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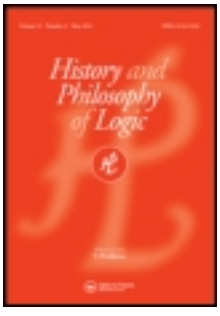

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Existence, Negation, and Abstraction in the Neoplatonic Hierarchy

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Existence, Negation, and Abstraction in the Neoplatonic Hierarchy[1]

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The paper is a study of the logic of existence, negation, and order in the Neoplatonic tradition. The central idea is that Neoplatonists assume a logic in which the existence predicate is a comparative adjective and in which monadic predicates function as scalar adjectives that nest the background order. Various scalar predicate negations are then identifiable with various Neoplatonic negations, including a privative negation appropriate for the lower orders of reality and a hyper-negation appropriate for the higher. Reversion to the One can then be explained as the logical inference of hyper-negations from mundane knowledge. Part I develops the relevant linguistic and logical theory, and Part II defends Wolfson and the scalar interpretation against the more traditional Aristotelian understanding of Whittaker and others of reversion as intensional abstraction.

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PART I. A NEOPLATONIC LOGIC OF EXISTENCE

1. The logical issue defined

In Part I of this paper I sketch a "Neoplatonic" logic of existence and the reasons why I think it should be taken seriously as an alternative to more classical existence theories. It is an exercise in logical theory and lays down without historical justification what I take to be some of the major structural features of a "Neoplatonic" system. As such, it is intended to be appraised as logic independent of history. Part II of the paper is historical, and discusses the one point of controversial interpretation that appears to be required by the theoretical material.

Though Neoplatonic philosophers (roughly Plotinus through Proclus) have little original to contribute to conventional logical theory, they do have a great deal to say about one key logical concept, existence. Moreover, in their view existence is intimately connected with two other important logical ideas, order and negation. These in turn are closely tied to moral concepts. Without argument I would like to lay down four general principles which I think most historians would agree are key features of the Neoplatonic tradition:

1. Existence is a property of comparative degree, and reality is organized into distinct "levels".
2. The lower orders of reality are in some sense levels of non-being, or ontic privation.
3. The higher the level of reality the better it is in a moral or evaluative sense.
4. There is some type of negation appropriate to understanding the higher orders of reality (the *via negativa*).

1 I would like to thank Paul Spade, John Bussanich, Michael Sage, Ann Michelini and the referees of this journal for helpful comments on earlier versions of the paper, and the Charles Phelps Taft Faculty Fund for research support during its preparation.

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These principles are intentionally vague. My purpose in this part of the paper is to discuss their intrinsic plausibility from the perspective of logical theory. What I hope to show is that they can form the basis for a plausible account of the natural logic of the existence predicate.[2]

In a modern idiom what I take these rules to say is that the existence predicate should properly be construed as a comparative adjective within a many-sorted "free logic". We shall see that many of the distinctive Neoplatonic theses about existence follow essentially as semantic corollaries if *is-more-real-than* is seen as falling in the class of comparative adjectives. In the literature the model theory of comparative adjectives and the existence predicate is well developed, as is the syntax and informal semantics of scalar adjectives. In Section 1 I shall draw together previously published material to sketch the background theory I shall be assuming in the later sections.[3] In Section 2 I argue for the linguistic claim that some natural language existence predicates count as comparative adjectives, and in Section 3 I develop a new model theory appropriate to the semantic properties of this class of expression. In Part II I take up historical issues.

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2. The background linguistics of comparative and scalar adjectives

Comparative adjectives

For my purposes here a *comparative adjective* may be characterized semantically as one that is interpreted within a domain by a *pre-ordering* (a relation that is reflexive and transitive). Very often the relation is also *complete* over the field of comparison (the union of the relation's domain and range). An example in English is the expression *happier-than*.

Scalar adjectives

Associated with a comparative adjective are syntactically non-comparative (monadic) scalar *adjectives*. These are semantically related to the comparative in that their ranges of significance, including their extensions, are included in the field of comparison, and their extensions are transitively closed upwardly relative to the comparative ordering (if $F(\leqslant)$ is the field of $\leqslant$, then $\leqslant$ is *closed* in this sense iff, for any x in $F(\leqslant)$ and any y, if $x \leqslant y$, then y is in $F(\leqslant)$). Thus, intuitively *happy* meaningfully applies only to those objects for which *happier-than* comparisons "make sense", and the extension of the former is included in the field of the latter. Also, if *y is happier than x* and *x is happy* are true, then *y is happy* is likewise true.[4]

2 Attempts to use modern logical theory to explicate Neoplatonic doctrine are rare. One exception is R. M. Martin, "On Logical Structure and the Plotinic Cosmos", an attempt to axiomatize Plotinus' ontological hierarchy. I propose here what I hope is a deeper model-theoretic account which incorporates explicit Neoplatonic semantics claims and which yields as metatheorems some of the principles and inferences characteristic of the tradition.

3 The assumptions I am making on the syntax and semantics of comparative adjectives are drawn from Lennart Åqvist, "Predicate Calculi with Adjectives and Nouns". On the semantics of the existence predicate I shall be employing standard material from free logic as developed in John N. Martin, *Elements of Formal Semantics*, §8.1 See also Ermanno Bencivenga, "Free Logics". For the background linguistic theory of scalar adjectives and their various negations, I make extensive use of Laurence R. Horn, *A Natural History of Negation*.

4 In Åqvist's syntax the natural language expression *equal-to-or-happier-than* would be represented by a two-place common count noun **al(happy,thing)** standing for a pre-ordering over the

Often there is a family of such scalar adjectives that exhibit among themselves a strict semantic ordering in that their extensions are nested in a series of progressively larger subsets of the comparative field. Informally, we can think of a comparative adjective as determining a background scale in terms of which ranked objects each have the comparative property to a particular "degree". A particular scalar predicate is distinguished from the others in a family of scalar predicates because it takes for its extension all objects of a certain degree and higher. Let us say a scalar predicate P_i *entails* another P_j iff in all acceptable models the extension of P_i is included in that of P_j. Laurence Horn has advanced a series of "test frames" as guidelines for determining cases of entailment: P_i entails P_j if the following sentences are semantically acceptable,

S is (at least) P_j, *if not (downright)* P_i
S is P_j {*or/and possibly*} *even* P_i
S is P_i, *or at least* P_j
S is not even P_j, {*let alone/much less*} P_i
S is P_j, {*indeed/in fact*} P_i
S is not only P_j, *but* P_i

By these criteria associated with *happier-than* is series of scalars, displayed below in the conventional manner from left to right in order of increasing extensions:

ecstatic, happy, content, OK

One especially rich logical feature of such expressions is that they are associated with four distinct varieties of predicate negation. Let me begin by distinguishing a special family of three negations that form a natural kind. All three consist of applying a negative operator to a predicate to produce a negated predicate that has an extension disjoint from that of the original predicate. Syntactically the three negations differ in that they are increasingly less distributed in syntax and more lexicalized. Semantically their significance ranges are increasingly restricted.

External negation

At one extreme is what is usually called *external* or *sentential negation*. It is expressed in English by sentence modifiers like *It is not true that* and *It is not the case that*. Typically it is grammatically acceptable with almost any declarative sentence, and fully lexicalized negative sentences of this sort are rare. Semantically the significance range of a negated predicate is virtually unrestricted and embraces the entire domain of discourse. For example, regardless of any selectional or semantic restriction on *happy*, the expression *It is not true that x is happy* is meaningful for virtually any value of x. For my purposes it will be sufficient to represent this negation by the predicate prefix **not**.

footnote continued
extension F of the monadic predicate **thing**, and the natural language adjective *happy* would be represented by the one-place common count noun **happy,thing** having as its extension an upwardly closed subset of F.

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Internal negation

The second negation is a variety of what is often called *internal negation*. Syntactically it attaches as an affix directly to the adjective negated and is grammatically acceptable with almost any adjective. In English we often express this negation by the prefix **non**, which I shall use for the purpose here. Its semantic function is to produce a new predicate with the same significance range as the old but with reversed truth and falsity ranges. Thus, *happy* and *non-happy* both meaningfully apply to the same objects, namely those for which *happier-than* comparisons make sense. Anything for which one is true, the other is false. Occasionally a negated predicate of this sort is so useful that language provides a fully lexicalized adjectival synonym, e.g. in American English *non-American* has the synonym *foreigner*.

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Privative negation

Of the three negations the third carries the greatest information content and is accordingly the most lexicalized. For historical reasons discussed in Part II I shall call it *privative negation*. In English we often express this negation by means of the prefix **un**, as I shall do here. Grammatically it too is a negative affix that attaches to adjectives to yield other adjectives. Its distribution is limited being grammatically acceptable only with a restricted set of adjectives, and it is much more likely than the internal form to have a fully lexicalized synonym. Semantically, it is like internal negation but narrower. Like internal negation, it retains the significance range of the predicate negated. However, unlike **non-***P* which has as its extension the entire complement of P's extension within P's significance range, the extension of **un-***P* is a subset of this relative complement at the lower end of the comparative ordering. More precisely, **un-***P* stands for a downwardly closed subset of those objects for which *P* is meaningful but false.

The function of internal negation, then, is to provide a way of referring to the entire set of objects that fall lower in the scale. The function of privative negation is to pick out from these the objects that fall at the opposite end of the scale. This informal account can be elaborated further if we assume in addition that the background scale can be calibrated with a midpoint at 0, and that *P* includes all objects that have a comparative property to degree N or greater. Then, the role of **un-***P* is to stand for the set of objects that have the comparative property to degree −N or lower.

Consider the case of *unhappy*. Its significance range coincides with those of *happy* and *non-happy*. Its extension is transitively closed downwardly, embracing items on the lower end of the happiness scale.

Notice that since the extension of P_i is transitively closed upwardly, that of **un-**P_i is closed downwardly, and since the extension of P_i is a subset of P_{i+1}, that of **un-**P_{i+1} is included in that of **un-**P_i. Thus, the reversed series **un-**P_n, . . ., **un-**P_1 meets all the formal conditions for being a scalar series in its own right. This prediction is confirmed by intuition. The prefix **un** is accordingly often defined for natural language scalars. When it is defined for all the predicates of the positive series, it yields a negative series that meets in its own right the test frame criteria for ranked scalars. The positive "happiness" scalars are especially

rich in internal negations and yield a relatively complete negative series:

unecstatic, *unhappy*, *discontent*.

One feature of this negation, not shared by the varieties previously discussed, is doubtless due to the fact that these narrow categories are more informative. This is the fact that privatively marked predicates often have fully lexicalized (syntactically unmarked) synonyms. Like their marked equivalents, these synonyms also form scalar series in their own right that meet the test frame criteria. For example, *unecstatic* is roughly synonymous with the unmarked term *miserable*, *unhappy* with *sad*, and *discontent* with *low*, and corresponding to the previous negative series there is the fully lexicalized series:

miserable, *sad*, *low*.

Evaluation as part of comparison

Intuitively in making comparisons we are often inclined to say that there is an evaluative or even a moral direction to the underlying ordering. That is, we are often inclined to say that in some way the scale ranks objects from "better" to "worse". There is, moreover, a linguistic test that supports this intuition and that in general indicates the direction of the ordering. Privative negation as a rule is defined only for positive scalars. We see this in two ways. First, double negations for scalars that are already marked privative negations are straightforwardly ungrammatical. In English, for example, *ecstatic* and *happy* intuitively embrace objects at the positive extreme, and *un-unhappy* and *un-unecstatic* are ungrammatical. More telling is the fact that we do not accept as grammatical privative negations for the lexicalized synonyms of other privative negations. Intuitively *ecstatic* and *happy* denote objects at the positive extreme. Their privative negations *unecstatic* and *unhappy*, and their lexicalized synonyms *miserable* and *sad*, embrace objects at the negative end. The further privative negations *unmiserable* and *unsad* of the lexicalized negations are unacceptable.

The most obvious "explanation" for this prohibition is semantic. There seems to be a presupposition built into usage that there is an objective basis to the evaluative direction of scalar orderings. Both privative negations are unacceptable for certain scalars, whether marked or unmarked, because they denote objects that are in some sense objectively negative.

Arguing from language to reality, we can use this lack of symmetry as a criterion for the negative pole of the comparative ordering. In general, given any series of lexicalized scalar adjectives that count as such according to the test frame criteria, this series is said to count as a *positive ordering*, and a predicate of the series is said to embrace objects of a rank *equal to or higher than* those embraced by predicates to its right, if the predicates in the series are open to privative negation.

Horn, who discusses this asymmetry, remarks on one exception to this rule, and this exception itself amounts to a second mark of the positive series. Often the lexicalized positive series terminates with a "midpoint" predicate characterized by the fact that its internal and external negations are coextensive. Such seems to be the role of the neutral predicate *OK* in the happiness series. For a midpoint predicate of a positive series privative negation is undefined. For example, *un-OK* is ungrammatical. Nor is there in general a lexicalized scalar denoting the complement of a midpoint predicate. Indeed, whether marked or

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unmarked, predicates in negative series are never complements of midpoint predicates.

In what follows I shall employ Horns convention for a *full scalar series*, a listing of the positive lexicalized predicates from left to right up to the midpoint predicate, in order of increasing extension, and then a listing of their negative lexicalized scalars in order of decreasing extension. A full series associated with *happier-than* would be:

ecstatic, *happy*, *content*, *OK*, *low*, *sad*, *miserable*.

Hyper-negation

There is yet a forth variety of negation associated with scalars, but one with rather a different function from those already discussed. This negation was first clearly remarked upon by Neoplatonic philosophers and given a prominent place in their metaphysics and theology. It has been studied by modern linguistics since first identified by Jespersen.[5] This is the sense of *not* in which it is synonymous to *not merely* or *not only*. Although it was sometimes expressed in Greek by a special use of the negative alpha prefix, the so-called *alpha-intensivum*, the Neoplatonic tradition came to use for this "negation" the Greek prefix **hyper**. I shall do the same here and call the operation *hyper-negation*. Its function is to form a negative scalar that has as its extension a set higher on the background order than that of the root predicate.

In the following English examples, the negated scalars are essentially equivalent to the predicates paired with them that stand for objects higher in the scale:

I'm not (merely) happy; I'm ecstatic!
It's not (just) hot; it's boiling!

In a similar manner, as we shall see in Part II, Neoplatonists apply to God the expressions *not merely good* and *hyper-good*, and curiously modern English and other European languages retain this sense of *hyper* and its Latin equivalent *super* in neologisms like *hyperactive* and *superconductor*.

According to the pure logic of its semantic rule, a hyper-predicate entails its atomic form: the extension of **hyper-***P* is a subset (of a certain sort) of that of *P*. In practice, however, asserting a wider predicate when a narrower one is true violates the pragmatic *maxim of informativeness*: always be as precise as the situation allows. According to this maxim, one should assert *It is hot* in preference to *It is warm* when both are true. To do otherwise, given standard conventions about precision, would be to suggest, misleadingly, that the more precise characterization is false. Thus, though in a strict sense the two are logically compatible, *S is P* "pragmatically entails" *S is* **not-hyper-***P*. This fact of usage will prove important in Part II in unraveling some scholarly confusions.

3. The linguistic evidence for classifying existence as a scalar

The key idea of this paper is that the four theses of Neoplatonic logic follow from classifying the existence predicate as a comparative adjective with associ-

5 Cf. Otto Jespersen, *The Philosophy of Grammar*, p. 326. Horn discusses this negation throughout his book, especially in Chapters 4 and 6.

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ated scalar predicates. Thesis 1, that existence is a property of comparative degree with associated levels of reality, follows then from the ordering referred to by the existence predicate and the ranked domains of its associated scalars. Thesis 2, that the lower orders of reality are ontic privation, follow from the fact that the ordering relation is presumed to have an objective basis determining its "higher" and "lower" ends and that the privative negation of existential scalars would refer to sets lower on the order. Thesis 3, that the higher levels are better in an evaluative sense, follows from the evaluative content of the underlying comparison. Thesis 4, that there is an negation appropriate for understanding the higher levels of reality, follows from the availability of hyper-negation. But what is the linguistic evidence supporting the basic idea? Is existence expressed by a comparative and does it have associated scalars?

Among those schooled in Russellian logic, both logicians and analytic philosophers, "degrees of reality" is a suspect idea. Existence in standard logic is discrete. Existence is not usually expressed by a predicate, but by the existential quantifier, and if an existence predicate is introduced, it is always eliminable in favor of the existential quantifier. Either something is in the domain of quantification or it is not.

This mind-set extends to the interpretation of classical philosophy. A good example is Gregory Vlastos's claim that Plato cannot be referring to existence when he speaks about degrees of reality:[6]

> As we commonly use "existence", degrees of it [. . .] make no sense whatever; the idea of one individual existing more, or less, than another would be rank absurdity. It would take strong, unambiguous evidence to establish that Plato had any such thought in mind when he spoke of some things being more, or less, real than others.

Vlastos is discussing whether the verb *esti* retains its meaning when converted into a gerundive nominal. The former we translate into English as *to exist* and the latter as *being* or *reality*. The fact that the gerund comes from the verb does not count for Vlastos as "strong, unambiguous evidence" that the two mean the same thing. This reasoning turns on a kind of *modus tollens*. If Plato really says what he seems to, he is committed to degrees of existence or being. But degrees of existence are absurd. Hence Plato cannot mean what he says.

The Neoplatonists, however, made a special point of sinning in exactly the way Vlastos condemns, even to the extent of coining a special technical vocabulary for the purpose. In addition to the ordinary language terms *to exist* (*einai*) and *being* (*to on*), they adopted as their preferred existence terms in technical philosophy the verb *to stand under* (*hyphisthanai*) and the substantive *standing under* (*hypostasis*), which were both relational and transitive.

As an issue in linguistics apart from philosophy, the evidence against the semantic acceptability of a comparative notion of existence in natural languages is weak. Here I shall discuss only English. There is no question that there are contexts in which native speakers naturally use existence terminology in a comparative way. Such is certainly true of *real*, the only well distributed

6 Gregory Vlastos, "Degrees of Reality in Plato", p. 65.

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adjective English possesses corresponding to the verb *to exist*:

The shade of Hercules in Hades became more real as it drank blood.
The inevitability of death is more real for me today than it was yesterday.

Such sentences are grammatical, and in these cases the semantics of *is-more-real-than* seems clearly to call for an ordering relation.

It is less clear, however, that existential comparisons have associated scalars. One has to resort to philosophical jargon to come up with anything like a scalar series. One could propose, for example,

absolute, *existent*, *subsistent*, *unreal*.

For our purposes here, however, the discussion should not restrict itself to *existence* and its direct transformations. There is another rich source of evidence in the concepts that Neoplatonists thought to be closely tied to existence. Indeed, the tradition is notorious for conflating with reality ideas that modern philosophers carefully distinguish: necessity, spirituality, moral goodness, beauty, substantiality, eternality, truth—to list a few.

What is important to the discussion here, however, is the fact that the comparatives that express these ideas are clearly associated with scalar adjectives. Beauty and goodness, for example, are archetypal comparative concepts with associated scalars:

ravishing, *beautiful*, *pretty*, *fair*, *plain*, *homely*, *ugly*, *repulsive*
perfect, *saintly*, *good*, *bad*, *evil*.

So too are down-to-earth notions of the "substantial" or "solid", for which natural language provides a variety of scalar families. For example, for *is-more-solid-than* we have:

adamantine, *hard*, *solid*, *firm*, *tangible*, *soft/weak*, *wispy/evanescent*
strong/firm/solid, *self-supporting*, *weak/rickety/wobbly*, *insecure/dangerous*

This sort of evidence shows that substantiality is plausibly understood as a comparative idea with associated scalar distinctions.

Similarly, to Platonists the idea of the mental or spiritual is closely linked to that of the real. Natural language is rich in comparative and scalar vocabulary for distinguishing "degrees" of "the mental", as in the following series:

riveted, *attentive*, *awake*, *wandering*, *dreamy*, *asleep*
incisive, *lucid*, *cognizant*, *scatter-brained*, *dotty*, *demented*
brilliant, *smart*, *pedestrian*, *dull*, *stupid*.

It is also true of the Platonic tradition that it typically explains existence in terms of a family of ideas which we now recognize as technical concepts in logic: quantification, tense, and modality. The truly real, it says, is "universal". It is (or causes) everything. It is eternal and necessary. These too are paradigmatic scalar concepts, and exhibit a full range of scalar properties.[7] They determine, for example, respective scalar series:

all, *most*, *some*, *rare*, *unheard of*
eternal, *occasional/intermittent*, *none*
necessary, *possible*, *impossible*.

7 So basic is the scalar nature of these notions that Horn builds his analysis of scalars in general upon their properties. See Chapter 4.

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Of course, granting that these various families count as scalar will not in itself show that existence is also scalar unless we can motivate collapsing these ideas into existence. Despite their differences, there is a purely linguistic thread that ties these ideas. This is the fact that all scalar ordering presuppose an objective evaluative ranking. As discussed above, these evaluative rankings are features of the scalars' lexical meanings. If the concepts of value used to rank the various Neoplatonic scalar families were in fact one and the same, this core could serve as the unifying element in the Neoplatonic conception of existence. On this view, there would be a parsimony of value, a single ordering relation and a single field of comparison, underlying the rankings of morality, substantiality, spirituality, universality, eternality and necessity. This conceptual unity opens a way to "axiomatize" Neoplatonic existence in a single thesis about "the univocity of value":

> However different in meaning may be the various scalar families associated with existence, this much they have in common: there is a single concept of value, univocal across them all, ranking a single domain of discourse.

The implications of this view for a scalar treatment of existence are clear. If the entire domain of discourse were to coincide with the field of a unique evaluative ranking, it would be natural to extend it to the existence predicate, to treat the existence predicate as comparative over the field, and to break the field into "sub-domains" on the model of scalars from the related conceptual families.

It is not my intention here to discuss the merits of the Neoplatonic notion of value. But this much I will say. It is not obviously false, and indeed debates on the ambiguity of "the good" have occupied philosophers since Aristotle. Moreover, to the extent that it can be seen to motivate the comparative concept of existence, that notion gains in plausibility. The consistency of the view shows that "degrees of existence" do not contain a straightforward contradiction in the way moderns like Vlastos seem to think. In part as a demonstration that the Neoplatonic notion of existence can be seen as offering a coherent existential logic, I shall complete Part I by developing its points within a formal theory.

4. A comparative existence logic

In this section a first-order logic of existence will be defined which conforms to principles 1–4 and which expresses existence in terms of a two place comparative predicate with associated positive and negative scalar predicates and their negations.

First we define a *scalar language* $\mathcal{L}$ *for comparatives* Γ *and scalars* Σ as consisting of a first-order syntax for variables, predicates of finite degree, the sentential connectives ($\sim, \wedge, \vee, \rightarrow, \leftrightarrow$) and identity ($=$). There is in addition a family $\Gamma = \{C_i\}$ of distinguished two place predicates, and a function Σ on Γ such that $\Sigma(C_i)$ is some series $\{P_j\}$ of monadic atomic predicates (*the scalars associated with* C_i), with the restriction that the values of Σ are pairwise disjoint. In addition to the usual features of first-order syntax (the usual connectives and the universal and existential quantifiers), there are four one-place negation operators on one-place atomic predicates: **not-**, **non-**, **un-** and **hyper-**. The first two are defined for all predicates, but because of their intended semantic

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interpretation the latter two are defined for only the predicates in the various $\{P_j\}$. If U is a family of sets linearly ordered by the subset relation $\subseteq$, then $^\circ$ is called a *mirror operation* on U iff (1) for any $x \in U$, $x^{\circ\circ} = x$, and (2) for any x, $y \in U$, $x \subseteq y$ iff $y^\circ \subseteq x^\circ$. Moreover, if $^\circ$ is a mirroring operation on U, then let e be a *midpoint* of U for $\subseteq$ iff $e^\circ = e$. In order to allow for predicates and predicate negations to have restricted significance ranges, the semantics for predicates will be three-valued. A *model* for $\mathcal{L}$ is any $\langle D, R\rangle$ such that D is a non-empty set, and R meets the following conditions:

1. R maps atomic predicates P^n of degree n into functions from D^n into the set of truth-values $\{T, F, N\}$; $R_{ext}(P^n)$ is defined as $\{s \in D^n: R(P)(s) = T\}$; and $R_{ext}(=)$ is the identity relation on D;
2. if C_i is in Γ then, $R_{ext}(C_i)$ is some pre-ordering $\leqslant$, and *the field of* C_i *for* R is defined as the union of the domain and range of $\leqslant$;
3. if P_j is in $\Sigma(C_i)$, then $R_{ext}(P_j)$ is some $\leqslant$-upwardly closed subset of the field F of C_i for R, i.e. $y \in R_{ext}(P_j)$ and $x \leqslant y$, then $x \in R_{ext}(P_j)$;
4. if $\Sigma(C_i) = \{P_j\}$, then $R_{ext}(P_i) \subseteq R_{ext}(P_{j+1})$;
5. for each C_i in Γ with field F, there is a subset U of the power set $\mathcal{P}(F)$ of F linearly ordered by $\subseteq$ with a preferred mirror operation $^\circ$ with midpoint e, such that for any one-place molecular predicate P_j in $\Sigma(C_i)$ and any $d \in D$, $R(\textbf{un-}P_j)(d) = T$ if $d \in F - (R_{ext}(P_j)^\circ)$, $R(\textbf{un-}P_j) = F$ if $d \in R_{ext}(P_j)^\circ$, and $R(\textbf{un-}P_j)(d) = N$ otherwise; and further if $P_j = P_n$ for $\Sigma(C_i) = \{\ldots, P_n\}$, then $R(\textbf{un-}P_n) = e$;
6. for any one-place molecular predicate **not-**Φ and $d \in D$, $R(\textbf{not-}\Phi)(d) = T$ if $R(\Phi)(d) \in \{F, N\}$, and $R(\textbf{not-}\Phi)(d) = F$ otherwise;
7. for any one-place molecular predicate **non-**Φ and $d \in D$, $R(\textbf{non-}\Phi)(d) = T$ if $R(\Phi)(d) = F$, $R(\textbf{non-}\Phi)(d) = F$ if $R(\Phi)(d) = T$, and $R(\textbf{non-}\Phi)(d) = N$ otherwise; and further if $\Phi = P_n$ for $\Sigma(C_i) = \{\ldots, P_n\}$, then $R(\textbf{non-}\Phi) = R(\textbf{un-}P_n)$;
8. for any molecular predicate **hyper-**P_j and $d \in D$, if P_j is in some $\Sigma(C_i)$ and F is the field of C_i for R, then $R(\textbf{hyper-}P_j)(d) = T$ if $d \in R_{ext}(P_{j-1})$, and $R(\textbf{hyper-}P_j)(d) = F$ if $d \in F - R_{ext}(P_{j-1})$; $R(\textbf{hyper-}P_j)(d) = N$ otherwise.

The *significance range* $R_{SR}(P_j)$ of a predicate P_j in a model $\langle D, R\rangle$ is $\{s \in D^n: R(P_j)(s) \in \{T, F\}\}$. If $\mathcal{L}$ meets the additional condition that in all models $R_{ext}(C_i)$ is complete then $\mathcal{L}$ is said to be *strong*. Let $[x]_\leqslant$ be the $\leqslant$-equivalence class of x, viz. $\{y: x \leqslant y \text{ and } y \leqslant x\}$. Then, $\mathcal{L}$ is said to be *fractionated* if $\mathcal{L}$ is strong and in any $\mathcal{L}$-model, for any $d \in D$, there is some P_j in $\Sigma(C_i)$ such that if $R_{ext}(C_i) = \leqslant$, $[d]_\leqslant = R_{ext}(P_j)$.

For the standard interpretation of sentences, predicates are given bivalent interpretations in a model by identifying the truth-value T with *truth* (the truth-value 1) and the values F and N with *falsity* (the value 0). Then *the formula A is satisfied in the model* $\mathfrak{M}$ (briefly, $\mathfrak{M} \vDash A$) may be defined in the usual recursive manner of bivalent model theory. Similarly, *the set of formulas X entails A in* $\mathcal{L}$ (briefly, $X \vDash_{\mathcal{L}} A$) is defined in the usual manner as a truth-preserving relation across models. I shall assume these standard definitions in what follows. That the resulting semantics captures the relevant properties of comparatives and associated scalars is indicated by the following metatheorems: Let $\mathcal{L}$ be a sortal language such that C_i is in Γ and P_j is in $\Sigma(C_i) = \{\ldots, P_j, \ldots, P_n\}$, for $j \leqslant n$:

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$P_jx \vDash_{\mathcal{L}} P_{j+1}x$
$\{xC_iy,\ P_jy\} \vDash_{\mathcal{L}} P_jx$
$\{xC_iy,\ \textbf{non-}P_jx\} \vDash_{\mathcal{L}} \textbf{non-}P_jy$
$\{xC_iy,\ \textbf{un-}P_jx\} \vDash_{\mathcal{L}} \textbf{un-}P_jy$
$\textbf{not-}P_jx \vDash_{\mathcal{L}} \sim P_jx$
$\sim P_jx \vDash_{\mathcal{L}} \textbf{not-}P_jx$
$\textbf{non-}P_jx \vDash_{\mathcal{L}} \textbf{not-}P_jx$
$\textbf{non-}P_{j+1}x \vDash_{\mathcal{L}} \textbf{non-}P_jx$
$\textbf{un-}P_{j+1}x \vDash_{\mathcal{L}} \textbf{un-}P_jx$
$\{P_jx,\ \textbf{non-}P_jx\}$ and $\{P_jx,\ \textbf{un-}P_jx\}$ are unsatisfiable.
$\textbf{un-}P_jx \vDash_{\mathcal{L}} \textbf{non-}P_jx$
$\exists y(xC_iy \wedge yC_ix) \vDash_{\mathcal{L}} P_jx \vee \textbf{non-}P_jx$
$\textbf{non-}P_nx \vDash_{\mathcal{L}} \textbf{un-}P_nx$
$\exists y(xC_iy \wedge yC_ix) \vDash_{\mathcal{L}} P_nx \vee \textbf{un-}P_nx$
$\textbf{hyper-}P_jx \vDash_{\mathcal{L}} P_jx$

The first and last of these theorems will be important in Part II of the paper. They say in part that the higher a predicate in a scalar series the "more abstract" it is, and that the hyper-negation of a predicate is less abstract than the predicate itself.

A *Neoplatonic existence language* $\mathcal{L}_{NP}$ is defined as a strong scalar language for the comparative set $\Gamma_{NP} = \{\leqslant\}$ and some scalar assignment Σ_{NP} such that $\Sigma_{NP}(\leqslant) = \{\exists!_j\}$. Let $\Phi(x)$ be an open sentence containing a free variable x. Restricted quantifiers are defined in the manner of many-sorted logic, one for each "level of reality": $\forall_j x\Phi(x)$ is $\forall x(\exists!_j x \rightarrow \Phi(x))$ and $\exists_j x\Phi(x)$ is $\exists x(\exists!_j x \wedge \Phi(x))$. The language is a "free logic" because, in general, the inference rule existential generalization fails without an explicit existence assumption:

$\text{not}(P_jx \vDash_{\mathcal{L}_{NP}} \exists_k xP_jx)$, and $\{P_jx,\ \exists!_k x\} \vDash_{\mathcal{L}_{NP}} \exists_k xP_jx$

The four Neoplatonic principles are satisfied:

1. Existence is a property of comparative degree, and reality is organized into distinct "levels:"

   $\vDash_{\mathcal{L}_{NP}} \exists y(x = y) \leftrightarrow \exists z(x \leqslant z \vee z \leqslant x)$;
   $\vDash_{\mathcal{L}_{NP}} \exists!_j x \leftrightarrow \exists_j y(y = x)$;
   $\exists!_j x \vDash_{\mathcal{L}_{NP}} \exists!_{j+1} x$; and
   $\exists!_j x \vDash_{\mathcal{L}_{NP}} \exists x(x = y)$.

2. The lower orders of reality are in some sense levels of non-being, or ontic privation:

   $\{\exists!_j x,\ \textbf{un-}\exists!_j y\} \vDash_{\mathcal{L}} x \leqslant y$, and $\vDash_{\mathcal{L}_{NP}} \forall_j x \forall_{j+i} y((\textbf{un-}\exists!_j x \wedge \textbf{un-}\exists!_{j+1} y) \rightarrow y \leqslant x)$.

3. The higher the level of reality the better it is:

   $$\{\exists!_j x,\ \exists!_{j+1} y\} \vDash_{\mathcal{L}_{NP}} x \leqslant y.$$

4. There is some type of negation appropriate to understanding the higher orders of reality:

   $$\text{If } \mathfrak{M} \vDash_{\mathcal{L}_{NP}} x \leqslant y \text{ then for some j, } \mathfrak{M} \vDash_{\mathcal{L}_{NP}} \exists!_j y \wedge \textbf{hyper-}\exists!_j x.$$

If in addition the language is fractionated, then every degree of existence is expressible by a distinct existence predicate.

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Part II. Neoplatonic Abstraction as Negation

5. The interpretive problem

In Part II of this paper I shall investigate a conceptual problem posed for the version of Neoplatonic Logic detailed in Part I. The discussion is historical, but it also concerns the analysis of logical ideas, and the interpretations I offer are motivated by the Neoplatonic logic developed in Part I. Accordingly, I shall make free use of ideas from contemporary metalogic to make clear what I take the issues to be. In doing so I shall try to distinguish textual from conceptual issues, but in the end my goals are both philosophical and historical.

All scholars are agreed that Plotinus and other major Neoplatonists refer to the process whereby the mind comes to know the One by the Greek term *aphairesis*, usually translated as *taking away* or *abstraction*. In passages typical of literally dozens, Plotinus says the mind arrives at a higher understanding by abstracting away from Being (*to einai*; II.8.10.31; VI.8.8.13–21), by abstracting away from "everything" (*ta panta*; I.6.8.25; VI.7.35.7; V.3.17.39; V.5.13.12), by abstracting away from "the rest" (*ta alla*; VI.9.9.51–52), or simply by abstracting *tout court* (VI.7.36.6–8; VI.8.11.35).[8] Such language is abundant, and the importance of aphairesis in reversion is not an issue. What is disputed is its meaning.

A long line of interpreters, perhaps most prominently John Whittaker, understands aphairesis to be Aristotelian conceptual abstraction. It is supposed to be a kind of revelation, an exposing of something already there. Raoul Mortley, for example, describes it as "stripping off concepts."[9] He elaborates what he means as follows:[10]

> . . . the method of abstraction which is borrowed from the mathematicians, seeks to undo the process of accumulation by removing the accretions until the continuous is found.
> This is the germ of the great chain of being of the Neoplatonists: it looks like this:
>
> A
>
> A B
>
> A B C
>
> A B C D
>
> The puzzle is to find the continuity, and with that you have the essence, namely A, the most hidden if all characteristics, and which is the One in the case of the Neoplatonists, and God in the case of the Fathers.

The ordinary language meaning of "to abstract" (*aphairein*, *abstrahere*) is that of taking (*airein*) or dragging (*trahere*) something away (*apo*, *ab*). The term is also use for arithmetical subtraction. For my purposes here I would like to

8 For a discussion of the role of aphairesis in Plotinus and its various equivalents see John Bussanich, *The One and Its Relation to Intellect in Plotinus*, pp. 113–15, 152.

9 See Whittaker, "Neopythagoreanism and Negative Theology", and Raoul Mortley, "Negative Theology in Plotinus".

10 See Mortley, "The Fundamentals of the Via Negativa", p. 438. See also the discussion in Mortley, *From Word to Silence*, *passim*.

highlight two features of the term's meaning. The first is what may be called *negation*. Any sort of "taking away" has a grammatical object. There is always a something that is lost or removed. In the process of removal there is something that is no longer part of the object. It is in this sense "negated". A second connotation of "taking away" is a suggestion of *conservation*. In most processes of removal, though perhaps not all, there is a core or remnant that is left behind. This is the non-negated part of the original that is conserved. Aphairesis in its non-technical sense may be summed up in terms of these two aspects. It is a process that applies to a whole. It removes or "negates" part of that whole, and it usually, but not always, "conserves" some part of the original.

The more specialized usage employed by Mortley's commentary derives from Aristotle. Though the Stagirite uses aphairesis without definition in its ordinary language sense, he employs the term in special contexts, and this selective use gives rise to a technical use in later philosophers. In some passages aphairesis is used by Aristotle for what we would call today concept formation. In discussing examples, he speaks of it as a process that is applied to what we may call sensible objects or concepts, and that results in what we may call ideas, concepts, or terms. This process of subtraction itself consists of taking away qualities, and Aristotle intends that some of the original qualities remain after others have been removed.

In the *Prior Analytics* ($79^{a}6$–10, $81^{b}1$–10), for example, he characterizes mathematical ideas as those formed by "taking away" sensible properties from things. In the *Metaphysics* ($1039^{a}1$) he speaks of arriving at an idea of matter by "taking away" that of form. He arrives at the idea of matter by removing length and breath ($1029^{a}16$). In the *De Anima* ($432^{a}3$) he speaks more broadly of knowledge and perception as proceeding by "taking away" aspects of sensible objects.

This use of aphairesis is not very theoretical. Examples are rare, and it is clear from their contexts that Aristotle is not being very precise. He does not define what he means by idea or quality, nor does he make any effort to explain what it is to "take them away". Even in the more theoretical context of the *De Anima* these notions remain unexplained.[11]

Though the germs of the mediaeval notion of abstraction are present in

11 This sense of conceptual subtraction is used by Aristotle to determine the subordination of species to genus: a genus is prior to a species if removing parts of the definition of the species yields that of the genus. This rough sense of abstraction is to be distinguished from a more technical usage in which Aristotle refers to mathematical entities as the product of abstraction in a sense that allows them to fit into his ontology. See Jonathan Lear, "Aristotle's Philosophy of Mathematics", and John J. Cleary, "On the Terminology of 'Abstraction' in Aristotle". This second sense of taking way presupposes the first. Cleary (pp. 22–23) makes this priority clear by arguing (essentially) that for Aristotle the following are equivalent:

An object falling under species predicate G is the proper object of a species predicate F.
Something is an F *qua* G.
By applying the process of subtraction to an F one arrives at a G.
G is the least species predicate such that all non-Fs are non-Gs.
For any species predicate $H < G$, $(\exists x)(Hx \wedge \sim Fx)$, and for any $H \geq G$, $(\forall x)(Fx \rightarrow Hx)$.

It is in this sense, Cleary suggests, that an object may be the proper object of a mathematical predicate and be the product of abstraction. The analysis shows clearly how the priority relation $<$ that is established by abstraction in its first sense is presupposed in the explanation of abstraction in its second sense. Though Cleary calls the second sense "technical", he is careful to point out that Aristotle's remarks explaining it are "brief and casual" (p. 22) and that Aristotle does not have "either a psychological or an epistemological theory of abstraction in the sense of a fully elaborated theory of knowledge" (p. 36).

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Aristotle, at the time of Boethius the term acquires a technical meaning deriving from its role in explaining how universals are apprehended by the soul. In his *Second Commentary on Porphyry's Isasoge*, an influential text available in the West throughout the Middle Ages, the process is clearly specified.[12] The starting points of the process are corporeal and sensible things (*corporales*, *sensibiles*). The finished result is an understanding of a genus (*genus*), nature (*natura*), or form (*forma*), and the process is said to be one of division (*divisio*) and abstraction (*abstractio*) that consists of removing properties (*proprietates*). In the context of the discussion, moreover, these terms are used in a precise and careful manner. By the fifth century AD abstraction has thus become a technical concept among Aristotelian authors.

For my purposes it will help to adopt the following generic account of "Aristotelian" abstraction. The process applies to an intension, or the definition of a species. It consists of negating from the definition the defining property of the species, and conserving that part of definition that applies to the genus. The definition of genus stands then to that of species in a relation of part to whole. Viewed as operating on definitions, abstraction has an intensional output that is literally "contained" in the input. Algebraically, there is a "join" operation $\vee$ of intensional "combination" that operates on genus intensions and differences to yield species intensions: $D \vee G = S$. Intensional "subtraction" (*à la* Mortley) and a "part-whole" relation are then definable in the usual algebraic way: $X - Y$ is that Z such that $Y \vee Z = X$, and $X \leqslant Y$ iff $\exists Z$ such that $X \vee Z = Y$. Thus, given that $D \vee G = S$, it follows that $S - D = G$ and $G \leqslant S$.

Moreover, although the definitional intension of the genus is literally part of that of the species, the species as a set of objects in the world is a subset of the genus viewed as a set. Algebraically, if I is the set of intensions and E the set of extensions, there is an antitone mapping * from the intensional structure $\langle I, \vee \rangle$ to the extensional (set theoretic) structure $\langle E, \cap \rangle$ such that $(X \vee Y)^* = X^* \cap Y^*$. Thus, $G \leqslant S$ only if $S^* \subseteq G^*$. (Proof: $G \leqslant S$ only if, for some D, $D \vee G = S$ only if $(D \vee G)^* = S^*$ only if $D^* \cap G^* = S^*$ only if $S^* \subseteq G^*$.) It is this implication that underlies the usage in modern mathematics in which abstractness is viewed as a property of sets. A set A is said to be *more abstract* than a set B iff there is a set C such that B is defined as $A \cap C$. Hence if A is more abstract than B then $B \subseteq A$. Conversely, if $B \subseteq A$, we tend to view A as more abstract than B regardless of the role B plays in the definition of A.

