of A and the individualized roundness of B but also to the individualized similarity of A to B and to the individualized similarity of B to A. However, several moderate realist authors would argue that nothing prevents us from saying that the roundness of A is the same thing as the similarity of A to B, merely conceived differently, by means of a different concept (Henninger, 1989; Brower, 2001).

Late Medieval and Modern Nominalism

This strategy actually anticipates the more radical reductionist program of William Ockham and his

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14th-century followers, such as John Buridan, Albert of Saxony, Marsilius of Inghen, and in general the late medieval nominalist tradition of the *via moderna*. These nominalist authors agreed with their moderate realist counterparts in positing a world consisting only of individuals and identifying universals with universal terms of written and spoken languages, which owe their universal mode of representation to universal concepts of the human mind, interpreted as singular mental acts representing their singular objects in a universal manner. However, they denied even the 'diminished' existence of universals as universal objects of these mental concepts admitted by moderate realists, and they reduced the number of really distinct categories of singulars to two or three, admitting distinct entities only in the categories of substance, quality, and possibly quantity. (Ockham, for example, identified substance with quantity, whereas Buridan argued against their identification.)

To be sure, using their own eliminative strategy of identifying the semantic values of linguistic items in different linguistic categories, the moderate realists could in principle achieve the same degree of ontological parsimony. However, for them this was to be achieved separately, based on metaphysical considerations. Their semantics demanded positing as many different types of semantic values for their terms as there are different linguistic categories, although it was possible for them to decide on the basis of further metaphysical considerations about the identity or nonidentity of these semantic values. In contrast, the nominalists had the principles of ontological reduction (i.e., eliminating unwanted ontological commitment) 'built into' their semantic principles (Klima, 1999). The reductionist program of the nominalists was devised to show that it is possible to have a sufficiently 'fine-grained' semantics without a complex ontology by 'moving' the requisite distinctions from (a full-fledged or 'diminished') reality to the conceptual structures posited in the mind.

For example, in contrast to the moderate realist interpretation of similarity alluded to previously, in the nominalist approach there is no metaphysical question of whether the relation signified by the term 'similar' is identical with its foundation, for example, the roundness of ball A. The signification of 'similar' is not construed in the same way in the first place. Instead of assuming that in 'A is similar to B' this term signifies A's similarity to B, an extramental entity that may or may not be distinct from the roundness of A, the nominalists would say that this term simply signifies A in relation to B, on account of the relative (connotative) concept whereby we conceive of A in relation to B. Therefore, even if we do have the obvious semantic difference between the absolute term 'round' and the relative term 'similar,' this semantic difference need not be accounted for in terms of a bloated ontology of distinct extralinguistic correlates of these terms because the relevant semantic distinctions can be made with reference to conceptual distinctions in the mind.

Following this nominalist strategy, once we have identified a basic 'vocabulary' of simple concepts that only commit us to entities in the 'permitted' ontological categories, any further apparent ontological commitments of our language can be eliminated by means of nominal definitions, which show how the semantic features of linguistic items carrying such apparent ontological commitment can be accounted for in terms of an implicit conceptual structure that can be explicated by means of the basic vocabulary carrying commitment only to permitted entities. Indeed, this strategy of eliminating ontological commitment by means of nominal definitions explicating this implicit conceptual structure foreshadows the similar strategy of elimination by paraphrase characteristic of all modern nominalistic programs.

Thus, in this approach, and this is the gist of medieval nominalism in general, a sufficiently fine-grained semantics for natural language is achieved by mapping linguistic constructions onto sufficiently rich conceptual structures in a mental language (comparable in its role to the contemporary 'language of thought hypothesis'), which in turn can be mapped onto a parsimoniously construed reality without any loss of semantic distinctiveness.

Modern nominalistic programs, such as the program promulgated by Goodman and Quine (1947), apply the same basic strategy, but without the medievals' appeal to a mental language, by introducing the explicit ontological commitment of a primitive vocabulary and by eliminating any further apparent commitment (e.g., to such 'abstract entities' as numbers) by providing suitable paraphrases of relevant linguistic items (e.g., numerals) in terms of this primitive vocabulary. Indeed, in this program, Platonistic descriptions of language in terms of linguistic types are replaced by a nominalistic syntax treating of tokens, such as singular inscriptions. (In fact, medieval nominalists also formulated their logical theories in terms of token-phrases (Klima, 2004a).) The successful paraphrase then shows that there is no need to assume the existence of the putative entities apparently required by the semantic features of the phrases that appeared to carry commitment to them, so nominalists are entitled to get rid of them by one swoosh of Ockham's razor.

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Nominalism, Antirealism, and Skepticism

Yet, despite customary charges and modern tendencies to the contrary, the 'reductionist' program and the corresponding strategy of medieval nominalism did not necessarily result in metaphysical antirealism, conventionalism, or skepticism. Medieval nominalists typically regarded concepts as naturally representative of a world of individuals presorted into natural kinds and not sorted into these kinds by our concepts and/or linguistic conventions. Thus, they maintained an essentialist metaphysics, and so the scientific knowability of a mind-independent reality, yet without any ontological commitment to (whether subsistent or inherent) universal essences distinct from their individuals. Whether they could consistently do so is a further issue, which bears direct relevance to contemporary considerations concerning ontological commitment and metaphysical essentialism. Plato's problem of the possibility of universal knowledge still remains a problem for nominalists: Once they have rejected the moderate realists' distinct individualized forms, which in the moderate realist conception are precisely the items in reality that serve as the foundation for the abstraction of our universal concepts, the nominalists still have to provide a plausible story about how universal concepts can be abstracted from observed singulars (and hence how they can apply even to previously unobserved singulars), unless they want to give up on the possibility of universal knowledge in the classical sense altogether (Klima, 2004b, 2005).

See also: Concepts; Empiricism; Mentalese; Natural Kind Terms; Objects, Properties, and Functions; Semantic Value; Syncategoremata.

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Nominalization

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Nominalization proper means 'turning something into a noun' (Comrie and Thompson, 1985), and refers both to the corresponding processes or operations and to their results. Nominalization covers a broad range of transpositional phenomena, where transposition, in turn, refers to word-class-changing operations (Haspelmath, 2002). Often applied without clear criteria and definitions, the term has been grossly misused. A clear definition of nominalizations and any serious attempts to approach them cross-linguistically should take into account at the least the following parameters: