From Plato to Frege: Paradigms of Predication in the History of Ideas

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Abstract One of the perennial questions of philosophy concerns the simple statements which say that an object is so and so or that such and such objects are so and so related: simple predicative statements. Do such statements have an ontological basis, and if so, what is that basis? The answer to this question determines—or in any case, is expressive of—a specific fundamental outlook on the world. In the course of the history of Western philosophy, various philosophers have given various answers to the question of predication. This essay presents the main, crucial answers: the paradigms and theories of predication of the Sophists (and of all later radical relativists), of Plato, of Aristotle, of the Aristotelian-minded non-nominalists, of Leibniz, and of Frege. In addition, the essay follows (to some extent) the most influential—*the Aristotelian* or *mereological*—paradigm of predication in its continuity and modification through the many centuries of its reign. However, the essay is not content to adopt the merely historical point of view; it also poses the question of adequacy. Prior to Frege, there was no philosophically adequate theory of predication, and the essay points out the shortcomings (besides aspects that can be viewed as advantages) of each pre-Fregean predication theory considered in it. Frege, in the nineteenth century, brought the philosophy of predication on the right track, but his own theory of predication has its own deficits. The essay ends with the presentation of a theory of predication that the author himself considers adequate.

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In the economy of science and of knowledge in general, simple predicative statements have a fundamental and indispensable role to play. Such statements,

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simple as they are, containing no logical operators, have various forms in natural language. Here is a far-from-complete list of such forms, with each item in the list combined with an illustrative example:

Forms	*Examples*
α Φ*s* [covering also: α *is*]	Kate laugh*s*
α *is* Φ	Kate *is* beautiful
α *is a* Φ	Kate *is an* actress
α Ψ*s* β [covering also: α *is* β]	Kate love*s* George
α *is*+*pr* β	Kate *is in* Boston
α *is* Φ+*pr* β	Kate *is* married *to* George
α *is a* Φ+*pr* β	William *is a* descendant *of* Albert
α *is*+*pr* β *and* γ	The tree *is between* the house *and* the street
[*pr*: some preposition]	

Notwithstanding these many forms, the *general form* of simple predicative statements, which is familiar from first-order predicate logic, is just this:

$$\Phi(\alpha_1, \ldots, \alpha_N)$$

Here, the sequence "α_1, …, α_N" represents the occurrences of the singular terms in a simple predicative statement, all of them without syntactical structure, in the order in which they follow each other in the statement (noting that a singular term may occur more than once in it), and the letter "Φ" represents the rest of the statement: the predicative basis, *devoid of all logical operators*, in which all of the occurrences of singular terms in the statement are embedded; finally, the unifying function of the predicative basis is indicated by the embracing brackets "(" and ")". In order to make matters as simple as possible and to focus on the *basic* problem of predication, I stipulate, in addition to the description of simple predicative statements just given, that the singular terms in *simple* predicative statements are not to refer to linguistic items or abstract entities and that the predicates in simple predicative statements are to be accordingly.

Some simple predicative statements are true. But from the earliest times of philosophy to this day the nature of the truth of true simple predicative statements has been controversial among the philosophers. Does the truth of such statements have ontological import? And if it *has* ontological import, what exactly is that import? These questions are philosophical evergreens, and not accidentally so: their importance can hardly be overestimated. For what is at stake in these questions is nothing less than the basic determination on what it truly amounts to when we claim to have *knowledge of the world* and to speak *the truth about the world*. In this essay, I will look at some of the milestones of a discussion that spans almost 25 centuries: the theories of predication of Plato, Aristotle, the Aristotelian-minded non-nominalists, of Leibniz, and of Frege. At the end of the essay, I will briefly present my own approach.

The positions on predication of the just-mentioned philosophers—different as they are—have at least one thing in common: All of them are opposed to the view that simple predicative statements have no ontological import at all. According to the no-ontological-import view, if a simple predicative statement is true, then its truth is

a product merely of social convention, and hence a product merely of the allocation of power in the relevant group of speakers, since social convention follows social power. This view—the conviction that social convention and social power are the basic truth makers, that basic truth itself is a social construction—was present at the beginning of philosophy in the teachings of the Sophists; it unmistakably shines through the voluntarism of medieval nominalists, and it reappears recognizably in the philosophy of the later Wittgenstein.[1] Put formally, in the most general way, the described view is this:

> *Social conventionalism in predication theory*:
>
> "$\Phi(\alpha_1, \ldots, \alpha_N)$" is true—this amounts, "ontologically," to the following: $<\alpha_1, \ldots, \alpha_N>$ is *purely on the basis of social convention designated* by the general term "Φ."

Hence, for the special case of non-relational predications:

> "$\Phi(\alpha)$" is true—this amounts, "ontologically," to the following: α is *purely on the basis of social convention designated* by the general term "Φ."

If this were true, then the following would have to be true, too:

> "Kate *is a* woman" is true—this amounts, "ontologically," to the following: Kate is *purely on the basis of social convention designated* by the general term "[*is a*] woman."

Now, *this* does not seem to be true; for, while it is true that Kate is a woman, it is hard to believe that Kate is *purely on the basis of social convention* designated by the general term "woman."

On the other hand, I can, to some extent, understand it—psychologically—if social conventionalism in predication theory is adopted as a weapon against classifications that are, one feels, merely socio-conventionally based but masquerade as hard and objective, *ontologically based* truths. One may be prompted by the—hardly rational—implicit belief that the charge "Mere convention!", if advanced against such classifications, can only be truly effective in one's mouth if one has managed to convince oneself of its being true for *all* predications that are generally thought to be true.

A fundamental attitude of protest against established social power—*mere power*, but manifesting itself, the protester believes, *in disguise*: in simple predicative statements that rather persuasively pretend to express incontrovertible *objective facts*—may be something that modern feminist philosophers[2] have in common with the ancient Sophists. The prime target of the Sophists, however, were not simple predicative statements expressing what is generally regarded to be *natural facts*, but simple predicative statements expressing what is generally regarded to be *normative facts*, statements like "This decision is just" or "That deed is courageous," where everyone in the community, on being informed of the relevant circumstances, feels compelled to say, "Yes, that's true." Nevertheless, it is a *total*, *unrestricted* social conventionalism in predication theory which, very plausibly, underlies the famous

[1] In his *Philosophical Investigations*, Wittgenstein, significantly, says the following (*PI*, § 381): "How do I know that this colour is red?—It would be an answer to say: 'I have learnt English'."

[2] For example (and paradigmatically), Judith Butler.

homo-mensura-dictum of the Sophist Protagoras, according to which "man is the measure of all things, of the things that are, that they are, and of the things that are not, that they are not." Applying the *homo-mensura*-dictum to normative statements, one can very well declare that "This decision is just" and "This deed is courageous" are *true* (in the relevant circumstances)—"as everybody says they are"; but one will add that all that is implied by these truths is this: the mentioned decision is *purely on the basis of social convention* designated by the term "just," and the mentioned deed is *purely on the basis of social convention* designated by the term "courageous"; for man—in another word: society, in other words, the social group which is in power—is the measure of all things.

It was this utterly subversive attitude that Plato, following Socrates, was reacting against. His philosophically most significant move in this was to offer a predication theory which is not conventionalistic. Showing full awareness of the problem of predication, Plato came up with the first *explicitly formulated* predication theory ever. Now, Plato, in the course of his career as a philosophical writer, underwent substantial development in his thinking about predication and, in fact, in later phases, became critical of earlier positions of his. However, this did not hinder that the predication theory that is imposingly present in the dialogues from the middle of Plato's career—in the *Symposium*, the *Phaedo*, the *Republic*—had a massive effect on the history of ideas. Very soberly—quite without the poetic splendour of philosophical mythology—it can be formulated in the following way (and Plato himself formulates it that way in *Parm*., 132d1–5):

Plato's (classical) predication theory:

"$\Phi(\alpha)$" is true—this amounts, ontologically, to this: α is sufficiently similar to *the* Φ *itself*.

Applying this theory, we get for example:

"This deed is just" is true—this amounts, ontologically, to the following: this deed is sufficiently similar to *the just itself*.

"Kate is beautiful" is true—this amounts, ontologically, to the following: Kate is sufficiently similar to *the beautiful itself*.

"Kate is a woman" is true—this amounts, ontologically, to the following: Kate is sufficiently similar to *the woman itself*.

Even when divested of its poetic splendour (involving an eternal, unchangeable, transcendent realm of *being itself*, which one cannot help imagining to be awash with "the white light of truth"), Plato's predication theory has fascinating features. One of them is, of course, the introduction of an entirely new order of objects: the *eide*, as Plato called them, the *separate forms*, serving as *paradeigmata*: the just itself, the beautiful itself, the woman itself, and so on. And note, since *the* Φ *itself* is certainly sufficiently similar to *the* Φ *itself* (no matter which general term Φ we are looking at), Plato's predication theory has the following logical consequence:

Platonic self-predication

Φ(the Φ itself).

Thus, the beautiful itself is beautiful, the just itself is just, and the human being itself is a human being. Indeed, since *the* Φ *itself* is not only sufficiently similar to *the* Φ *itself* but is the only object that is maximally similar to it, in other words: the only object that is *identical* to it, the logic of Plato's predication theory requires that *the* Φ *itself* is the unique object that is *maximally* Φ. Thus, the beautiful itself is the unique object that is maximally beautiful, the just itself is the unique object that is maximally just—and all the other beautiful or just objects are beautiful or just only by being more or less remote likenesses of those two *eide*. *And*, note, according to Plato's predication theory, the woman itself is the unique object that is maximally a woman.

Unfortunately, this last consequence, if nothing else, constitutes a *reductio ad absurdum* of Plato's predication theory. If there is such a thing as the woman itself, it is certainly not maximally a woman, nor even a woman. Plato himself noted (through the mouth of one of his *dramatis personae*: Parmenides) that it seems ridiculous to postulate that there are such things as *the hair itself* or *the dirt itself* (cf. *Parm*., 130c7–8). Even if the existence of such *eide* were not ridiculous, it would still be incontrovertibly absurd to suppose, as Plato's predication theory forces one to suppose, that no other dirt is dirt in the degree that *the dirt itself* is dirt.