According to the interpretation of Mortley and Whittaker, the One is arrived at by Aristotelian abstraction. Viewed intensionally, the language appropriate for describing the One is arrived at by removing from an intension some definitional constraints. Viewed extensionally, the predicates so defined are increasingly general. Having fewer defining constraints they apply to progressively larger classes. According to the Neoplatonic logic sketched in Part I, however, language describing the One should be less abstract, rather than more so. Scalar predicates become increasingly abstract (in the extensional sense) as their rank in the scalar series increases. In particular, if existence predicates are correctly viewed as scalar, then the higher the order of "reality" the less abstract is its existence predicate. In addition, hyper-negation is used to convert a predicate for a lower order into one for a higher. These predicates too are

12 See the discussion and translation in Paul Vincent Spade, "Boethius: On Universals", Chapter 23, *A Survey of Mediaeval Philosophy*.

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increasingly more concrete, not less so.[13] There is therefore a clash between the interpretive model offered in Part I and the Aristotelian reading.

This contradiction is genuine. Either Aristotelian abstraction is not what is meant by the Neoplatonists, or the model theory for comparative scalar existence predicates is not a fair interpretation of Neoplatonic metaphysics. *Prima facie* the scalar reading has a major argument in its favor, and that is its striking power to entail Neoplatonic existence "theorems". Its apparent success at "axiomatizing" Neoplatonism supports its claim to capture at least part of the tradition's core. In the remainder of the paper I shall explore this success in more detail. First I shall attempt to refute the main counter-argument in favor of the Aristotelian reading. It turns on the correct way to read Aristotelian language when used by Plotinus and his followers. My contention will be that the concepts take on new meanings outside in the context of Aristotle's metaphysics. Secondly, I shall discuss some key Neoplatonic texts on negation, in an attempt to show in detail how they draw the same distinctions among negations that are made in scalar theory.

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6. Aristotelian language in Plotinus: *Enneads* VI.2.20

To illustrate the grip the Aristotelian model has on Neoplatonic interpretation, let me cite the example of E. R. Dodds who gives what is clearly an Aristotelian reading to Proclus' account of reversion. Proclus regularly describes the higher nodes of the hierarchy as being relatively more "whole" (*holikōteron*). Dodds sometimes translates *whole* in such passages by the Aristotelian term *universal*, and describes the lower parts of the hierarchy as relatively more "specific". In the commentary accompanying his translation Dodds says that, in general, "generic" qualities rank higher in the ontological order. Here in using *generic* Dodds is referring to Aristotelian intensions and extensions. He says:[14]

> . . . the generic qualities come from a higher source than the specific: in the Procline pyramid of abstraction ὁλικώτερον is synonymous with αἰτιώτερον, and the potency of a Form varies directly as its extension, inversely as its intension.

This reading ranks reality according to how abstract it is in the set-theoretic sense, with the One as the most abstract of all. As an example of what Proclus

13 These results may be stated as a metatheorem:

$$\text{for any model } \langle D, R\rangle \text{ of } \mathcal{L}_{NP},\ R_{ext}(\exists^{!}_{j}) \subseteq R_{ext}(\exists^{!}_{j+1}) \text{ and } R_{ext}(\textbf{hyper-}\exists^{!}_{j}) \subseteq R_{ext}(\exists^{!}_{j}).$$

14 See his translations of Propositions 70–72, and the commentary p. 238. E. R. Dodds, *Proclus, The Elements of Theology*. Dodds is not the only commentator to slip into genus–species language in explaining the Neoplatonic hierarchy. In discussing a passage of Proclus (from his commentary on the *Timaeus*), one in which Proclus compares the Monad of the Pythagoreans to a super genus, Festugière ("Le Dieu Inconnu et la Gnose", p. 30) explains the idea as if he thinks it makes perfect sense as a development of Plotinus. In another example, Rist explains Plotinus' hierarchy in terms of genus–species when he suggests that Intellect qua intelligible matter is prior to forms, just as Aristotle's intelligible matter qua genus is prior to species. J. M. Rist, "The Indefinite Dyad and Intelligible Matter in Plotinus". In a similar manner A. C. Lloyd (*The Anatomy of Neoplatonism*) argues that Platonic division is a model for the Neoplatonic hierarchy and appears to identify the higher nodes of the tree with the more generic, the more abstract, and that having the greater extension (pp. 120 and 113). With the exception of the brief remarks on division, however, most of what Lloyd says about *P*-predicates and quasi-genera conforms very well to the sortal interpretation. See note 16.

means by "priority", Dodds cites not the monadic scalars determined by a background causal or ontic ordering, but the priority of the Aristotelian genus "animal" to the species "man".

Moreover, Dodds says that this priority is not just one of occupying a higher position in the hierarchy of being and hence of having more causes. It is also a temporal priority inasmuch as the genus emerges in the embryo prior to the species. As we shall see, this too is an Aristotelian idea. Aristotle thinks that embryonic development recapitulates ontic order.

In using Aristotelian ideas, Proclus is following Plotinus, who is himself notoriously eclectic, and frequently employs genus–species and other technical Aristotelian language to explain himself. As Dodds illustrates there is a strong temptation to read the Aristotelian language in its Aristotelian sense. The point I want to make here is that doing so too literally leads to errors. Neoplatonic metaphysics is quite different from Aristotle's, and the Aristotelian terms take on new meanings in its context. This is especially true of *genus–species*, and associated ideas of abstraction. Rather than attempting to review the entire Neoplatonic corpus to prove my point, my method here will be to focus on a key text of Plotinus, *Enneads* VI.2.20. It is here that the Alexandrian offers what is probably his fullest attempt to explain himself in Aristotelian terms. By explaining how I think the terms should be read here, I hope to give a general indication of how he and his followers adapt Aristotelian terminology to describe their essentially relational ideas.[15]

Genus-species and the whole–part relation (1–8, 13, 15, 18–19, 25)

We know from passages elsewhere that Plotinus considers the identification of the One with a highest genus and rejects the idea (VI.2.9–11). Thus, though he thinks knowledge of the One is arrived at by abstraction, this is not so because the One is "generic". Plotinus does, however, attributes a genus–species hierarchy to the level of Being (VI.2.2.1–14). He singles out the five highest genera topping the tree of subsidiary species (VI.2.7–8). These "species" or "forms" are, however, rather different from their Aristotelian counterparts, because, he says, the five are ultimately identical with Being (VI.2.2). He argues further that the Aristotelian doctrine of specific differentiation, and the process of definition by genus and differentia, is quite literally incoherent (VI.1.10–12). Thus, whatever genera are for Plotinus, they are not intensions constructed of accumulated differentiae, because these notions he thinks make no sense.

What then are they? In these texts from VI.2.20 he explains the genus–species relation by appeal to a coeval principle, the whole–part (*holos–meros*) relation. He contrasts Nous as grasping "in general" to its specific knowledge, and he characterizes the specific in terms of *species* and *part* (here and below I am using Armstrong's translation, with his glosses in square brackets):

15 Plotinus uses genus–species terminology throughout Book VI. Much of what I say is consistent with A. C. Lloyd, "Neoplatonic Logic and Aristotelian Logic, I and II". I am, however, taking a more extreme position than that which Lloyd takes in these papers and seek a non-Aristotelian logic in Plotinus. For example, unlike Lloyd I think it is mistaken to use intension–extension vocabulary to explain Plotinus' understanding of genus–species. Much of what I say in Part II is to show in detail why I agree with Armstrong's passing comment on this section that it is wrong to explicate the whole–part relation in terms of sets. A. H. Armstrong, "Introductory Note", *Plotinus*, vol VI (Loeb edition), p. 7.

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> Let us then apprehend one Intellect, which in no way applies itself to partial things (τῶν ἐν μέρει) and is not active about anything in particular, so that it may not become a particular intellect (τις νοῦς), like the knowledge before the [specific] partial form (πρὸ τῶν ἐν μέρει εἰδῶν) [of knowledge] and the knowledge in specific form (ἡ ἐν εἴδει ἐπιστήμη) before the parts in it (πρὸ τῶν ἐν αὐτῇ μερῶν) (1–5).

Even without inquiring too closely into the meaning of part and whole here, it is possible to see that the inappropriateness of the reading (*à la* Mortley) of "species" as an intension or a conglomerate of differentiae, and of contrasting it with "genus" understood as the product of subtracting some of these. The whole contains the part, not the other way around. But in the text part is identified with species, the opposite of what one would expect on the intensional reading. Indeed, as we shall see shortly, the higher the "form" on the Neoplatonic tree, the narrower is its extension.

Here and elsewhere Plotinus does not "define" what he means by whole–part. Today we would probably say the concept functions as an ontological primitive, as it clearly does in Proclus' more "axiomatic" exposition. It may well be the case that Plotinus uses the concept because of its vagueness. But to say it is unclear is not to say it is without content. On the contrary, from the perspective of the scalar interpretation I am proposing, the employing at the core of his theory of a relational concept says a great deal. From its purely relational character, we learn that reality as a whole is governed by a binary ordering. It is, moreover, just such an ordering that can provide the basis for subsequent scalar concepts.

Causation (21–29)

Plotinus goes on to say that the actuality of the genus is the cause (*aitios*) of the actuality of the species:

> But certainly, if the [intellects] in [specific] form (οἱ ἐν εἴδει) are going to exist, the activity (ἐνεργεία) proceeding [from universal Intellect] must be the cause (αἰτίαν) (28–29).

I would like to suggest that here causation functions as an alternative characterization of the whole–part relation just discussed. Unlike the latter, however, which Plotinus leaves unanalysed, causation conforms to a basic principle that amounts to a partial or implicit definition. This is the Platonic and Aristotelian principle that what is present in the effect (the species) is already present to a greater degree in the cause (the genus).

The challenge is to avoid reading this rule as describing the Aristotelian relay race in which the cause passes the baton (properties) to the effect, or at least not without adapting it to Plotinus' metaphysics. Finding an alternative metaphysical vocabulary that expresses Plotinus' intension but which does not use Aristotelian property talk is one of the virtues of the scalar interpretation. In fact, it is possible to see the scalar theory as entailing as a theorem a Platonic version of the causal principle.

In general, the role of scalar predicates is to indicate the various degrees to which items in the relevant significance range possess a comparative property.

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This property is present to some degree in all items in the ordering, but is present to a greater degree in items higher in the ordering. Let us apply this framework to causation.

