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The lover of the beautiful and the good: Platonic foundations of aesthetic and moral value

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Abstract Though acknowledged by scholars, Plato's identification of the Beautiful and the Good has generated little interest, even in aesthetics where the moral concepts are a current topic. The view is suspect because, e.g., it is easy to find examples of ugly saints and beautiful sinners. In this paper the thesis is defended using ideas from Plato's ancient commentators, the Neoplatonists. Most interesting is Proclus, who applied to value theory a battery of linguistic tools with fixed semantic properties—comparative adjectives, associated gradable adjectives, mass nouns, and predicate negations—all with a semantics that demand a privative scale of value. It is shown how it is perfectly possible to interpret value terms Platonically over privative Boolean algebras so that *beautiful* and *good* diverge while at higher levels other value terms are coextensional. Considerations are offered that this structure conforms to actual usage.

Keywords Aesthetic value · Moral value · Beauty · Goodness · Comparative adjectives · Gradable adjectives · Privative negative · Hyper negation · Mass nouns · Plato · Neoplatonism · Proclus

1 Introduction

Modern commentators have long concluded that Plato identifies the forms of the Beautiful and the Good as part of his mature theory of Ideas. On this reading the search of the lover of wisdom that culminates in contemplation of the Beautiful itself, as described by Diotima in the *Symposium*, is the same as the intellectual quest of the lover of wisdom in the *Republic* (500a–511e), who turns from concern with worldly beauty to an understanding of wisdom and the Good in stages explained by the divided

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line and the allegory of the cave (517ff). Interpreters like A.E. Taylor have little doubt on the identity:

> We must not, of course, especially in view of the convertibility of the terms *καλόν* and *αγαθόν* which is dwelt on more than once in the dialogue, be misled into doubting the absolute identity of the "form of good" of the *Republic* with the *αυτὸ τὸ καλόν* of the *Symposium*. The place assigned to both in the ascent to "being and reality" is identical, and in both cases the stress is laid on the point that when the supreme "form" is descried, its apprehension comes as a sudden "revelation." Though it is not to be had without the long preliminary process of travail of thought, and that it is apprehended by "direct acquaintance," not by discursive "knowledge about" it. It is just this conviction that all "knowledge about" is only preparatory to a direct *scientia visionis* that Socrates reveals the fundamental agreement of this conception with that of the great mystics of all ages. The "good" or *αυτὸ τὸ καλόν* is, in fact, the *ens realissimum* of Christian philosophers, in which the very distinction between *esse* and *essentia, Sein* and *So-sein* falls away.[1]

Though a standard reading, in recent decades the identity doctrine has not been the subject of much discussion among students of classical philosophy. In the aesthetic literature there is currently a lively interest in the relation of aesthetic and moral value,[2] but in that forum likewise there is really no discussion of Plato's claim that the two are identical.

The reason that Plato's identity claim is ignored, of course, is that it is viewed as false and uninteresting. This modern judgment lies, I think, in rather simple-minded considerations inherited from ordinarily language philosophy: it is easy to construct counter-examples to the claim that *good* and *beautiful* are synonymous. In this paper, however, I hope to show that the Platonic claim is richer and more plausible than might first appear, and that philosophers would do well to probe its foundations more deeply.

In this paper I shall sketch a framework in which the identity claim falls out as a natural consequence. The approach is due to the Neoplatonic commentators on Plato who spent a good deal of effort trying to make sense of his views. From a modern perspective, of course, Neoplatonism is perhaps even more implausible and uninteresting than Plato. But I hope to show that evaluation to be unfair. The Neoplatonists forged analytical tools for value theory that turn out to be special applications of more general features of language that are now being studied in linguistics and formal semantics. In a series of nested boxes—first the account from linguistics and formal semantics, next the Neoplatonic value theory, and finally Plato's identity thesis—I hope to set out a rationale for his view.

The paper is constructed as an argument that "explains away" a set of standard counter-examples to the identification of the good and the beautiful. My thesis is that,

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1 Taylor (1960). Likewise, Adams (1963) remarks that's Plato's views on education at *Republic* 401b–402d, that contemplation of beauty is a route to virtue and the good, are essentially those of Diotima's speech in the *Symposium* (esp210a–212a), and that similar language is employed at *Republic* 402d. Compare also Lewis Nettleship (1962).

2 See, for example, the papers in Levinson (2001), and Kieran (2006).

at a minimum, these examples are consistent with the sort of conceptual identity of moral and aesthetic terms envisaged by Plato. I will also suggest, though more tentatively, that there is a separate category of examples that supports the identification. Because the argument makes use of concepts from formal semantics, it can actually be stated in set theory. The formal statement, moreover, is important[3] because it is there that the paper's claims are ultimately confirmed. However, since the argument's main points can be stated and motivated informally, the technical formulations are reserved for an appendix. It should be remarked that though the argument draws from linguistics and formal semantics—for the semantics of comparative adjectives and associated expressions—and from the history of philosophy—for its interpretation of Neoplatonic philosophy—the particular claims it marshals are not controversial. Both the linguistic theory and the historical interpretations are straightforward. What is novel is putting them together to show how logic, as represented in the semantics of comparatives, makes sense of the Platonic claims. In particular, it shows clearly how counter-examples fail to refute the sort of value identification the tradition envisaged.

Section 2 begins with an exposition of the Neoplatonic theory of value, a topic that falls logically in the middle part of the argument. Using Proclus as a representative, I there explain how the tradition formulated its theses using comparative adjectives and negations. Section 3 backs off to review the more general semantics theory of comparatives adjectives. Section 4 continues the development of the general theory by laying out the semantics of mass nouns, privation, and various predicate affixes that function as "predicate negations." Section 5 concludes by applying the general theory to the value terms *goodness* and *beauty*. The paper's main thesis is shown to follow directly from the definitions in which the earlier semantics is framed: the purported counter-examples to the coincidence of goodness and beauty prove to be consistent with the case in which some moral and aesthetic predicates are coextensional at "higher" levels.

2 Proclus on ontic structure

On the one hand, it seems a simple matter to demonstrate by linguistic intuition that the good is distinct from the beautiful: we intuitively judge that it is correct to have called Mother Teresa good but ugly, and Mata Hari[4] beautiful but evil. Throughout the argument in this paper I shall assume that the sort of intuition is correct, and that it is, in fact, a straightforward matter to construct examples of correct usage in which it is appropriate to label something as *good* but not *beautiful*, and vice versa.

On the other hand, as we have seen, Plato implies that the form of the Beautiful is the same as that of the Good. Plotinus, who is self-consciously developing Plato's views, explicitly affirms the identity in his famous essay "On Beauty" (*Ennead* I, 6[1] 6,20 ff.). Over a number of centuries, starting as early as Hermes Trismegistus, Plotinus and the philosophers in his tradition developed a set of analytic tools suited specifically to explaining the relations among value terms. Chief among these were

[3] Many of the formal ideas in the paper are developed more fully in Martin (2004).

[4] Or perhaps Madonna—pick your favorite wicked beauty. Pictures of Mata Hari are to be found on the Internet.

comparative adjectives, associated absolute adjectives, and various negations. Because they find their most developed form in Proclus (414–458 A.D.), I shall use his views as representative.[5]

Arguably, the central concept of Proclus's ontology is *order* as that concept is understood by logicians. Order in this sense is a binary relation that ranks a set of elements by comparing them to one another. It is in this sense that the *less than* relation "orders" the real numbers. To see how Proclus discusses order as a relation consider what he says in the following passage. Ignore, if possible, metaphysical details other than the claim that everything falls in an order that is simultaneously causal, moral and aesthetic:

> Conforming therefore to this divine cause of order, the Demiurge also, leading that which is disordered into order, imparts beauty to all things, and renders the world similar to, and connects it with himself. For being himself most excellent, he very properly causes the world to be most beautiful; because the first and intelligible beauty itself is suspended from, and is in goodness. Hence the world likewise, being most beautiful, is suspended from the Demiurge, who is best [of fabricated causes]. And because *the good* is the cause of beauty, on this account also the best of fathers gives subsistence to the most beautiful offspring.[6]

Now, in the following passage notice how he again describes this order but does so by using the explanatory device of comparative adjectives (printed in bold):

> …the **higher** cause (*aitioterōn*), being the **more efficacious** (*drastikōteron*), operates **sooner** upon the participant (for where the same thing is affected by two causes it is affected first by the **more powerful** (*dunatōteron*); and in the activity of the secondary the **higher** is co-operative, because all the effects of the secondary are concomitantly generated by the **more determinative** cause (*aitiōteron*). … All those characters which in the originative causes have **higher** (*huperteran*) and **more universal** (*holikōteron*) rank become in the resultant beings, through the irradiations which proceed from them, a kind of substratum for the gifts of the **more specific** principles (*merikōteron*).[7]

In the next passage notice how he again describes order in terms of comparatives, and adds the detail that the order has a first element that is simultaneously the first cause and the Good:

> Whatever principle is the cause of the **greater** (*pleionen*) number of effects is **superior** (*kreitton*) to that which has a power limited to **fewer** (*elattona*) objects and which gives rise to parts of those existents constituted by others as wholes. For if the one is cause of **fewer** (*elattonōn*) effects, the other of **more** (*pleionōn*), and the fewer form a part of the more numerous, then whatever is produced by the former cause will be produced also by the latter,…The latter is therefore

[5] On the use of scalars in Plotinus and Proclus see Martin (1995, 2001).

[6] Proclus (1758–1932).

[7] Propositions 70 and 71, Proclus (1963).

> **more powerful** (*dunatōteron*) and **comprehensive** (*perilōptikōteron*) …, and that which can give rise to **more** (*pleiō*) effects has **greater** (meizona) and **more universal** (*olikōteran*) power. But this means that it is **nearer** (*egguterō*) to the cause of all things; and what is **nearer** (*egguterō*) to the cause is in the **greater** (*meizonōs*) measure good, the Good being that cause. The cause of the **more numerous** (*pleionōn*) effects is therefore **superior** (*kreitton*) in its being to that which produces **fewer** (*elattona*).[8]

From a logician's point of view, Proclus' order is quite interesting because many of its properties can be described in the vocabulary of modern algebra. For example, it has a maximal element (the One); it has no minimal element; it consists of a linear infinite series partitioned into finite series ("taxa"), each of which has a first element (a "monad") and is "dense" in the sense that between any two elements of a taxon there is another taxon.[9]

Of these "algebraic" features only one is relevant here. It is that the ordering is one of "privation". We shall see what privation means more precisely in Section 4, but notice at this point how in the passage below Proclus makes use of the special device of distinct negation operators to explain his view:

> Being, after all, is the classic case of assertion whereas Not-Being is of negation…. So then in every class of Being, assertion in general is superior to negation. But since not-Being has a number of senses, one superior to Being, another which is of the same rank as Being, and yet another which is the 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.[10]

Similarly, he says:

> In truth my view is that negations come in three sorts, one sort is for beings of a form more fundamental than affirmations. These are generative and perfective of those things generated in affirmation. Another type is placed at the same level as affirmations, and here affirmation is not in any way more worthy than negation. Finally, there are those with a nature inferior to affirmations, namely privations of affirmations.[11]

To see why Proclus' uses of negations in conjunction with comparative adjectives is a particularly apt device to explain privative order, we must turn to the semantics of comparative adjectives.

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8 Proposition 60 and its scolium of the *Elements of Theology*.

9 See, for example, *Elements of Theology*, Propositions 11, 21, 100, and 147.

10 P. 426, Proclus (1987).

11 Vol. II:5, 38:18–25, Proclus (1968–1997). Author's translation.

3 The semantics of comparatives and scalars

The syntax and semantics of comparatives have been well studied by linguists, and there is much agreement on the semantic interpretation of comparatives and associated expressions.[12] Virtually all accounts agree that a comparative, which I shall represent by C, is to be interpreted as standing for a binary relation, which I shall here call $\leq$, and that $\leq$ exhibits a set of specific "formal" properties. At a minimum, $\leq$ is what is called a *preordering*—it is transitive and reflexive on its field of comparison. Under such an ordering, some elements are ranked as above an element and others below, but there may also be elements that fall "at the same rank" in the sense that neither is superior or subordinate to the other. That is, x and y are said to be *at the same rank* (briefly, $x \equiv_{\leq} y$) if and only if neither $x \leq y$ nor $y \leq x$. It will be useful here to group elements of the same rank into a set. Accordingly, we shall use the notation [x] for what we shall call the *rank set* associated with x, defined as the set of elements that fall at the same rank as x, i.e., $[x] = \{y|y \equiv_{\leq} x\}$.[13] A second condition imposed on $\leq$ is that $\equiv_{\leq}$ is what is called an equivalence relation. An *equivalence relation* is defined as one that is reflexive, transitive, and symmetric over its field of comparison. What is important about an equivalence relation is that it divides up ("partitions") the field into non-overlapping subsets of mutually equivalent elements. These sets are called *equivalence classes*. Examples of equivalence relations are the identity relation in set theory and the congruence relation in geometry. Requiring $\equiv_{\leq}$ to be an equivalence relation over the field ordered by $\leq$ insures that the rank sets defined in terms of $\leq$ form a partition of the field. Thus, under the standard interpretation, a comparative C stands for an ordering $\leq$ over a field of comparison that has the property that $\leq$ determines a family of "rank sets" that divides the field of comparison into mutually exclusive sub-regions of elements that are ranked *vis à vis* one another but within which all the elements are of the same rank.