This is a much more serious problem for Plato's predication theory than the much canvassed so-called Third-Man-Argument, which, in essence, can already be found in Plato's dialogue *Parmenides* and might also be called "the Third-Large-Object-Argument" (see *Parm*. 132a1–b2). It can be put in the following way:

> The visible large objects are large in virtue of participating in a first largeness. But this first largeness is another large object. Hence the first-mentioned large objects and this other large object are large in virtue of participating in a second largeness. But, again, this second largeness is another large object. Hence the first-mentioned large objects, the second-mentioned one and this now apparent third large object are large because they participate in a third largeness. But, again, this third largeness is another large object—and so on *ad infinitum*.

This argument tries to settle Plato's predication theory—not only for the term "large," which is merely an example, but for each and every general term that can be truthfully applied in the empirical world—with an infinite number of different *eide* without a real difference to them. However, the argument fails. According to Plato's predication theory, the visible large objects and the first largeness are indeed large, but not in virtue of participating in a second largeness: The visible large objects are large because they are sufficiently similar to the first largeness, and the first largeness is large—*for the same reason*: it is sufficiently similar to the first largeness: *the large itself*. Thus, there is no need whatsoever to postulate any other largeness than the first largeness.

Plato's predication theory has, however, a very limited scope of plausible applicability. There are some cases where the theory is not obviously inadequate: statements like "Kate is beautiful" and "Kate is just." But the theory is certainly not adequate for the statement "Kate is a woman," nor even the statement "Kate is a human being," nor, for that matter, for the statements "Kate is hungry" and "Kate is pregnant," *although* these latter two statements have *adjectives* standing in predicative position exactly as the statements "Kate is beautiful" and "Kate is just"

have. Moreover, Plato's predication theory is meant for non-relational predications *only* and, in fact, I have formulated it only for non-relational predications. If one tries to extend it to relational predications, inadequacy looms large: Suppose the statement "George loves Kate" is true; but does this mean—in the spirit of Plato—that the ordered pair consisting of George in the first place, and of Kate in the second, is sufficiently similar to *love itself*? Probably not. However, the mystical implications of this Platonizing ontological interpretation of the statement "George loves Kate" will surely not fail to fascinate minds that are receptive for such implications. The same can be said of the mystical implications of the Platonic ontological readings of simple predicative statements that are straightforwardly true *and* involve the term "good" as predicate, or merely the word "is." Given acceptance of the classical Platonic predication theory, it is possible to elevate oneself—as it were—*in one leap* from rather earthly matters right up to the transcendent Godhead itself (though only in ontological theory). Especially in Late Antiquity and the Early Middle Ages there were many minds that very much appreciated this asset of the Platonic predication theory.

Inadequate treatment of relational predications is a deficiency that is shared by all predication theories prior to Frege's. It is a deficiency not only Plato can be criticized for. Nor is the long persistence of it due to Plato's influence. As a matter of fact, its persistence is due to the influence of Aristotle.

In Plato's predication theory, the partners of predication—the ontological subject and the ontological predicate—are external to each other, just as a likeness is external to what it is a likeness of. Moreover, in Plato's predication theory, the ontological predicate is the dominant partner in predication. But, Aristotle adheres to a paradigm of predication that is *fundamentally different* from Plato's, a paradigm that is also rather more down to earth than Plato's. According to Aristotle's paradigm, the ontological subject is the dominant partner in predication, and the ontological predicate is, in predication, in some sense *encompassed* by the ontological subject, comparable to the way in which a part is *encompassed* by what it is a part of. There are significant indications that Plato himself was moving toward some form of the *mereological* or, better, *quasi-mereological paradigm* of predication in the latter part of his philosophical career.[3] But, in the main, the origin of this paradigm must be associated with Aristotle. Mainly on the basis of the wide-spread reception of Aristotle's writings since the beginning of the thirteenth century, the quasi-mereological paradigm of predication became rather influential in Western philosophy. It stayed the standard approach for just about six centuries. Aristotle's predication theory—meaning: the predication theory which, given the data from Aristotle's writings, is the best summative reconstruction of his opinions on predication—is a particular version of the quasi-mereological paradigm (which, indeed, has many versions); it can be put in the following way:

> *Aristotle's predication theory/The quasi-mereological predication theory with particular forms:*
>
> "$\Phi(\alpha)$" is true—this amounts, ontologically, to the following: *the* α*-particular form of being* Φ is in α.

[3] See (Kutschera 1998).

Thus, we have for example:

> "Socrates is wise" is true—this amounts, ontologically, to the following: *the* Socrates-*particular form of being wise* is in Socrates.
>
> "Kate is beautiful" is true—this amounts, ontologically, to the following: *the* Kate-*particular form of being beautiful* is in Kate.
>
> "Kate is a woman" is true—this amounts, ontologically, to the following: *the* Kate-*particular form of being a woman* is in Kate.

There are two *plausible* equivalents for the phrase "the α-particular form of being Φ is in α," each of which, if substituted for that phrase in Aristotle's predication theory, yields a predication theory that is *plausibly* equivalent to Aristotle's predication theory:

> (1) *Plausibly*, "the α-particular form of being Φ *exists*" is true if, and only if, the α-particular form of being Φ is in α.
>
> (2) *Plausibly*, "*the form of being* Φ is in α" is true if, and only if, the α-particular form of being Φ is in α.