It is clear that the causal whole–part relation is intended to be an ordering of everything that is. That is, it is ontologically complete. In the language of modern logic, the relation orders the entire domain of existence. Its function is to serve as the referent or extension of a binary predicate that would be, in effect, a predicate of comparative existence. By adding a family of monadic scalar predicates, this domain may be nested into ranks or "degrees of existence".

Let us assume such a global causal ordering and a derivative scalar nesting into scalar ranks. It follows that whatever background property the causal order captures, it is present in the cause of rank N to a higher degree than it is in the effect of rank N + 1. Moreover, if the language is rich enough in expressive capacity (if it is "fractionated" in the language of Part I), there is a distinct scalar predicate for each rank and this has as its extension the items falling at that rank or above. Predicated of an object, it possesses the background comparative property to at least a given degree.

Apart from their "reality", Plotinus does not characterize in this text the monadic properties that are transmitted down the ontic scale. We know from elsewhere, however, that he often does so in moral or evaluative terms, like goodness and beauty. Now, in a scalar framework the background ordering is characteristically evaluative. The framework, as it were, mandates that the higher an item in the series the "better" it is. Indeed, one way to put this point is that it is an assumption of a scalar theory that, whatever the proper analysis of the background ordering, this ordering must be conceptually evaluative. The scalar framework makes it natural, even expected, that the scalars be unpacked in moral terms. The distinct scalar predicates accordingly carry as part of their meaning a connotation of "goodness" to a specific degree. From the assumption that causation determines a scalar ordering, we may thus draw as a consequence the Neoplatonic principle that the "goodness" present in the effect is present to a greater degree in any cause of superior rank.[16]

16 More precisely, the causal principle may be stated as metatheorems within the theory of Part I:

In $\mathscr{L}_{\mathrm{NP}}$, if $\mathfrak{M}\models_{\mathscr{I}_{\mathrm{NP}}}(x \preccurlyeq y \wedge \exists!_j x)$, then for some k, $j \leqslant k$ and $\mathfrak{M}\models_{\mathscr{I}_{\mathrm{NP}}}\exists!_k y$.

If $\mathscr{L}_{\mathrm{NP}}$ is fractionated and $\mathfrak{M}\models_{\mathscr{I}_{\mathrm{NP}}}(x \preccurlyeq y \wedge \exists!_j x)$, then for some k, $j < k$ and $\mathfrak{M}\models_{\mathscr{I}_{\mathrm{NP}}}\exists!_k y$.

In general, the Theory of Part I yields as theorems a number of formal principles characteristic of Neoplatonic "logic" that have been highlighted by A. C. Lloyd. Lloyd, for example, lays down the causal principle as a kind of axiom in his reconstruction of Neoplatonic logic in "The Principle that the Cause is Greater than its Effect". In *The Anatomy of Neoplatonism* Lloyd develops a series of principles governing Neoplatonic predication, using what he calls *P*-predicates. The important characteristics of *P*-predicates likewise follow as theorems of the theory in Part I if they are understood as sortals. Let $\mathscr{L}$ be a fractionated sortal language such that $\Gamma = \{\preccurlyeq\}$ and $\Sigma(\preccurlyeq) = \{P_j\}$ and let a non-trivial model $\langle \mathrm{D}, \mathrm{R}\rangle$ be one such that $\mathrm{R}_{\mathrm{ext}}(P_j) \neq \varnothing \subset \mathrm{R}_{\mathrm{ext}}(P_{j+1})$:

(i) Sortals meet Lloyd's defining condition for quasi-genera (pp. 76–77) and hence sortal predicates qualify as Lloyd's *P*-predicates: In any non-trivial model, there exist d, $\mathrm{d}' \in \mathrm{D}$ such that $\mathrm{d} \preccurlyeq \mathrm{d}'$ and both $\mathrm{d} \in \mathrm{R}_{\mathrm{ext}}(P_j)$ and $\mathrm{d}' \in \mathrm{R}_{\mathrm{ext}}(P_j)$.

(ii) *P*-predicates are not synonymous but share a core meaning (*ibid.*): The predicates in $\{P_j\}$ are non-synonymous (e.g. they have in general different extensions) but they have a meaning in common because they all have the field of $\preccurlyeq$ as their range of significance.

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Actuality/potentiality and universals/particulars (5–16)

Finally, let me remark on the fact that Plotinus explains the relation that we have already discussed in terms of whole–part, genus–species, and cause–effect, in terms of Aristotle's vocabulary of actuality and potentiality, and associates the former with what is universal. What is actually true of the genus, he says, is potentially true of the species:

> . . . for every [body of knowledge] (πᾶσα) is none of its partial [contents] (τῶν ἐν μέρει) but the potentiality (δύναμις) of all of them, but each [part] is actually that [part] which it is, and potentially all of them (δύνάμει πάντα), and the same is true of universal [knowledge] (τῆς καθόλου): the specific [bodies of knowledge] (τὸ ἐν εἴδει), which lie potentially (δύάμει) in the whole (ἐν τῇ ὅλη), those, that is, which grasp the specific [contents] (τὸ ἑν εἴδει), are potentially (δύάμει) the whole (ἡ ὅλη); for the whole (ἡ πᾶσα) is predicated (κατηγορεῖται) [of them], not a part (μόριόν) of the whole (τῆσ πάσης) . . . (5–10).

In doing so, however, he is not invoking Aristotle's metaphysics of matter and form. He is alluding to no more than the causal priority of genus to species. What is true of the genus is potentially true of the species inasmuch as the comparative properties true of the genus are causally transferred albeit in a diminished mode.[17]

In saying that the genus is predicated (*katēgoreitai*) of the species, Plotinus is again using Aristotelian technical terms. He also refers to the genus as universal (*katholou*). He should be read as describing the causal principle in logical vocabulary. Saying that the genus/universal is predicated of the species is just to say in the formal mode what is captured in the material mode in saying that a property of the effect must also be a property of the cause.

footnote continued

(iii) P-predicates of coordinate (same level) species are synonymous (p. 78): if $d \leqslant d'$ and $d' \leqslant d$, then for any j, $d \in R_{ext}(P_j)$ iff $d' \in R_{ext}(P_j)$.

(iv) P-predicates conform to "different degrees of participation in the first term of the series" (p. 80): for any d, $d' \in D$, d, $d' \in F(\leqslant) = R_{RS}(P_i)$; but if $d < d'$ then for some j, $d \in R_{ext}(P_j)$, $d' \notin R_{ext}(P_j)$ and, for some n, $d' \in R_{ext}(P_{j+n})$.

(v) Lloyd's "Proclan Rule" ("A greater degree of power implies a greater transmission of properties, that is, one reaching lower", p. 106) holds as a theorem: If $P_1, \ldots, P_n, \ldots, P_{2n-1}$ is a full scalar series with midpoint predicate P_n interpreted over a field $D = F(\leqslant)$, then the result of paring off from both ends of the series the same number of predicates yields a full series that reaches "lower" on the background scale. For $1 \leqslant j \leqslant n$, it follows that $P_j, \ldots, P_n, \ldots, P_{n+(n-j)-1}$ is a full series relative to the submodel such that (1) for $i = j, \ldots, n$, $R'_{ext}(P_i) = R_{ext}(P_i) - R_{ext}(P_{i-1})$, and for $i = n+1, \ldots, n+(n-j)-1$, $R'_{ext}(P_i) = R_{ext}(P_i) - R_{ext}(P_{i+1})$ and (2) for $i = j, \ldots, n+(n-j)-1$, $D' = F(\leqslant') = RS'(P_i) = \cup\{R'_{ext}(P_k)$: $k = j, \ldots, n+(n-j)-1\}$. The Proclan Rule is: for any d, d' s.t. $d \leqslant d'$, $d \in F(\leqslant)$, $d' \notin F(\leqslant)$, $d \in F(\leqslant')$,

a. $\forall i\ (i = 1, \ldots, n)$, $d' \in R_{ext}(P_i) \rightarrow d \in R_{ext}(P_i)$,
b. $\exists i(i = j, \ldots, n)$, $d' \in R_{ext}(P_i)$ and $d \notin R_{ext}(P_i)$, and
c. $\exists d'' \in F(\leqslant)$, $d \leqslant d' \leqslant d''$ but not $(d' \leqslant' d'')$; and
$\exists i(i = n+1, \ldots, n+(n-j)-1)$ s.t. $d'' \in R_{ext}(P_i)$ but $d' \notin R_{ext}(P_i)$.

17 A. C. Lloyd discusses essentially this interpretation in *The Anatomy of Neoplatonism*, pp. 81–82.

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Discussion

Though Plotinus rejects Aristotle's idea of universal and its correlative notions of intension and extension, I do not want to suggest that there is no set-theoretic characterization of the Neoplatonic hierarchy. On the contrary, Proclus comes very close to providing one. He remarks explicitly that any point in the ontic hierarchy is ultimately the cause of all the effects that proceed from it, whether these be near or remote. In effect, he is introducing a set concept. Let us call the set containing all the effects of a cause, both immediate and remote, its *effect set*.[18] (If D is the domain of discourse, $d \in D$, and $\preccurlyeq$ is a complete ordering on D, then d′ is *an effect* of d iff, $d \preccurlyeq d'$ and not $(d' \preccurlyeq d)$. The *effect set* E(d) would be $\{d' : d' \text{ is an effect of } d\}$. If $D' \subseteq D$, E(D) is $\bigcup\{E(d) : d \in D'\}$. If $\preccurlyeq$ is complete, it follows that $E(D') = D - D'$.) The effect set is then characteristic of its cause. Corresponding to the One is the set of all things because the One is the cause of everything, and each item lower in the scale of being determines its unique smaller sets. Now, let us posit a basic causal, whole–part ordering determining a tree-like structure on an ontological domain, and a derivative scalar nesting of the domain into "ranks" by scalar existence predicates $\exists!_j$ with domains $R_{ext}(\exists!_j)$. It follows that the rank of an existence predicate varies directly (monotonically) with its extension but indirectly (antitonically) with its "effect set":

$$j \preccurlyeq k \text{ iff } R_{ext}(\exists!_j) \preccurlyeq R_{ext}(\exists!_k)$$
$$\text{iff } D - R_{ext}(\exists!_k) \preccurlyeq D - R_{ext}(\exists!_j).$$

Thus, in Neoplatonic "logic" it is effect sets rather than Aristotelian extensions that fall into an ordering inverse to that of "forms" or "species".