In natural languages like English a comparative C is often found associated with a family of non-relational ("absolute") adjectives, which are sometimes grammatically related to C. These adjectives have the property that their extensions are themselves ranked by the relation $\leq$ named by C. Such absolute adjectives are said to be *gradable* or *scalar*. For example, the comparative *is happier than* is associated with the ranked scalar family *ecstatic, happy, content, so-so, down, sad, miserable*, each of which intuitively represents some degree of the background is-happier-than relation. Likewise, *is-hotter-than* is associated with the ranking adjectives *boiling, hot, warm, tepid, cool*. Semantically a family of scalars associated with C may be understood as picking out distinct rank sets as determined by the relation $\leq$ named by C.

A scalar, however, does more than correspond to a rank set. The family of adjectives conveys a notion of accumulation when viewed from one direction and of privation when viewed from the opposite direction. We say for, example,

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[12] For a survey of standard accounts, which for the issues raised in this paper remains valid, see von Stechow (1984).

[13] Examples of orderings $\leq$ of this sort would be *x is morally equal to or better than y* and *x is just as beautify or more beautiful than y*. Then $\equiv_{\leq}$ would be the moral or aesthetic equivalence and would partition the universe into those that were morally or aesthetically "equal."

He was not just happy; he was ecstatic.
He was sad, or possibly even depressed.

The acceptability of such usage goes hand in hand with the validity of characteristic entailments. For example, the validity of the following inferences is grounded in the adjectives' lexical meanings:

He was ecstatic, so he was at least happy.
It was certainly hot [enough to …] because it was boiling.
It wasn't boiling because it wasn't even hot.

Scalar inferences of this sort conform to a general schema:

the rank of P_j is higher than that of P_k if and only if,
x is P_j *semantically entails x is at least* P_k*, and*
x is at most P_k *semantically entails x is not* P_j

Semantic relations of this kind may be used to determine the relative rank of scalars within a family associated with a given comparative. To this end Laurence Horn has proposed a series of "test-frames".[14] We may employ Horn's criteria here by stipulating that, relative to a scalar family, P_j ranks higher than P_k if and only if the following sentences are semantically acceptable:

x is not only P_k*, but also* P_j
x is P_j*, or at least* P_k
x is at most P_k*, even if he is* P_j
x is not even P_k*, {let alone/much less}* P_j
x is at least P_k*, if not (downright)* P_j
x is not even P_k*, {let alone/much less}* P_j
x is P_k*, {or/possibly} even* P_j
x is P_k*, and is {in fact/indeed}* P_j

In the literature it is standard to explain the semantics of scalar predicates within a scalar family by assigning to each predicate a "rank". There is however, no universally agreement on how the notion of rank should be defined. All agree that it must capture the relevant notions of order and rank set as sketched earlier. But "rank" also invites a definition in terms of number theory. For example, the scalars from a given family are sometimes each assigned a different real number value in interval $[n, 0]$, and then notions of predicate extension and rank set are somehow defined in reference to these values. For some varieties of scalars (and associated comparatives) a numerical analysis is required. This is the class of comparatives like *is older than* and *is taller than*. For these it is grammatically acceptable to modify associated scalars, like *old* and *tall*, by what are called *measure phrases*, like *five years* and *six feet*. The following cases of usage, for example, are semantically acceptable:

He is five years ***old***
He is six feet ***tall***

14 Horn (1989).

The interpretations of scalars like *old* and *tall* are accordingly defined by reference to a mediating numerical rank assignment that maps each scalar to its number (its "degree") in, say, the interval $[n, 0]$.

For technical reasons, however, numerical interpretations are inappropriate for the sort of scalars found in Neoplatonism and for many scalars typical of ethics and aesthetics. Value-laden orderings are generally quite unlike the orderings of the physical sciences. Physical orders are often defined in terms of a prior operationally defined assignment of a "numerical measure" to each of the element to be ordered. Such measure assignments conforms to a law-like regularity (the so-called Archimedean property) that justify quantitative comparison among measure values and arithmetical operations on them.[15]

However, the scalars we are concerned with in this paper—those used in Neoplatonism and in attribution of goodness and beauty—are ones for which measure phrases are ungrammatical. For these it is implausible to require the theoretical burden of defining numerical assignments that conform to Archimedean measurement requirements. Moreover the commitment is unnecessary. For the sort of comparatives and scalars with which we are concerned it is possible to define a more abstract concept of rank, one with fewer theoretical assumptions. For our purposes it will be adequate to simply identify a predicate's rank with a rank set.[16] That is, we may simply identify the rank of a scalar predicate with its extension itself, a subset of the region of comparison of the associated comparative adjective.

[15] So-called "extensive " orderings are constructed from a physical concatenation operation $\bullet$ and a unit e according to the recursive rule that rank 1 is e and rank $n+1 = e\bullet n$. An ordering relation < is *Archimedean* if $x < y$ is determined by the operation $\bullet$, which is itself usually defined in physical terms, and is defined according to the rule: $x < y$ if we extend x by some finite number n of iterations so that the result nx is bigger than y. It is moreover it is required that it be possible to to prove the following theorem:

if (1) nx is defined $1x = x$ and $(n+1)x = nx\bullet x$, and (2) $x < y$, then (3) there exists a positive integer n such that $y \leq nx$.

See Krantz et al. (1971). Accounts in the linguistic literature on the semantics of comparatives that posit ranks over the real numbers generally "slide over" the fact that they are in effect assuming a concept of extensive measurement that presupposes a concatenation operation $\bullet$, one that is presumably definable in physical terms. It is important to make this assumption explicit here because of its implications for the notion of a privation discussed below.

[16] Apart from the special cases in which the comparative is associated with a measurable order, there is little motivation for interpreting the ordering over numerical structures like the reals, integers or natural numbers, rather than over more abstract algebras, as they are here. Notions of "degree" are definable for various partial orderings sufficient to the needs of the various syntactic and semantic accounts, and a number of theorists in fact employ the more abstract framework. See for example, Cresswell (1976), Åqvist (1981), and Kennedy (2001, 2007).
The current account may be regarded as a special case of the general theory set out by Kennedy's in "Vagueness and Grammar," just cited. Here I am abstracting from problems of vagueness by regarding evaluative adjective as absolute. I do so not because value terms are not vague—there is, for example, no clear boundary between the extensions of *good* and *heroic*—but because issues of vagueness are irrelevant to the paper's main points. Technically, viewed from within Kennedy's framework, the theory here treats only absolute adjectives, and what he calls "degrees" are identified with what I call rank sets, which have the property of falling in a total ordering. An adjective's rank set then functions as what Kennedy would consider its minimal degree in the ordering. In my account, in which numerical orderings are eschewed, ranks sets simultaneously function as adjective extensions.

We may do so because the extensions of the various scalar adjectives are themselves mutually ordered. They are in fact nested by the relation $\subset$ of strict set inclusion.[17] To see how, notice that an ordering $\subset$ is determined by the comparative's ranks sets as fixed by $\leq$ and $\equiv_{\leq}$. The subsets of $U_{\leq}$ are nested from "the bottom up" as follows. We first define *the rank determined by* a rank set $[x]$ as "the downward closure" of some $[x]$ under $\leq$, i.e., it is the set of elements of $U_{\leq}$ that are either $\equiv_{\leq -}$ equivalent to x or that fall lower than x with respect to $\leq$. Under this definition, a rank is the set of all elements of $U_{\leq}$ that are "at most as great as" those in a given equivalence class. It then follows that the strict inclusion relation $\subset$ defined on "ranks" marshals the subsets it compares into a nested "line."[18]

It is customary in the literature to list scalars from left to right $P_1, \ldots, P_n$ in "decreasing rank." That is, it is customary in defining the interpretation of predicates to do so in such a way that the earlier a predicate in the list (the lower its subscript), the higher its "rank" relative to $\leq$. For simplicity (and to aid the formal account in the appendix) we will assume from this point on that a comparative C and its associated family $\{P_i\}_C$ of scalars $P_1, \ldots, P_n$ are predicates in a first-order language and that the semantic restrictions imposed on scalars and comparatives should be understood as restrictions on any acceptable first-order interpretation of the predicates.

Neoplatonic claims about the structure of reality and that tradition's use of comparative and scalar vocabulary go hand in hand. The semantics of comparative and scalars require that the domain of interpretation be structured in a broadly Neoplatonic manner. For example, consider the semantics of moral and aesthetic language. Independently of Neoplatonic philosophy, we may observe as a fact of English that there is a comparative expression *is-morally-better-than* and that it is associated with the scalar family of non-relational adjectives *supererogatory, good, neutral, bad, evil*. Likewise in English there is the comparative *is-more-beautiful-than* associated with the series of scalars *ravishing, beautiful, pretty, fair, plain, homely/ill-favored, ugly/hideous, repulsive*[19] and also with the series *sublime, beautiful picturesque/pretty, dull, disrupted, destroyed, ravaged.* Lexical items in English with "metaphysical" connotations likewise have their own scalars, for example, the "substantiality order:" *absolute, substantial, subsistent, insubstantial, unreal*. Similarly, there are adjectives that we may call "modal" that fall in a scalar order: *necessary, likely/probable, possible, unlikely/improbable, impossible*. There are "generality" and "temporal" orders: "*all, most, some, rare, unheard of* and *eternal, occasional/intermittent, never*. The Neoplatonic framework ranks reality according to all these orders—of substance, moral goodness, beauty, modality, universality, and time. The existence of these families of scalars, however, is a fact not of philosophy, but linguistics. The semantics appropriate to these families is likewise a fact of language, not of metaphysics. The existence of the Great Chain of Being for families of Neoplatonic scalars would then, in some

17 $x \subset y$ is defined as $x \subseteq y$ and $x \neq y$.

18 It forms what is called a *total* order on its field: it is non-reflexive, transitive, asymmetric, and connected, i.e. for any x and y, either $x \subset y$ or $y \subset x$.

19 If this is genuinely a scalar family governed by the same background ordering, it speaks against those in the history of aesthetics, like Burke and Kant who would class the sublime, the beautiful and the picturesque in conceptually unrelated families.

sense, follow on semantic grounds, from the aptness of the relevant vocabulary, if it is apt, for describing the world.

There is another Neoplatonic claim that would also follow from the aptness of scalar descriptions. This is no less than the claim that reality is morally ordered, and that ontic order is also an order from the good to the bad.

So far, what we have said of scalar order has been very abstract, and certainly there has been no mention made of "value" as a component of $\leq$. It has been required merely that $\leq$ be a total ordering, i.e., any partial order that falls in a line. The notion of rank as we have defined it meets this minimal condition. The abstractness of the account is illustrated by the fact that in place of any order $\leq$ we might just as well have taken its converse $\geq$ because the converse of any total order is also a total order; it simply lists the elements in the opposite direction. Because $\leq$ and its converse $\geq$ are isomorphic, as total orders they are algebraically indistinguishable. The semantics of value comparatives as so far explained, then, provides no basis for preferring, or even distinguishing, one ranking of predicates from its converse.

However, there is more to a scalar comparison than total ordering. One of the more philosophically suggestive facts about scalar comparatives, especially "value" comparatives, is that there is linguistic evidence, both syntactic and semantic, for calling one extreme of an order "positive" or "good", and the other "negative" or "bad", and for judging whether a given order proceeds from the former to the latter.

Linguists have proposed a number of criteria or "tests", which are in part grammatical and in part semantic, to distinguish the extreme of $\leq$ that is positive from that which is negative. These are formulated in terms of various syntactic and semantic features of their associated predicates in $\{P_i\}_C$.[20] For the purpose of this paper it will be useful to review several such devices that are employed, if not explicitly commented upon, by Neoplatonists like Proclus.

Only "negative" adjectives—those interpreted over the negative part of the scale—are grammatically acceptable in contexts that contain so-called *negative polarity items*. These are words like *ever, any, at all, still* and *yet:*

*It is **difficult/*easy** for him to admit he was ever wrong.*
*It is **dangerous/*safe** for him to do **any**thing like that, **ever***

A second test is that only "positive" adjectives are acceptable in complements of some comparatives:[21]

*He has eaten more than he is **happy /*unhappy** to acknowledge.*
*He has less money than he his willing to be **frank/*secretive** about.*

In the examples below the negative polarity terms have what philosophers would traditionally count as having evaluative readings:

[20] See Seuren (1978), Ladusaw (1979), Horn and Kato (2000).

[21] For an account of this and the test below that uses measure phrases see Seuren (1978).

*It is really **ugly/*beautiful***	*that he is **still** doing **any**thing like that*
*It was **evil, immoral/*noble, *virtuous***	*that he behaved **at all** like that **yet** he did it*
*This inanimate thing is only **material/*spiritual***	***yet** it is **still** caused by the One*

In a similar way various negative predicates common to Neoplatonic accounts are not acceptable as complements of some comparatives:

*An inanimate object possesses too little being to be causally **effective/*ineffective***
*Matter has too little substance to be **beautiful/*ugly***
*The corporeal is less substantial than the truly **beautiful/?ugly***

Here, as linguists remark, the positive terms are acceptable, but the negative terms, if not ungrammatical, are semantically puzzling.[22]

It has also been observed that if a scalar family describes a quantitative order (unlike most of those in Neoplatonism or value theory), positive scalars, but not negative, may be modified by so-called *measure phrases*.

*He is five years **old/*young***
*He is six feet **tall/*short***

Because these "tests" for identifying the "positive" and "negative" extremes of an ordered scalar family are formulated only in syntactic and semantic terms, they provide non-philosophical criteria for determining the "positive" and "negative" orientation of the corresponding scale in the "world" as fixed by the meaning of the terms.

Not only Neoplatonic scalars, but moral and aesthetic predicates generally satisfy the criteria of oriented scalar families, as the reader may easily confirm from the following examples:

immaculate, saintly, good, bad, evil;
heroic, brave, dutiful, cowardly, craven;
punctilious/supererogatory/scrupulous, just/fair/honest, lawful/equivocal, dubious/undependable/unsound, conniving/tricky/dishonest/underhanded/ unjust/unfair/illegal, unscrupulous;
ravishing, beautiful, pretty, fair, plain, homely/ill-favored, ugly/hideous, repulsive;
sublime, beautiful picturesque/pretty, dull, disturbed, destroyed, ravaged.

To grant that the various predicate families we have been discussing qualify as scalars with an associated comparatives then entails that the terms possess the semantic that has been sketched. Accordingly, in a formal statement of the semantic interpretation of such families of value terms the assignment of semantic correlates is to be definded relative a linear order for which it is possible to distinguish on the basis of prior grammatical and semantic evidence which direction is positive and which negative.

To accommodate the examples of the introduction, however, the argument must go further. We must show in addition why scalar orders may coincide at some levels but not all, and how the counter-examples of the introduction are compatible with

[22] In general, technical vocabulary, like that of science, tends to neutralize the polarity of adjectives that have "positive" polarity in ordinary usage. The Neoplatonic quasi-technical vocabulary has a similar effect.

moral and aesthetic coextension at some level. Scalar families that are interpreted over respective linear orders would therefore coincide at "higher" ranks but diverge at "lower." To this end we now consider in more detail the properties of privation.

4 Privation[23]

There are several distinct senses of adjectival negation on scalars. These have been remarked on not only by Neoplatonists, but independently by modern philologists and linguists. They all have semantic, and hence logical properties, that are strikingly unlike Boolean negation in first-order logic. Here I will remark on three such operators that are essentially the same as those distinguished in the texts from Proclus cited in Sect. 2.

The first is the negative privative (the *α-privatum* of classical philology), as in *no, it's not cold it's freezing; no, he isn't just thoughtless, he's immoral; no it isn't just boring, it's unsightly*. Semantically, affixes like *sub*- in Latin, *hypo*- in Greek, and *-less* and *non*- in English convert a scalar into a marked form that stands for a set lower in the scalar ordering. In formal semantics an adjectival affix of this sort is interpreted by an operation on predicate extensions, i.e., by a function that takes a predicate extension as arguments and yields a predicate extension as values. Here we shall use $\downarrow$ to represent the operation on scalar extensions $R_n, \ldots, R_{-n}$ named by privative negation, and define it by the rule $\downarrow(R_j) = R_{j-1}$. That is, $\downarrow(R_j)$ is the rank set one step below R_j. We may then understand the syntax of the language to contain a predicate affix that "names" this operation. In formal semantics this affix would be considered an operator in the formal language. Accordingly, let us use the boldface symbol $\boldsymbol{\downarrow}$ as an operator on predicates, i.e., as an expression that attaches to a predicate to yield a predicate phrase, and stipulate that $\boldsymbol{\downarrow}$ has as its interpretation the operation $\downarrow$. Hence, if the extension of P_i is R_i, then the extension of $\boldsymbol{\downarrow}\ P_i$ is $\downarrow(R_i)$.

The second negation is the inverse operator to privative negation. It is an intensifier (the *α-intensivum* of classical Greek) as in *no, it's not hot, it's boiling; no, she isn't just pretty, she's ravishing; no, he wasn't simply doing his duty, he was heroic*. Semantically, prefixes like *super*- in Latin and English, and *hyper*- in Greek, convert a scalar into a marked form that stands for a set higher in the scalar ordering. It corresponds to an operation $\uparrow$ on $R_n, \ldots, R_{-n}$ such that $\uparrow(R_j) = R_{j+1}$. Accordingly, in a formal language we would expand the syntax to contain a boldface operator $\boldsymbol{\uparrow}$ on scalar predicates, and require of an acceptable model that if the extension of P_i is R_i, then the extension of $\boldsymbol{\uparrow}\ P_i$ is $\uparrow R_i$.

These two operators correspond to Proclus's negations "inferior to Being" and "superior to Being" respectively. The former is the Neoplatonic version of privative negation, common from the Pythagoreans onward, which Aristotle characterizes as the lack of a normal or natural property. Proclus explains it linguistically through a negation understood as a predicate affix that forms a predicate phrase that stands for a lower rank in the ontic order. The second operation is what Proclus calls

[23] This analysis draws on that of privative order within Boolean algebras in the Martin (2002).

hypernegation.[24] This is the special negation used in the Neoplatonic *via negativa* to characterize the higher levels of the ontic order. After its adoption by Pseudo-Dionysius[25] to express "divine names" and its importation into European philosophy by John Scotus Eriugena, it became a standard tool in "negative theology" for formulating assertions like *God is hypergood*.

The third negative affix ("negation") distinguished by Proclus is less relevant to our discussion here. It is a "mirroring" operator, often expressed in English by *un*- that converts a scalar at one rank in the positive extreme to one at a proportional rank in the negative. Often such a predicate has a lexically unmarked synonym, e.g., *unhappy* is synonymous with *sad*. Semantically this operator stands for an operation on $R_n, \ldots, R_{-n}$, which we will indicate with the symbol $^\circ$. Like the minus operation on integers, its function is to convert an extension at a given rank above the "midpoint" to an extension of corresponding rank below.[26] Relevant to our discussion here is the fact that this operator may be used as a test for the positive-negative direction of a scalar ordering. It is grammatically acceptable only for scalars that fall on the negative pole, e.g., both *ununhappy* and *unsad* are ungrammatical.[27]

Having introduced the relevant senses of negation and the operations that interpret them, we may now use them, especially privative negation, to explain the semantic sense of "mass" appropriate to scalar comparisons. Intuitively, a mass is something that admits of judgments of "more or less", and such judgments naturally suggest a process of measurement. As remarked earlier, however, not all scalar comparatives admit modification by measure phrases, nor are they appropriately interpreted by orderings definable in terms of numerical measurement. This is particularly true for the comparatives typically found in Neoplatonism and more generally in attributions of goodness and beauty. But goodness and beauty are in some sense "mass" concepts and subject to privation. There is moreover a more abstract sense of "mass" definable in semantic terms that admits of comparison but does not require numerical measurement.

The relevant concept of "mass" is defined in semantic rather than physical or ontological terms. We first define the notion of a *mass noun* (in English). It is one that satisfies the following criteria: it is grammatically and semantically acceptable to modify it by *some, more* and *less*; it lacks a plural form; and when it is true of something, it is not necessarily true of its mereological parts or wholes. In the case of scalars, a mass noun is frequently formed by adding the affix -*ness* to a scalar in the positive extreme of the scalar order. Often it is a scalar that is syntactically related to the comparative. For example, *happiness* is formed from the positive scalar *happy*. Moreover, if, as some grammarians maintain,[28] the comparative expression *x is more F than y* were

[24] *Commentary on the Parmenides*, p. 1172.

[25] Pseudo-Dionysius the Areopagite expresses this negation by the prefix *hyper*- and describes God by the predicates *hypergood, hyperdivine, hyperreal, hyperalive* and *hyperwise*. See Pseudo-Dionysius the Areopagite (1937).

[26] Algebraically, $^\circ$ is characterized as an operation that is an antitonic ($R \leq R'$ iff $R'^\circ \leq R^\circ$), idempotent ($R = R^{\circ\circ}$) unary operation such that $R_0 = R_0^\circ$. The logic and semantics of these three operators on scalars is explored more fully in the author's "Proclus and the Neoplatonic Syllogistic."

[27] See Seuren (1978), and Horn (1989).

[28] See Seuren (1973, 1984).

derived syntactically from the conjunction *x is F and y is not F, to the degree of n*, then the mass noun associated with the comparative would be *F-ness*.

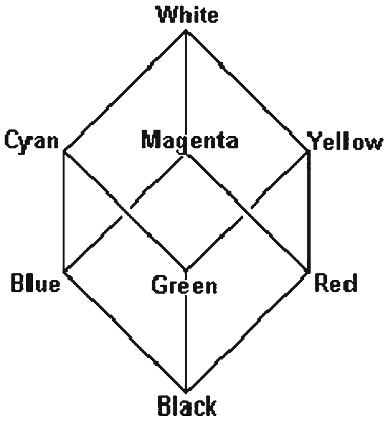
With these distinctions it is possible to explain natural language talk of "mass" and the use of mass nouns appropriate to comparatives, scalars, and their associated negations. Let us assume that *is more F than* is a comparative adjective associated to the scalar adjectives $P_1, \ldots, P_m$, and let these have as their extension respectively $\leq$, and $R_n, \ldots, R_{-n}$. Let us also agree on a way to talk about the referent of a variable x relative to an interpretation of the language. For this purpose let us use $d(x)$ to represent the interpretation of x. That is, relative to an interpretation of the language, the variable x is understood as an expression that stands for an entity in the domain of the interpretation and $d(x)$ is that entity. Recall that $U_{\leq}$ is the field of comparison over which $\leq$ is defined, and that $\downarrow$ is the privation operation on $R_n, \ldots, R_{-n}$. With these background definitions, we can state the truth conditions for two related uses of mass expressions in natural language: an absolute use as in the expression *x has some F-ness* and a comparative use as in *x has more F-ness than y*:

x has some F-ness is true relative to d if and only if $d(x)$ is in $U_{\leq}$.
x has more F-ness than y is true relative to d if and only if, for some R_i,

1. $d(x)$ is in R_i,
2. $d(y)$ is not in R_i, and
3. $d(y)$ is in $\downarrow R_i$.

Curiously, in modern times neither moral philosophers nor aestheticians make much of the fact that *goodness* and *beauty* are mass nouns. But that they are mass nouns is a fact of language. Moreover, that they are mass nouns has semantic implications. If the use of mass nouns is apt, then it follows that they are associated with comparative adjectives and an associated families scalar predicates, and a privative negation interpreted by a privation operation. It is a general feature of language that linguistic families of this sort presuppose interpretations over ranked ordered fields of progressively diminishing "masses." Under such an interpretation there is a perfectly coherent sense in which moral goodness and beauty are mass concepts that admit a well-defined concepts of privation.

In what remains of this section we shall show how two comparative notions may sometimes coincide at some levels but diverge at others. It will be helpful to start the discussion by considering the phenomenon of light, the famous metaphor used by Neoplatonists to explain the relation of the One to ontic descent. Light, to be sure, is an extensively measurable physical quantity. It may equally well, however, be described abstractly as an ordered structure with an associated privative operation. Consider the subtractive properties of white light. White light may be diminished by filtration in diverse ways that end up determining a structure of reduced "masses," each stage of which is a qualitatively different state of privation. Using a filter of one kind, white light may be subtracted so that only cyan light is allowed to pass. Using a different filter, only magenta light passes through, and by yet a third, only yellow light. If the cyan and the magenta filters are combined, they let pass only blue light. If the magenta and yellow are combined, only red light passes, and the combined cyan and yellow filters allow only green light. When all the filters are combined, no light passes through.



Here the three basic states determine what algebraists call a Boolean algebra. This case, moreover, may be generalized to fit all privative structures. Relative to a set of logical possibilities U, a *privation structure* may be identified with a Boolean algebra $<U, \leq, \wedge, \vee, -, 1, 0>$. Formally, $<U, \leq, \wedge, \vee, -, 1, 0>$ is an abstraction from the familiar Boolean algebra of subsets. In the abstract case $\leq$ is a partial ordering of the elements of U, $\wedge$ is a least upper bound or "meet" operation on U, $\vee$ is a greatest lower bound or "join" operation, and $-$ is a complement operation, 1 is a unique $\leq$-maximal element in U, and 0 a unique $\leq$-minimal element. If the set U is at most countable infinite, it may be thought of intuitively as a set of 2^n combinations of n "atomic" possibilities, and $\leq$ may be understood as a part-whole relation on their compounds. Consider, for example, Aristotle's favorite examples of privations: toothlessness, baldness and blindness. U might be the power set of all sets of human teeth, or of individual human hairs, or of the set containing the right and left eye. The various points in the structure are then the various degrees of diminished possession of teeth, hair, or eyes. In this way, by abstracting from such cases, it is appropriate to understand any Boolean algebra as a "privation structure."

Privation structures are relevant to explaining how Neoplatonists understand order because any single privation structure determines a number of distinct total orders. Relative to each of these orders, a comparative adjective and distinct family of scalars adjectives may be interpreted. The distinct orders arise because any of the various descending branch of a single finite Boolean algebra may be considered a distinct series of descending ranks. When conceived as an ordering on sets, this order may serve as the interpretation of a comparative adjective and the ranked sets as the extension of its associated family of scalar predicates. The union of these sets on the branch then constitutes the comparative's field of a comparison. Relative to a privation structure $<U, \leq, \wedge, \vee, -, 1, 0>$, let us define a (*finite non-empty connected sub-*) *branch* of U to be any finite subset of U all of whose elements are mutually ordered by $\leq$.[29] Let use assume that the branch B is the family of extensions $\{R_n, \ldots, R_{-n}\}$ that conform to this order in the following sense:

$x \leq y$ if and only if, for some i and j, $i \leq j$, x is in R_i, and y is in R_j.