But in fact Aristotle *denies* that

> *The quasi-mereological predication theory with universal forms*:
>
> "Φ(α)" is true—this amounts, ontologically, to the following: *the form of being* Φ is in α,

is true. In the *Categories* (*Cat.* 1 a 20–23; see also *Cat.* 3 a 11–13), he declares that *Man*—in other words: the form of being a human being—is, on the one hand, (truthfully) said of a subject, namely, of a particular human being, but that it is, on the other hand, *not* in any subject. This can only be taken to imply that, following Aristotle, the statement "George is a human being" is true, although the form of being a human being is not in George.

Indeed, the quasi-mereological predication theory *with universal forms* can seem to be *rather non-equivalent* to the quasi-mereological predication theory *with particular forms*, to Aristotle's predication theory. After all, the former theory involves universal forms, the latter only particular ones. But scepticism regarding universal forms—or briefly, *universals*—was certainly not Aristotle's problem: He accepted universal forms at least as secondary entities, whereas he did not accept Plato's *eide*, that is, Plato's *separate forms*.[4] His problem was that some universal forms are said of some subjects but are *not in any subject* because they *can exist apart from any subject* they may tentatively be supposed to be in[5]—because, as

[4] For an explicit statement of Aristotle's acceptance of universals in contrast to Plato's separate forms, see *An. Post.* 77 a 5–9; that passage also contains Aristotle's definition of *universal*; it is this: *one which can be truthfully said of many.*

[5] See *Cat.* 1 a 24–25, where Aristotle defines—or rather: gives a partial explication of—*being in a subject*: "*In a subject* I call that which exists in something, but not as a [literal] part, and cannot be separate from that in which it is." [Translation U.M.] Note that the "cannot be separate from" is *not* meant by Aristotle to express a symmetrical relationship: "x cannot be separate from y" *does not entail*, for Aristotle, "y cannot be separate from x." For he understands "x cannot be separate from y" in the sense of "x cannot exist apart from y," and "y cannot be separate from x" in the sense of "y cannot exist apart from x," and of course it *can be*—and sometimes *is*—the case that x cannot exist apart from y, while y can very well exist apart from x.

Aristotle believed at one point, they are *substances*: *universal*—or *second*—*substances* (in contrast to *particular*—or *first*—*substances*).[6] However, in several places of the *Metaphysics*, we also find Aristotle *denying* that universals—*any* universals—are substances.[7] Now, if no universal were a substance for Aristotle *after all*, then it would seem most plausible to assume that, for Aristotle, *any* universal is said (truthfully) of a subject[8] *after all* on the necessary and sufficient basis of its being *in* that subject (though *in it* only in a derivative, analogical sense)—*Man* and *Animal* being no exceptions to this rule.

In any case, vacillations in Aristotle's writings are bound to have contributed, in the centuries after Aristotle and especially in the Middle Ages, to the waning of his distinction between universals that are not substances and are in some subject and universals that are substances and are not in any subject. This distinction—a significant residue of Platonism in Aristotle—became less and less important. The distinction finally dissolved—in favour of *all* universals being just as much in some subject as *all* universals are said of some subject, and in favour of *all* universals being precisely in the subjects of which they are said. A striking documentation of the endpoint of this development can be found in the commentary of Thomas Aquinas on the *Posterior Analytics* of Aristotle. There, Thomas simply connects a universal's being (truthfully) predicated of a subject, being said of a subject, with its *being in* the subject of which it is predicated; no distinction is made in his characterization of predication between substantial and non-substantial universals. Interpreting Aristotle, Thomas says (*In Posteriorum Analyticorum* I, xi, 6): "*Primo*, dicit [Philosophus: Aristotle] quod tunc est universale praedicatum, cum [*cum iterativum*] non solum in quolibet est de quo praedicatur, sed et primo demonstratur inesse ei, de quo praedicatur"—"Firstly, he [the Philosopher] says that a universal is a predicate [of something: α] whenever it is not only in everything of which it is predicated, but is first demonstrated to be in that [i.e., the something: α] of which it is predicated". From this quotation it is apparent that Thomas accepted—under the presumed authority of Aristotle—the *quasi-mereological predication theory with universal forms*, because the quotation can, without much effort, be made to support the following reasoning that yields just that predication theory:

1. The (universal) form of being Φ is (demonstrated to be) in α.
2. Hence according to Thomas ["tunc est universale praedicatum, cum … demonstratur inesse ei, de quo praedicatur"]: the form of being Φ is (truthfully) predicated (said) of α.
3. And hence: "$\Phi(\alpha)$" is true.

1′. "$\Phi(\alpha)$" is true.

2′. Hence: the form of being Φ is (truthfully) predicated (said) of α.

3′. Hence, according to Thomas ["universale … in quolibet est de quo praedicatur"]: the form of being Φ is in α.

[6] That this is the correct diagnosis is strongly suggested by *Cat.* 3 a 7–15. Regarding Aristotle's asserting *separability*—the ability to exist apart from any supposed subject—of substances, see *Met.* Z, 1029 a 27–28. But note that in the same short passage Aristotle also asserts *particularity* of substances.