I would like to conclude this discussion of Aristotle by reverting to Dodds's remark that the genus is not only metaphysically prior to the species, but is also temporally prior in its embryonic development. Dodds is right in his remark on Aristotle's views on temporal order. Aristotle does think that in gestation the genus is distinguishable earlier than the species. However he is backward on metaphysical priority. Embryonic development proceeds from the more abstract to the less, from the genus to the species, to the concrete individual, but in doing so it is also proceeding from the less to the more "substantial." For Aristotle it is the individual itself that is the most substantial and least abstract.[19] Curiously, then, Aristotle does in a sense have a view about the "substantiality" of the abstract which is rather like that which I am attributing to the Neoplatonists. Unlike Dodds's claim that abstract entities are at the top of the ontic hierarchy, both Aristotle and the Neoplatonists give primacy to the most particular. They differ on what this particular is. Aristotle takes it to be a corporeal combination of matter and form. Plotinus and the Neoplatonists take it to be the One. The idea that the Neoplatonic ordering from the real to the unreal should be explicated by an Aristotelian taxonomic tree is not Aristotle's. If there is any correspondence between the two it is the reverse of the traditional reading. Analogous to the One are the "leaves" of the Aristotelian tree, the composite individuals of matter and form, not abstractions found in its

18 In *The Anatomy of Neoplatonism* (p. 106) A. C. Lloyd draws attention to the importance for the logical theory of these effects.

19 For an extended defense of this reading of Aristotle see Montgomery Furth, *Substance, Form, and Psyche: An Aristotelian Metaphysics*, pp. 123–128, 246, 257–260.

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branches and root. If the One has to be discussed in terms of abstraction, it is much more accurate to say that Plotinus thinks of it as a particular or an individual rather than as a big set. Indeed what could be more individual and particular than the One?

Aquinas, a true student of Aristotle, makes a very similar point. He argues that we cannot gain knowledge of immaterial substances through the increasingly abstract sciences of physics, mathematics, and metaphysics. God and the angels are not abstractions, he says. They are particulars, and the special study of the non-abstract discipline of theology.[20]

7. Aphairesis as Negation

Thus far I have argued that the Aristotelian language in Neoplatonic texts can be read as attempts to formulate a relational theory of scalar existence. In this section I would like to explore more closely texts in which Neoplatonists attempts to formulate scalar ideas in what is really new vocabulary of their own. Here the key is negation, a concept from logic, and I think we can see in the texts attempts to formulate a family of scalar negations, quite different from any negation concepts studied in earlier classical logic.

As argued earlier, the ordinary language concept of aphairesis includes an aspect of negation, and all modern interpreters of Plotinus agree that his idea includes negation. H. A. Wolfson and his followers stop there, rejecting any further "conservative" connotation, as attributed to it, for example, by Whittaker and Mortley. Wolfson take the process to be a kind of pure rejection or negation, and uses logical vocabulary to make his point. He classifies aphairesis as falling within the broad class that Aristotle calls negation or opposition (*apophasis*). He eliminates the possibility that this negation is the variety that Aristotle calls privation (*sterēsis*). Privative predications, in Aristotle's sense, apply only to situations in which a predicate which would normally or naturally hold fails to apply. (There is a role for privation in Plotinus but it lies elsewhere: in his account (II.4) of matter as the privation of being.) Aphairesis, in contrast, carries the mind to the One, the opposite end of the ontological hierarchy from matter.

Aphairesis is, Wolfson says, the sort of negation appropriate to reporting what we would call today a category mistake. It is appropriate to negate a predicate in this sense if, in his words, "the predicate negated can under no conceivable circumstances be affirmed of the subject."[21] The particular sort of category mistake exploited in Plotinus' aphairesis consists of applying to God a predicate that is not meaningful of him. A sort of negative knowledge results, then, from knowing about this failure which, Wolfson says, "means the exclusion of God from the universe of discourse of the predicate in question."

Wolfson's point may be illustrated by what Plotinus says about affirming and denying goodness of the One (V.5.13.12 ff.). Plotinus says,

> If then he does not have what is not good or what is good, he has nothing.
> If then "he has nothing", he is "alone and isolated."

20 Philip Merlan, "Abstraction and Metaphysics in St. Thomas' *Summa*". The distinction defining physics, mathematics, and metaphysics as sciences of increasing abstraction is due to Boethius (*De Trinitate* II, p. 8 in H. F. Stewart and E. K. Rand, *Boethius, The Theological Tractates*).

21 H. A. Wolfson, "Negative Attributes in the Church Fathers and the Gnostic Balsilides", p. 146.

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On Wolfson's reading, the predicate *good* does not apply to God, and thus we can know that neither of the following sentences is true:

The One is good.
The One is not good.

Though Wolfson does not use terminology from scalar semantics or many-valued logic, his point may be recast in the more modern idiom and doing so shows its relevance to the scalar interpretation I am proposing. The point to recast is the claim that attributing P and **non-**P to the One is a category mistake.[22] As explained in Part I, when attributing a scalar predicate to an object, there is a strong pragmatic implication (though not a logical entailment) to the effect that predicates higher on the list do not also apply. If I say I am content, it is logically possible that I am in fact extremely happy, but the fact that I used the wider predicate strongly suggests that I could not correctly employ the narrower. These suggestions hold because it is misleading not to use as precise a predicate as the situation allows. Thus P_j and **non-**P_j have what might be called a "pragmatic significance range" that embraces those objects on the scalar ordering that are embraced by P_j or a lower predicate but to which no higher predicate applies. In the terminology of Part I, the pragmatic significance ranges of P_j and **non-**P_j would be everything that falls beneath **hyper-**P_j, i.e. anything in $F(\leqslant) - R_{ext}(\textbf{hyper-}P_j)$, where $F(\leqslant)$ is the field of comparison. It follows that something that falls in the extension of **hyper-**P_j falls outside the pragmatic significance range of P_j. This is the truth to which Wolfson is alluding. The One falls under **hyper-***good* and hence falls outside the pragmatic significance range of *good*. It is in this sense that the One is excluded "from the universe of discourse of the predicate in question."

Wolfson's position is that Plotinus' aphairesis has a limited connection with the term's previous uses in ordinary language. He thinks that in the hands of the Alexandrian it has a technical usage referring to the epistemic process of recognizing the failure of certain predications. Among later Neoplatonists this epistemic process would be seen as correlated to the linguistically explicit logical operation of hyper-negation.

This understanding of aphairesis evolved slowly. Early in the tradition negative descriptions of the deity are common in Philo, and in the texts of the Gnostic and Hermetic traditions. Albinus advances the idea by explicitly calling

22 It is possible to incorporate Wolfson's intuitions into the formal theory of Part I by adding to the syntax of a strong scalar language $\mathcal{L}$ for $\Gamma = \{C_i\}$ and $\Sigma(C_i) = \{P_j\}$ a predicate operator **prag** on the predicates of $\Sigma(C_i)$ that converts a predicate's significance range to its pragmatic significance range. The following semantic rule would be required:

9. for any molecular predicate **prag-**P_j and $d \in D$, if P_j is in some $\Sigma(C_i)$ and F is the field of C_i for R, then $R(\textbf{prag-}P_j)(d) = T$ if $R(P_j)(d) = T$ and $R(\textbf{hyper-}P_j)(d) = F$; $R(\textbf{prag-}P_j)(d) = F$ if $R(P_j)(d) = F$; and $R(\textbf{prag-}P_j)(d) = N$ if $R(P_j)(d) = N$.

The following metatheorems then capture Wolfson's intuition. Let $\langle D, R\rangle$ be a model of $\mathcal{S}$:

a. If $d \in R_{ext}(\textbf{hyper-}P_j)$, then $d \notin R_{ext}(\textbf{prag-}P_j)$ and $d \notin R_{ext}(\textbf{non-prag-}P_j)$.
b. $R_{SR}(\textbf{prag-}P_j) = R_{SR}(\textbf{non-prag-}P_j) = D - R_{ext}(\textbf{hyper-}P_j)$.
c. $\textbf{prag-}P_jx \vDash_f \sim \textbf{hyper-}P_jx$
d. $\textbf{non-prag-}P_jx \vDash_f \sim \textbf{hyper-}P_jx$

In the language of traditional metatheory the last two theorems say that **prag-**P_jx presupposes the truth of $\sim$**hyper-**P_jx.

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attention to the fact that aphairesis is a special sort of negative thinking appropriate to understanding God. Plotinus takes a major step forward inasmuch as, as in the example cited, he frequently uses negative descriptions of the One. More importantly, he incorporates negation into his system by giving the name of aphairesis to an important sort of negative knowing about predication failures. He does not, however, give any kind of detailed account of aphairesis itself.[23] He rejects the idea of knowledge of the One and has no explicit theory of linguistic negation and its semantics that would allow for certain negative sentences to be true about the One. For that we have to wait for his followers.

Proclus is the first to treat the relevant types of negation as clearly linguistic phenomena and to distinguish among them in terms of their semantic properties. In several places he distinguishes three ways to negate the predicate of a simple subject-predicate sentence *S is P*. He says, for example, (Shaffrey and Westerink translation)[24]

> En effet, dans les réalités, les négations, à mon avis, présentent trois types particuliers; et tantôt, étant plus génératrices et préfectives de la génération des affirmations; tantôt, elles sont placées sur le même rang que les affirmations, et l'affirmation n'est en rien plus respectable que la négation; tantôt enfin elles ont reçu une nature inférieure aux affirmations, et elles ne sont rien d'autre que des privations d'affirmations.

At another point he makes the same distinctions with regard to the ways to negate Being (Morrow and Dillon translation):[25]

> Not-Being has a number of senses, one superior to negation, another which is of the same rank as Being, and yet another which is privation of Being, it is clear, surely, that we can postulate also three types of negation, one superior to assertion, another inferior to assertion, and another in some way equally balanced by assertion.

None of these is the bivalent truth-functional negation of modern logic. Rather, they are, or are closely related to, varieties of scalar negation. Let us consider the last of Proclus' negations first because it is the best know from Greek philosophy.

Privative negation

Following Aristotle who first distinguished it, Proclus calls this type privation (*sterēsis*, in the latin tradition *privatio*). Proclus' account is semantic and appeals to a background concept of order. It applies, he says, to a term to yield a description of a lower order of reality. We might recast this in truth-conditional terminology as follows: *S is not-P* is true iff the object named by *S* falls into a class lower in the ontological order than that occupied by those things in the extension of *P*.

23 This gradual development of "negative theology" in Neoplatonism has been well discussed in the literature. See A.-J. Festugière, "Le Dieu Inconnu et la Gnose"; John Dillon, *The Middle Platonists*, and H. A. Wolfson, "Albinus and Plotinus on Divine Attributes".