[29] $B \neq \oslash$, $B \subseteq U$, B is finite, and $\forall x, y \in B$ $(x \leq y$ or $y \leq x)$.

We may then use the branch B to interpret a scalar family. The comparative adjective C stands for $\leq$, and its associated scalar adjectives $P_1, \ldots, P_m$ stand respectively for the series of ranked elements $R_n, \ldots, R_{-n}$. It then follows from the definitions that B forms the series of rank sets induced relative to $\leq$ and $\equiv_{\leq}$.

The fact that there is more than one branch down a single structure now makes it possible to explain how it may happen that different scalar families are interpreted relative to different branches of the same structure. That is, it is possible to interpret a given comparative and its scalar family over one sub-branch of the structure, and at the same time to interpret a different comparative with its scalar family over a collateral branch. Because some branches share some nodes but not others, it then follows that distinct scalar families interpreted over the same structure may have predicates with identical extensions at some levels but also predicates at different levels with disjoint extensions. Some scalars from two distinct orders would then be coextensive at some ranks but disjoint at others. This is exactly the possibility envisaged by the Neoplatonists for moral and aesthetic concepts. At higher ranks predicates coincide but at lower ranks they diverge.

5 Conclusions

From the considerations advanced to this point it is possible to show that the central claim of this paper follows. The claim is essentially a consistency result. Given the concepts so far defined, it is a straightforward matter to define a first order language with a two comparative predicates, *is morally better than* and *is more beautiful than*, each with its own family of monadic scalar predicates, and to define an acceptable interpretation of the predicates relative to distinct sub-branches of a privative structure of subsets such that these branches share some points but not others. It would then follow that there are predicates P and Q associated with the first comparative and predicates P' and Q' associated with the second that are assigned interpretations over the domain in such a way that:

1. P and P' have the same interpretations and are therefore true and false of the same entities in the domain, but
2. Q and Q' have disjoint interpretations so that there are entities of which Q is true but Q' is false, and others of which Q is false but Q' is true.

The two claims are consistent because it is possible to construe *is morally better than* and *is more beautiful than* as comparatives with associated scalars and mass nouns *goodness* and *beauty* interpreted over connected sub-branches of a Boolean algebra of sets in such a way that they share their higher but not lower nodes.

From the consistency result alone it follows that the examples in the introduction do not prove what they are purported to show. It is perfectly possible that the sentences in the examples are true, and therefore that some moral and aesthetic predicates have disjoint extensions, but at the same time that moral and aesthetic value may coincide at other levels with the result that predicates appropriate to those ranks would be coextensional. It is this possibility that Plato and his tradition envisage.

The discussion shows, I think, that the Platonic tradition was entertaining possibilities quite compatible with the meaning of comparative value terms understood quite generally as comparative adjectives with associated scalars and negations. Their theory was intended, in fact, to accommodate sublunary world repleat with the sort of mixed perfections and imperfections described in the introduction.

The fact, however, that the theory conforms to the general semantics of comparative adjectives and would be consistent with the truth of the examples of the introduction does not show that the theory is true. The general semantics of comparatives and its consistency with the truth of the examples will not alone show the stronger claim that in the actual world there are moral and aesthetic rankings and associated scalars that, given the actual meanings of terms, do coincide at some levels and others that do not. Are there reasons to think that moral and aesthetic terms, as we use them, do coincide at "higher levels" in our world?

As we saw, the Greeks commonly thought that the truly excellent person is both morally good and beautiful. The view is not a foreign as it may seem. In our culture angels are invariably depicted as physically beautiful, not just in Renaissance painting, but in Hollywood movies (Brad Pitt qua Lucifer notwithstanding). Mediaeval theology holds, reasonably on some level, that the glorified bodies of the elect after the Last Judgment will be as beautiful as their souls are good. Speakers of modern English share at least some similar intuitions. It is sensibilities of this sort that explain why beauty pageants require contestants to be not merely beautiful but talented and upright as well, and most of us, I think, would grant that although Mother Teresa and Mata Hari were both excellent in their own ways, it is nevertheless true that had Mother Teresa been beautiful or Mata Hari virtuous the world would have been a better place. Intuitions about such cases carry some persuasive force. To the degree that they do, they call for a semantics in which there is a "Platonic" shared or "global" sense of "value," one in which the morally good-and-beautiful is better than the simply good or the simply beautiful. To be sure, this variety of value would be rather abstract, more abstract than both simple moral virtue or simple beauty. But, if the cited intuitions are persuasive, the three are related. The standard predicates *morally good* and *beautiful* should then be understood as scalars interpreted over distinct orderings of "value" that coincide at higher levels.

Appendix: formal semantics

This appendix sets out the formal definitions of the ideas developed in the body of the paper, and a statement of the paper's main claim, which follows as a theorem directly from the definitions.

Definition of acceptable syntax

By an *acceptable syntax Syn* is meant a first order syntax that contains a designated set *Comp* of (at least two) binary (*comparative*) predicates C, such that for each there is distinct designated finite set of monadic (*scalar*) predicates $\{P_i\}_C$. In addition to the usual first-order expressions the syntax contains three unary predicate operators $\downarrow$, $\uparrow$, and $^\circ$ that are defined only on scalar predicates and that produce monadic predicates.

Definitions of background semantic concepts

Let $\leq$ be a preordering (transitive and antisymmetric) over its field $U_{\leq}$, and let $\equiv_{\leq}$ defined as $\{<x, y>|$ neither $y \leq x$ nor $x \leq y\}$ be an equivalence relation (reflexive, transitive and symmetric) over $U_{\leq}$. By $[x]$ is meant the $\equiv$-equivalence class of x under $\equiv_{\leq}$. A *rank set* relative to $\leq$ is any downward closure of the $\equiv$-equivalence class $[x]$ under $\leq$, i.e., $\{y \in U_{\leq}|y \in [x]$ or $y \leq x\}$. It follows that the strict inclusion relation $\subset$ defined on "ranks" is a linear (equivalently, total) order on its field, i.e., $\subset$ is non-reflexive, transitive, asymmetric, and connected (for any $x$and y, either $x \subset y$ or $y \subset x$). Moreover, $R_i \subset R_j$ iff, $R_i \neq R_j$ and R_j contains all elements that are at most as great as some element in R_i.[30]

Let $\leq$ be a preordering and $\equiv_{\leq}$ an equivalent relation over $U_{\leq}$. Then, $\leq$ and $\equiv_{\leq}$ are said to *induce a rank scale* $\{R_i\}_C$ on $U_{\leq}$ if and only if,

1. $\{R_i\}_C$ is a family of ranks sets relative to $\leq$ and $\equiv_{\leq}$ on $U_{\leq}$, and
2. there is a 1-1 onto monotonic mapping θ from $\{P_i\}_C$ to $\{R_i\}_C$ such that $i \leq j$ iff $\theta(P_i) \subset \theta(P_j)$.