[7] See *Met.* B 1003 a 8–10; *Met.* Z, 1038 b 8–12, 34–37, 1041 a 3; *Met.* I 1053 b 16–20; *Met.* M 1087 a 2.

[8] Note that for Aristotle *any* universal is said truthfully of *some* subject (because it is by definition truthfully said of *many* subjects; cf. note 4).

Now, as long as one assumes what Aristotle himself *at some time*—for some cases—did not assume, namely,

> that "*the form of being* Φ is in α" is true if, and only if, *the α-particular form of being* Φ is in α [cf. the plausible assumption (2) above],

the quasi-mereological predication theory *with universal forms* will be found to be equivalent to the quasi-mereological predication theory *with particular forms*. This position and, in the first place, the assumption on which it is based *seem plausible without argument*. One can also rather plausibly argue for them in the following way:

> Asserting of a universal form that it is in a subject is merely a non-literal, analogical way of speaking. Such an assertion cannot be literally true, because the universal form is *not* a particular, whereas the subject is one. Only a particular can be literally *in* a particular. What is literally true in those cases where a universal form is truthfully but analogically said to be in a subject can only be this: the *particularization relative to the subject* of the universal form is—literally—*in the subject*.

Thomas and his Aristotelian-minded non-nominalist contemporaries and successors, and, for that matter, Husserl, who much later in the history of ideas once again followed Aristotelian lines in formal ontology, would have found this argument entirely convincing.[9] However, the history of ideas after the Middle Ages took a course that was not in keeping with the argument's Aristotelian spirit. After the Middle Ages, one largely *forgot* the *analogical equivalence* of the quasi-mereological predication theory with universal forms to the quasi-mereological predication theory with particular forms, an equivalence based on the assumption that the phrase "*the form of being* Φ is in α" is merely an analogical *façon de parler*—though no denial of universal forms is involved—and that its ultimate truth-relevant import, what it really says, just amounts to what is expressed by the phrase "*the α-particular form of being* Φ is in α," or by the equivalent phrase "a particularization of the form of being Φ is in α"—these phrases being taken to express *the original*

[9] Regarding Husserl, the following passage from his lecture *Phenomenological Psychology* [*Phänomenologische Psychologie*] of 1925 rather strongly suggests his being ready to uphold the two classical quasi-mereological predication-theories *simultaneously*, the universalistic one *standing*, as it were, *on top of* the particularistic one: "One must not believe that the identity of the *eidos* [which for Husserl merely amounts to the *universal*] is just an exaggerating way of speaking. … [It is not merely the case that] every object has its in-being moment, for example, of redness, and [that] each of the many objects, all of which are red, has its individually own moment, but in sameness. One must see that the sameness is only a correlate of the identity of *something that is general and in common* [eines Allgemeinen], that can, in truth, be intuited as one and the same out of—and as a 'counterpart' of—what is individual. This identical something 'particularizes' itself in many ways and can, in an open infinity, be considered arbitrarily particularized. All of these particularizations are, in virtue of their relationship to what is identical, related to each other, and are accordingly called 'each the same as the other'. In an extended, non-literal way of speaking, the concrete objects themselves are, in virtue of having eidetic particularizations in them, each called 'the same as the other with respect to the red', and are themselves, in a non-literal sense, particularizations of the *something that is general and in common* [des Allgemeinen]." (*Phän. Psych.*, p. 80; translation and italics U.M.)

Aristotelian ontological basis for predication.[10] After the Middle Ages, the quasi-mereological predication theory with universal forms started a life of its own.

During the Renaissance, due to the influx of ancient Platonic texts to Italy after the fall of Constantinople in 1453, there was a significant resurgence of Platonism, broadly conceived. This led to a very strong reaction against the Aristotelianism of the Schools and—combining with forces that emphasized the importance of the individual human being, of the individual human mind—brought about the Enlightenment of the seventeenth century. In the field of ontology, a significant consequence of these revolutions was the following: universals turned into *absolute concepts* for those thinkers who did not deny universals, like the nominalists had always done, but who, Platonically and humanistically inspired, *also* did not want to continue along the old medieval Aristotelian lines. For those thinkers, universals took on an *absoluteness* that traditional Aristotelians had not conceded them; it faded into the background that universals were supposed to be anthropogenic abstractions from particulars. At the same time, those thinkers emphasized the *conceptualness* of universals more strongly than it had ever been: *the affinity of universals to mind*—which, given the new absoluteness accorded to universals, could of course only be their affinity to a *transcendent supermind*. Mind affinity had, to some extent, already been a characteristic of Plato's *eide*. But it was Plotinus who had, in late Antiquity, explicitly conceptualized the *eide* by making them denizens of the *nous*, while maintaining their absoluteness, their ontological independence from particulars. It is not unlikely that the influence of Plotinus (via Marsilio Ficino and Pico della Mirandola) helped bring about the described post-medieval developments.[11]

Remarkably, these developments did not necessarily endanger the acceptance of the quasi-mereological paradigm: of precisely that paradigm of predication that Aristotle, setting himself off from Plato, had inaugurated with his particular version of a quasi-mereological predication theory. The predication theory of Leibniz can