24 See *Platonic Theology*, II, 5, p. 94 and II, 10, p. 109, Shaffrey and Westerink. (There is no published modern English translation.)

25 *On the Parmenides*, 1073. Glenn R. Morrow and John M. Dillon, *Proclus' Commentary of Plato's Parmenides*.

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Aristotle waffles somewhat on what he means by privation and he never attempts to build much in the way of logical theory on the distinction. Of his notion this much is clear. Privation is a species of contrary rather than contradictory opposition, in that both an affirmation and its private negation can both be false, but cannot both be true. There is some suggestion in Aristotle of a scalar concept. In most of the examples he gives a privative and its opposite are matters of degree. Items at one end of the scale definitely fall under the predicate, those at the opposite end definitely fall under its private opposite, and there are items in the middle that fall under neither. His examples include *blind* (*Categories* $11^{b}15$, *Metaphysics* $1022^{b}22$), *bald* (*Categories* $13^{a}35$), and *toothless* (*Categories* $12^{a}30$).

In some texts Aristotle is more precise and explicates the idea in terms a background assumption about what is "dispositional" or "natural". He says (*Categories* $11^{b}15$, *Topics* $109^{b}18$), for example, that privation consists of the failure of a habit or disposition (*hexis*). In a particularly important passage (*Metaphysics* 1022^{b}ff) he says privation consists of the failure of a quality that would normally or naturally (*pephyke*) hold of the subject—vocabulary that eventually became part of the standard definition of privation in mediaeval logic. In sum, a Aristotelian privative may be viewed as the contrary opposite of another quality that occupies the higher end of a presupposed dispositional or natural scale.

Proclus is clearly adapting this Aristotelian idea, and he does so in a way that is closer to modern scalar negation. First of all, Proclus' privation is syntactically marked, as it is for the Stoics.[26] In addition, in place of "natural presumption" Proclus makes use of what is clearly a comparative ordering relation, the Neoplatonic hierarchy. Accordingly, it is fair to gloss Proclus' idea in the terms as defined in Part I: it is a scalar privative negation defined on a comparative ontological order.[27]

Negation in intellection

Proclus' second negation has as its distinguishing feature that it applies to entities at the same level of reality. In other words, the extensions of *P* and "not" *P* in this sense are equally real. Proclus gives us no details here, but it is

26 Classical authors differ on the issue of whether a privative expression is syntactically marked. Aristotle gives as examples both lexically marked and unmarked predicates, e.g. *typhlos* = *blind* and *phalakpos* = *bald* (unmarked), and *nōda* = *toothless* (marked, from *nē* = *without* and *odous* = *teeth*). The Stoics limit privation to predicates with an explicit negative affix. Diogenes Laertius writes: "A privative proposition is one that contains a privative particle reversing the effect of a judgement, as for example, *This man is unkind* [*aphilanthrōpos*]." VII. 69, *Lives of Eminent Philosophers*, (R. D. Hicks, trans). Mediaeval authors, on the other hand, generally speak of privatives as fully lexicalized. See, for example, Ockham on opposition (*Summa Logica* I.36), and the discussion of Boethius, Anselm and Walter Burleigh in D. P. Henry, *Mediaeval Logic and Metaphysics*.

27 Unfortunately, modern linguistics has appropriated the term 'privative opposite' from scholastic logic but uses it in a sense that is neither Aristotle's nor Proclus'. In this usage, *female* is a privative opposite of *male* because *female* is marked, *male* is not, and the two terms together partition a broader set that unmarked *male* sometimes stands for alone. The only features this sense of opposition has in common with Aristotle's are extremely abstract, e.g. in both senses the privative opposite is "marked" and in both the opposites are contraries rather than contradictories. The linguistic usage, however, entirely lacks what is distinctive about the Aristotelian idea: that the opposites are extremes of a continuum or of a scalar comparative order. Indeed, privative opposites in the linguist's sense merely partition the covering set into two subsets that are exclusive and exhaustive.

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fairly clear that its role is in intellection, i.e. in the affirmation and negation of ideas in the sort of "science" appropriate to the intellect.

Hyper-negation

This is the first of the negations on Proclus' list, and the most important for our purposes. In the following text he explains himself more fully.[28]

> It is not, then, simply true that assertion is always superior to negation, but there is a case where it takes a second place to it, when negation expresses that type of Non-Being which is beyond Being. But since this type of Not-Being also is twofold—the one being possessed by Being, the other not being reckoned together with anything that is—it is plain that in the case of this latter neither assertion nor negation is properly relevant, whereas in the case of the former, negation is more appropriate, and also assertion, in so far as it has connection with Being. Yet even if no statement is properly true (ἀληθὴς) of that other (I mean the entity which is unconnected with Being), at least negation is more properly uttered of it than assertion. For even as assertions are about (ἐπι) things that are, negations are about what is not; for in general as assertion wants to lay hold of some Form, and when the soul says that one thing is present to another and makes an assertion, it postulates something which is akin to itself. The primal entity is, however, above Form (ὑπερ εἶδος), and it is not suitable to apply to it any of those attributes which are proper to secondary things, nor to transfer to it attributes proper to us. For all unawares we will find ourselves talking about ourselves and not it. So then we must use in relation to (ἐπι) it not assertions, but rather negations of those attributes which are proper to secondary things. For assertions strive to ascertain that some one thing is true of some other; whereas the first is both inaccessible to cognitions which are related to anything existing, and it is not possible to take anything as applying (ὑπάρχον) to it, but rather as not applying (ὑπάρχον) to it; for it transcends (ἐξῆρηγαι) all compositeness and participation.

To be sure, the ontology sketched in this text is obscure, but much of what it has to say about language is clear. Proclus is talking about assertions and negations, and about their semantics. He says assertions are "about" (*epi*) and "apply to" (*hyparchon*) certain sorts of things. The semantics of the negation in question is explained by a presumed concept of semantic order. It applies to what is "beyond" (*hyper*) or "transcends" (*exairein*). This negation attaches to the predicate of an assertion to produce a negative predicate "true of" (*alēthēs*) a higher level of reality. It is even appropriate for descriptions of the order of reality above Being, including the One itself.

It is clear that Proclus intends this negation to be the same as that which Plotinus employs earlier in saying that neither *The One is good* nor *The One is non-good* are true—the *not merely*-negation. In speaking of similar texts in the Parmenides in which the point is made that the One is both not in rest and not

28 *On the Parmenides*, 1073. Glenn R. Morrow and John M. Dillon, *Proclus' Commentary of Plato's Parmenides*.

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in motion (i.e. not in non-rest), Proclus says:[29]

> they demonstrate how the One is itself the (first) Cause by means of the so-called 'super-negations' (ὑπεραποφάσεσιν) ... so that by means of this subtracting (ἀναιρέσεως) of all characteristics, the One may be shown to stand beyond all determinate orders.

This negation is, then, Proclus' linguistic version of Plotinus' epistemic aphairesis. Since it carries a scalar predicate to an extension higher on a background scale, this early negation is clearly a special case of modern scalar hyper-negation as defined in Part I, and motivates my choice of terminology there.

Proclus' hyper-negation is later appropriated by Pseudo-Dionysius the Areopagite who introduces it to Christian thought. Though he is never as clear as Proclus about its linguistic correlates, in his epistemology of the *via negativa* Dionysius regularity appeals to aphairesis by name. Whereas Plotinus and the earlier tradition often use the alpha prefix for the special predications that indicate failure of predications of the One, Dionysius completes the conventionalization of hyper-negation by reserving for it the negative prefix *hyper* which produces sentences true of God.[30] He says, for example, that God is hyper-good (*hyperagathos*), hyper-divine (*hypertheos*), hyper-real (*hyperousios*), hyper-alive (*hyperzōos*), and hyper-wise (*hypersophos*).

The many texts in which hyper-negation is used show the important role which scalar negations and their logical properties assumed in later Neoplatonic theology. I would like to conclude by remarking on what I think is most striking philosophically about Proclus' linguistic turn, and about what is perhaps the most compelling feature of the interpretation of aphairesis as scalar negation. This is its power to "explain" Neoplatonic reversion. Plotinus clearly considers aphairesis to be an epistemic realization about predicate failure, but he offers little insight into its mechanism, and does not explain the process in terms of the semantics of a negation operation. The linguistics is more explicit in Proclus, and with it an implicit account of reversion itself. Reversion consists of a special application of logical inference. Knowledge of the One follows as a scalar implication from ordinary worldly knowledge.[31] Let us assume, for example, a comparative predicate *is superior to* standing for a global background ordering and an associated scalar predicate P standing for objects in the world that possess the background property to some specified degree. Let us assume moreover that *The One* stands for a supremum of this background ordering. It would then follow from the logic implicit in Proclus' distinction that the inference from the premises *S is P* and *The One is superior to S* to the

29 *Commentary on the Parmenides*, 1172. This is Rosán's translation which I think captures better than Morrow and Dillon the idea of the negation operation. Laurence Jay Rosán, *The Philosophy of Proclus*, n. p. 122.

30 See, for example, *On the Divine Names*, p. 71, (Phillipe Chevallier et al., eds.)

31 A. C. Lloyd, *The Anatomy of Neoplatonism* (pp. 131–132) remarks that it appears to him that, contrary to some modern readings, the necessity involved in reversion might well be logical, though he does not himself speculate on what this logical relation might be. In the terminology of Part I, reversion consists of the application of the following inferences, where x is a variable standing for The One and $P_j y$ represents some proposition of "wordly knowledge":

a. $\{x \preccurlyeq y,\ P_j y\} \vdash_J P_j x$;

b. $\{\forall z(x \preccurlyeq z),\ P_j x\} \vdash_J \textbf{hyper-}P_j x \quad (\text{if } j \neq 1)$

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conclusion *The One is P* is logically valid. Moreover, *The One is P* and *The One is the most superior being* together logically entail *The One is* ***hyper-P***. Now, both Proclus and Dionysius maintain that human language lacks scalar predicates that uniquely refer to the Deity, and hence that we do not know any positive proposition that is uniquely true of the One. In knowing, for any *P*, the truth of *The One is* ***hyper-P*** we nevertheless know something unique about The One. This knowledge moreover cannot be called in the least mystical, since it is a logical inference from ordinary worldly knowledge. Thus, on the interpretation defended in this paper, the Neoplatonic tradition, on this central point, emerges as neither confused or contradictory, nor even as particularly obscure. Rather, as the work of Proclus shows, it culminates with a solution to one of its key problems that uses clearly definable logical ideas of some power, the importance of which has only recently been rediscovered.

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