It follows that a scale is unique and that there is a 1-1 mapping θ' from the set of $\equiv_{\leq}$- equivalence classes to $\{R_i\}_C$ such that for any equivalence classes $[x]$ and $[y]$ of $\equiv_{\leq}$, $[x] \subseteq \theta'([x])$ and, $x < y$ iff $\theta'([y]) \subset \theta'([x])$.

Let $\{R_i\}_C$ be a finite rank scale $R_n, \ldots, R_{-n}$. Then *the descending operation* $\downarrow$ on $\{R_i\}_C$ is defined $\downarrow(R_j) = R_{j-1}$, *the climbing operation* $\uparrow$ on $\{R_i\}_C$ is defined $\uparrow(R_j) = R_{j+1}$, and the mirroring operation $^\circ$ on $\{R_i\}_C$ is defined $^\circ(R_j) = R_{-j}$ (where $R_0 =^\circ (R_0)$). Thus, $^\circ$ converts a node at a given rank above the "midpoint" to a node of corresponding rank. It follows that $^\circ$ is an antitonic ($R \leq R'$ iff $R'^\circ \leq R^\circ$), idempotent ($R = R^{\circ\circ}$) unary operation such that $R_0 = R_0^\circ$.

Definition of acceptable model

An *acceptable model* for *Syn* is any $<A, F>$ such that A is non-empty, and F assigns n-place relation on A to each n-place predicate of *Syn* such that for every C in *Comp* and scalar family $\{P_i\}_C$,

1. there is a preordering $\leq$ (transitive and antisymmetric) over its field $U_{\leq}$;
2. $\equiv_{\leq}$ defined as $\{<x, y>|$ neither $y \leq x$ nor $x \leq y\}$ is an equivalence relation (reflexive, transitive and symmetric) over $U_{\leq}$;
3. there is a rank scale $\{R_i\}_C$ induced on $U_{\leq}$ relative to $\leq$ and $\equiv_{\leq}$;
4. $F(C) = \leq$;

[30] Algebraically, a rank set could equally well be defined as the upward closure of some $[x]$ under $\leq$, i.e., as $\{y \in U_{\leq}|y \in [x]$ or $x \leq y\}$. On this definition $\subset$ continues to be a total order. Though for our purposes here either definition would do, it is the second that is appropriate to Proclus because he holds that predicates stand for ontic stages that are explicitly not set-like but that nevertheless correspond isotonically to the sets of their causal effects (which are definitely not their "extensions"). His semantic order, therefore, is best represented by a relation < that ranks from top down on a field other than sets. See the author's "Proclus and the Neoplatonic Syllogistic."

5. F maps $\{P_i\}_C$ antitonically onto $\{R_i\}_C$ such that for any P_j and P_k in $\{P_i\}_C$, $j < k$ iff $F(P_k) \subset F(P_j)$;
6. $F(\downarrow P_i) = \downarrow F(P_i)$;
7. $F(\uparrow P_i) = \uparrow F(P_i)$;
8. $F(^\circ P_i) = {}^\circ F(P_i)$.

It is customary in the literature also to stipulate that scalars are indexed syntactically from left to right $P_1, \ldots, P_n$ in order of decreasing semantic rank so that the earlier a predicate in the list (the lower its subscript), the higher its "rank" relative to $\leq$.

Mass and semantics of mass expressions

Let a comparative *is more F than* be a comparative associated with the scalars $P_1, \ldots, P_n$, and let these be interpreted by $\leq$, and $R_n, \ldots, R_{-n}$, respectively. Then, we may introduce to the syntax the monadic predicate *F-ness* and binary predicate *has more F-ness than* stipulate that relative to a model M and variable assignment d,

1. *x has some F-ness* (x), which is read *x has some F-ness*, is true relative to M and d iff $d(x) \in U_{\leq}$, and
2. *x has more F-ness than y* is true relative to M and d iff, $\exists R_i(d(x) \in R_i, d(y) \notin R_i,$ and $d(y) \in \downarrow R_i)$.

Privation structures

Relative to a set of logical possibilities U, a *privation structure* is defined as any Boolean algebra $<U, \leq, \wedge, \vee, -, 1, 0>$. Relative to Boolean algebra, $B$is defined as a *(finite non-empty connected sub-) branch* of U iff $B \neq \oslash$, $B \subseteq U$, B is finite, and if $\forall x, y \in B(x \leq y$ or $y \leq x))$. Let $<U, \leq, \wedge, \vee, -, 1, 0>$ be a Boolean algebra, and B a branch of U. It follows that

1. B is a partition of $\cup B$;
2. B determines an equivalence relation on $\cup B$;
3. the relation $\subset$ of strict set inclusion on B is a total ordering; and
4. the elements of B may be listed as a finite series ordered by $\subset$ from the top down: $i < j$ iff $\{R_j\} \subset \{R_i\}$.

It follows that $B = \{R_i\}$ is the series of rank sets induced relative to $\leq$ and $\equiv_{\leq}$. The main conclusion of the paper now follows directly from the definitions.

Theorem

There is an acceptable syntax *Syn* with comparative $C =$ *is morally better than* with associated scalars $\{P_i\}_C$, and comparative $C' =$ *is more beautiful than* with associated scalars $\{P_i'\}_C$, a *model* $<A, F>$ for *Syn*, a Boolean algebra $<U, \leq, \wedge, \vee, -, 1, 0>$, and finite non-empty connected sub-branches B and B' of U such that

1. $F(C) =\leq$ on $\cup B$ such that
   (a) $\leq$ is a relation on $\cup B$,
   (b) $\leq$ is defined as $x \leq y$ iff $\exists i, j(i \leq j, x \in R_i$, and $y \in R_j)$, and
   (c) $\cup B = \cup\{R_i\} = U_{\leq,}$
2. $F(C') =\leq'$ on $\cup B'$ such that
   (a) $\leq'$ is a relation on $\cup B'$,
   (b) $\leq'$ is defined as $x \leq' y$ iff $\exists i, j(i \leq j, x \in R'_i$, and $y \in R'_j)$, and
   (c) $\cup B' = \cup\{R'_i\} = U'_{\leq}$,
3. for some $i < j$, $F(P_i) = F(P'_i)$ and $F(P_j) \neq F(P'_j)$.

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