[10] R. E. Allen writes (Allen 1973, p. 367): "If Socrates is just, there is, according to the *Categories*, an instance of justice in him, an instance which is individual, numerically one, and inseparable from Socrates in the sense that it cannot exist apart from him." In other words: If Socrates is just, there is a particularization of the form of being just ("an individual instance of justice") in him—and, clearly, that particularization is the Socrates-particular form of being just. *In general we have*: (*a*) If a particularization of the form of being Φ is in α, then the α-particular form of being Φ is in α (for every particularization of the form of being Φ that is in α is identical with the α-particular form of being Φ). *And we also have the converse*: (*b*) If the α-particular form of being Φ is in α, then a particularization of the form of being Φ is in α (for the α-particular form of being Φ is, if in α, a particularization of the form of being Φ). One can derive both (*a*) and (*b*) on the basis of the following definition: the α-particular form of being Φ $=_{\text{Def}}$ the particularization of the form of being Φ that is in α—*presupposing*, for all cases of α and Φ, that there is no more than one particularization of the form of being Φ that is in α *and* that there is a particularization of the form of being Φ that is in α if *the particularization of the form of being* Φ *that is in* α is in α. One might object that there could be more than one particularization of the form of being red (for example) in a subject: if a table has a red area here and a red area there. But one can stipulate that the phrase "[there is] a particularization of the form of being Φ [that] is in α" is understood to refer, if true, to the (relatively to α) *entire particularization* of the form of being Φ in α.

[11] From the sixteenth to the nineteenth century, the emphasis on the mind-affinity, the *conceptualness* of universals remained present, but, *progressively*, it took on decidedly *human* proportions; for the initially co-present Platonic/Plotinic *absoluteness* of universals progressively disappeared—until it triumphantly re-appeared in the work of Frege.

serve as a striking example of *a syncretistic result* of the post-medieval developments I just sketched. Leibniz was an Enlightened follower of the quasi-mereological paradigm and, in fact, had more sympathies with traditional Aristotelianism than most of the new intellectuals of his time. He did subscribe to the Scholastic slogan of *predicatum inest subjecto*, but he did so in a new manner, reflecting the revolution of ideas which had come about. In Section 8 of the *Discours de Métaphysique*, he very clearly formulates

> *Leibniz's predication theory*:
>
> "$\Phi(\alpha)$" is true—this amounts, ontologically, to the following: *the* Φ*-concept* is in *the* α*-concept*.

Obviously, the predication-making relation of *in-being* (*inesse*) in *Leibniz's* predication theory is neither of the two relations of *in-being* that are invoked in the two previously canvassed quasi-mereological predication theories. In fact, it is not a relation of in-being between the predicate and the subject at all; it is a relation between the predicate-*concept* and the subject-*concept*. This latter relation of in-being between concepts was already at the time of Leibniz not a newly discovered one, it had already been familiar for a long time, and, as a matter of fact, it had not been clearly distinguished from the other two relations of in-being I have already considered.[12] The common form of the statements "homo est animal" and "Socrates est homo" suggests that they both are simple predicative statements and that, therefore, the relation of in-being invoked under a quasi-mereological theory of predication for analyzing "Socrates est homo" must be the same as the relation of in-being invoked for analyzing "homo est animal." But, in fact, "homo est animal" *is not* a simple predicative statement—it is a statement of *essential subsumption*. It is true that "homo est animal" is true in virtue of the *animal*-concept *being in* the *homo*-concept (or in other words: in virtue of the extension of the *homo*-concept being *essentially subsumed* under the extension of the *animal*-concept). But it does not follow from this that the simple predicative statement "Socrates est homo" is, analogously, true in virtue of the *homo*-concept being in the *Socrates*-concept—because "homo est animal" cannot serve as an analogue for "Socrates est homo," since "homo est animal" is, contrary to appearances, *not* a simple predicative statement, but a statement that is different in meaning from "Socrates est homo" even in the very category of meaning.

Thus, Leibniz's predication theory would seem to rest on a simple confusion: the confusion of the in-being of a universal in a particular with the in-being of one concept in another—if one were not reluctant to settle the great man with such a big blunder. And, indeed, there is a more favourable perspective on Leibniz's predication theory than that: Given that the quasi-mereological predication theory *with universal forms* emancipated itself in post-medieval times along the lines I have described (which emphasize both the *absoluteness* and the *conceptualness* of universals) from the quasi-mereological predication theory *with particular forms*, the problem of *how* a universal predicate could be in a particular subject needed a new solution. In this

[12] For the history of in-being between concepts and its relationship to predicative in-being, see (Meixner 1998).

situation, making use of the relation of in-being between concepts must have seemed the only way to go. It was, therefore, not unreasonable—relatively speaking—of Leibniz to interpret "predicatum inest subjecto" as "the predicate-concept is in the subject-concept." What else *could* it mean?

Leibniz dauntlessly accepted the strange consequences of his predication theory: that Alexander once defeats Darius (cf. *Discours de Métaphysique* 8)—this is so because the concept of once defeating Darius is in the concept of Alexander; that Caesar once crosses the Rubicon—this is so because the concept of once crossing the Rubicon is in the concept of Caesar (cf. *Discours de Métaphysique* 13). But if this is true, then those historical truths about Caesar and Alexander which we regard as contingent are not contingent at all but *necessary truths* in the strictest sense. We human beings learn only a posteriori and never completely—and hence with an almost irresistible appearance of contingency—what is, for example, the content of the concept of Caesar (a consistent concept maximally rich in content, a *notio completa*). But, according to Leibniz, that concept cannot be otherwise than it is (could it be otherwise, it would not be the concept of Caesar), and God, according to Leibniz, knows it a priori and completely. Because Caesar once crosses the Rubicon, the concept of once crossing the Rubicon is contained in that concept of Caesar, according to Leibniz's predication theory, hence contained in it with strict necessity, since the relation of in-being between concepts is a relation that obtains with strict necessity whenever it obtains at all.[13] And hence it follows, again according to Leibniz's predication theory, that it is necessary in the strictest sense that Caesar once crosses the Rubicon. Leibniz might have noticed that we can learn to know the concept of Caesar a posteriori only by coming to believe in the truth of simple predicative statements about Caesar—and that for our coming to believe in the truth of these statements *the concept of Caesar* is, in fact, entirely irrelevant. This might have given pause to Leibniz.

Like all predication theories before Frege's, Leibniz's predication theory is not adequate for relational predications, though not as inadequate as other theories under the quasi-mereological paradigm. Notice that relational predications are implicit in the very examples Leibniz chooses: Alexander once defeating Darius, Caesar once crossing the Rubicon. It is *possible* to assimilate relational predications to non-relational ones, along the lines of "Caesar once crosses the Rubicon" being read as "Caesar is a Rubicon-crosser." And while it is surely absurd that an *originally Aristotelian universal form* of being a Rubicon-crosser is *in* Caesar—*because* it is absurd that an *originally Aristotelian* Caesar-*particular form* of being a Rubicon-crosser is *in* Caesar (Caesar carrying that thing around with him, and with it the Rubicon, it would seem)—it is not absurd that *the concept* of being a Rubicon-

[13] For concluding that the concept of once crossing the Rubicon is *necessarily* contained in the concept of Caesar, the reason given is, in fact, not in itself sufficient: "the concept of Caesar" and "the concept of once crossing the Rubicon" must also each refer to one and the same (respective) concept in every possible world (compare the situation regarding the necessity or contingency of true *identity* statements). Leibniz certainly assumed the rigidity of the mentioned designators, but in the case of "the concept of Caesar" rigidity is, as a matter of fact, *doubtful* (the reason being this: if the concept of Caesar is the sum of all concepts that apply to Caesar, then that sum seems to be different in different possible worlds, since, apparently, in different possible worlds different concepts apply to Caesar).

crosser is *in the concept* of Caesar. However, we have seen that, nonetheless, there are reasons for not accepting this as the basis that is *appropriate* for predicating being a Rubicon-crosser of Caesar.

A time came—by and large with the nineteenth century—when the anti-relationalist, substantialist conception of the world began to loosen its grip on the human mind, and *concatenations of non-privileged, non-dominant beings* (such concatenations may be called "states of affairs") instead of *privileged, dominant centres of being* (such centers may be called "substances") began to capture the ontological imagination. However, it took a philosopher-mathematician who had less respect—and probably less knowledge—of the philosophical tradition than Leibniz for progress to be made with regard to relational predications. Frege finally abandoned the quasi-mereological paradigm, and came up with something entirely new. There is no precedent or analogue in the antecedent history of ideas for

Frege's predication theory:

> "$\Phi(\alpha_1, \ldots, \alpha_N)$" is true—this amounts, ontologically, to the following: the functional value of the Φ-concept for $<\alpha_1, \ldots, \alpha_N>$ is *the true*.

The intuitive oddness of this predication theory decreases considerably if one takes into consideration that Frege conceived, in extension of the mathematical concept of a function, of *concepts* as *functions* whose functional values are *the true* or *the false*, and of functions, employing a chemical metaphor, as entities that are in themselves unsaturated, but that are saturated by their functional arguments, thus producing their functional values (see Frege's paper of 1891: "Funktion und Begriff"). Therefore, instead of saying that

> the functional value of the Φ-concept for $<\alpha_1, \ldots, \alpha_N>$ is *the true*,

one can, following Frege, just as well say:

> the saturation of the Φ-concept by $<\alpha_1, \ldots, \alpha_N>$ is *the true*.

This is still somewhat odd, the main reason for this impression being Frege's assumption of a truth object, *the true*, corresponding to which he has an even odder falsity object, *the false*. However, notice the flexibility and ease Frege's predication theory displays in the treatment of relational predications. What is the ontological basis for the fact that the statement "George loves Kate" is true whereas "Kate loves George" is not true? Why, the saturation of the concept of love by the ordered pair that has George first and Kate second is *the true*, whereas the saturation of that same concept by the inversely ordered pair is *the false*.

There is nothing wrong with this—*except*, of course, that it does not make contact with what it actually is that we base our judgments on when we assert that George loves Kate and that Kate does not love George. Frege's predication theory is a mere logical rationalization of predication, *not* an account of predication that tries to honor the actual ontological foundation of our actual human practice of making simple predicative statements intended to be true—something which Aristotle's predication theory, and, indeed, *Plato's*, did try to do, though not with entire success. As far as a mere logical rationalization of predication goes, Frege's theory is true and adequate, just as true and adequate as the nearest equivalent to Frege's theory not employing

the notion of function, which became a standardly used technical tool in twentieth-century model-theoretic logical semantics:

The set-theoretical theory of predication:

"$\Phi(\alpha_1, \ldots, \alpha_N)$" is true—this amounts, ontologically, to the following: $<\alpha_1, \ldots, \alpha_N>$ is an element of the Φ-set.[14]

However, one certainly does not—not explicitly, and not implicitly—apply the set-theoretical theory of predication, or Frege's theory, when determining, for example, the truth of the statement "George loves Kate," nor would be a good idea to apply these theories in the effort to explicate the ontological basis for the truth of "George loves Kate." The same can be said of an account that—restricted to non-relational predications—was in use as a purely logical tool throughout the entire Aristotelian tradition, which I therefore call

The minimal Aristotelian theory of predication:

"$\Phi(\alpha_1, \ldots, \alpha_N)$" is true—this amounts, "ontologically," to the following: the (monadic or relational) Φ-universal is *said* (truthfully) of $<\alpha_1, \ldots, \alpha_N>$.

The three last mentioned theories, though true, have no belief-foundational and no truth-explanatory value. Though they do introduce onto-theoretical entities in order to account for predication—concepts, the truth object, sets, universals—they, in essence, just reformulate the normal expression of predication in technical logico-ontological terms; though they have some ontological content, they, in essence, just logically rationalize predication.[15] They do so in keeping with the truth (though those who do not believe in universals or concepts or sets would deny this). But truth is not enough—as can easily be seen by a glance at what I dub

The redundant "theory" of predication:

"$\Phi(\alpha_1, \ldots, \alpha_N)$" is true—this amounts, "ontologically," to this: $\Phi(\alpha_1, \ldots, \alpha_N)$.

This theory is obviously true (for *simple* predicative statements, as specified at the beginning of the paper), but just as obviously, it is not helpful at all for belief foundation or truth explanation.

But here, finally, follows a theory of predication which, like Frege's, belongs to the functional paradigm of predication. It is recognizably a modification of Frege's theory and preserves the great advantage of that theory: the capturing of relational

[14] Frege's concepts ("Begriffe") are *extensional concepts* (that is: they are identical if, and only if, they have the same extension); therefore they are one-to-one correlates of sets. *Extensionality* is not the only feature of Fregean concepts that fits ill with the normal concept of a concept: another is *lack of mind-affinity* (which in part is a consequence of their extensionality). Thus: Frege's use of the word "concept" ("Begriff")—for what is *really* intended by him—still bears witness to the (above-described) emphasis on the *conceptualness* of universals after the Middle Ages, but it does so on the linguistic surface only.

[15] If one leaves out Leibniz's assumption of the rigidity of the designator "the concept of α" (for example, "the concept of Caesar"; see note 13), then Leibniz's predication theory turns out to be adequate even with respect to our normal modal expectations. But what it offers is merely a true logical rationalization of non-relational predication; it has no belief-foundational value.

predications; but it is, in contrast to Frege's predication theory, helpful for belief foundation and truth explanation. It is the theory I myself favour and defend,

> *The fact-referring functional predication theory*:
>
> "$\Phi(\alpha_1, \ldots, \alpha_N)$" is true—this amounts, ontologically, to the following: *the completion* of the Φ-universal by $<\alpha_1, \ldots, \alpha_N>$ is a *fact*, that is: an *obtaining state of affairs*.

Universals that need, at least in some cases, two entities for completion are called "relations," universals that always need only one entity for completion are called "properties." Thus, we have:

> "Kate is a woman" is true—this amounts, ontologically, to the following: the completion of the woman-property (i.e., the property of being a woman) by Kate is a fact, *or in other words*: Kate *has* the property of being a woman.
>
> "George loves Kate" is true—this amounts, ontologically, to the following: the completion of the love-relation (i.e., the relation of love) by <George, Kate> is a fact, *or in other words*: George *stands* in the relation of love *to* Kate.

Facts—those states of affairs that *obtain*, or *are actualized*—are sometimes, in their factuality, a product purely of social conventions; but normally they are not. In any case, facts that are merely made up of universals and particulars—in a manner that I have here merely hinted at, using the metaphor of *completion*[16]—are the primary objects of human objective cognition, *not* particulars as such and *not* universals as such. To particulars and universals we come in cognition only via states of affairs that involve them, and foremost via *facts* that involve them. Because facts that are merely made up of universals and particulars are the primary objects of human objective cognition, the fact-referring functional predication theory *is helpful* for founding belief in the truth, and for ontologically explaining the truth, of simple predicative statements. We apply this theory *implicitly* when we judge that a simple predicative statement is true, and we do well to apply this theory *explicitly* when we seek to explain, from the ontological point of view, why—that is, on what ontological basis—a simple predicative statement is true.

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[16] The full theory is presented non-metaphorically in Meixner (2006).

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