

Conceptual Realism and the Nexus of Predication

1. Introduction

A universal, we have said, is what can be predicated of things. But what exactly do we mean in saying that a universal can be predicated of things? In particular, how, or in what way, do universals function in the nexus of predication?

In nominalism, there are no universals, and the only nexus of predication is the linguistic nexus between subject and predicate expressions. What this means in nominalism is that only predicates can be true or false of things.

But what are the semantic grounds for predicates to be true or false of things? Are there really no concepts as cognitive capacities involved in such grounds? What then accounts for the unity of a sentence in nominalism as opposed to a mere sequence of words? Can nominalism really explain the unity of the linguistic nexus?

2. Conceptualism

What underlies our capacity for language and predication in language, according to conceptualism, is our capacity for thought and concept formation, a capacity that is grounded in our evolutionary history and the social and cultural environment in which we live. Predication in thought is more fundamental than predication in language because what holds the parts of a sentence together in a speech act are the cognitive capacities that underlie predication in thought.

There are two major types of cognitive capacities that characterize the nexus of predication in conceptualism. These are (1) **a referential capacity**, and (2) **a predicable capacity**.

These capacities underlie our rule-following abilities in the use of referential and predicable expressions. Predicable concepts, for example, are the cognitive capacities that underlie our abilities in the correct use of predicate expressions.

When exercised, a predicable concept is what informs a speech or mental act with a predicable nature—a nature by which we characterize or relate objects in a certain way. A predicate expression whose use is determined in this way is then said to stand for the concept that underlies its use.

Referential concepts, on the other hand, are cognitive capacities that underlie our use of referential expressions. Referential concepts are what underlie the intentionality and directedness of our speech and mental acts. When exercised a referential concept informs a speech or mental act with a referential nature. A referential expression whose use is determined in this way is said to stand for the concept that underlies that use.

Referential and predicable concepts are a kind of knowledge, more specifically a knowing how to do things with referential and predicable expressions. They are not a form of propositional knowledge, i.e., a knowledge that certain propositions about the rules of language are true, even though they underlie the rule-following behavior those rules might describe.

Referential and predicable concepts are **objective** cognitive universals. Their objectivity does not consist in being independently real universals, however, i.e., they do not have the kind of objectivity universals are assumed to have in logical realism.

The objectivity of referential and predicable concepts consists in their being intersubjectively realizable cognitive capacities that enable us to think and communicate with one another.

As intersubjectively realizable cognitive capacities, moreover, concepts are not mental *objects* — e.g., they are not mental images or ideas as in the traditional conceptualism of British empiricism — though when exercised they result in objects, namely speech and mental acts, which are certain types of events.

As cognitive capacities that (1) may never be exercised, or (2) that may be exercised at the same time by different people, or (3) by the same person at different times, concepts are not objects but have an unsaturated nature like, but not the same as, the unsaturated nature concepts are said to have in Frege's ontology.

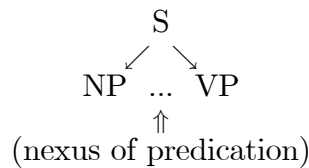
Unlike the concepts of Frege’s ontology, however, which are functions from objects to truth values, the concepts of conceptualism are cognitive capacities that when exercised result in a speech or mental act (which may be either true or false).

Another important feature of predicable and referential concepts is that each has a cognitive structure that is complementary to the other — a complementarity that is similar to, but also different from, that between the functions that predicates stand for and those that quantifier phrases stand for in Frege’s ontology.

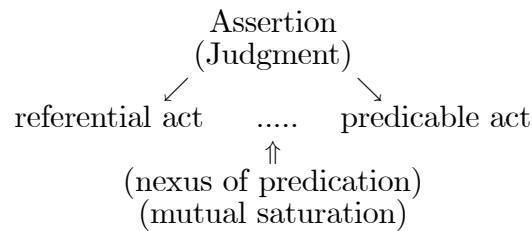
*In conceptualism, it is the complementarity between predicable and referential concepts that underlies **the mental chemistry of language and thought**. In particular, as complementary, unsaturated cognitive capacities, predicable and referential concepts mutually saturate each other when they are jointly exercised in a speech or mental act.*

In conceptualism, the nexus of predication is the joint exercise of a referential and a predicable concept, which interact and mutually saturate each other in a kind of mental chemistry.

A judgment or basic speech act of assertion, for example, is the result of jointly exercising a referential and a predicable concept that underlie the use, respectively, of a noun phrase (NP) as grammatical subject and a verb phrase (VP) as predicate:



In conceptualist terms this act can be represented as follows:



Here, of course, by a referential act we mean the result of exercising a referential concept, and by a predicable act the result of exercising a predicable concept.

3. Referential Concepts

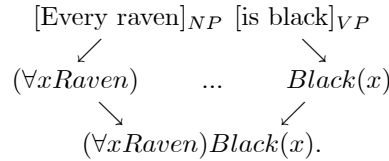
Now by a referential expression we do not mean just proper names and definite descriptions, such as ‘Socrates’ and ‘The man who assassinated Kennedy’, but any of the types of expressions that function in natural language

as grammatical subjects, which includes quantifier phrases such as ‘All citizens’, ‘Most democrats’, ‘Few voters’, ‘Every raven’, ‘Some raven’, etc.

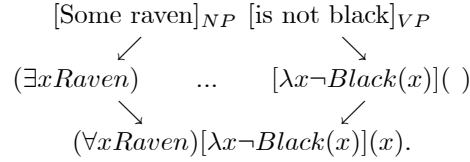
Also, because only a quantifier phrase has the kind of unsaturated structure that is complementary to a predicate expression, we will represent all of these different kinds of referential expressions as quantifier phrases.

Referential concepts are what quantifier phrases stand for in conceptual realism, just as predicable concepts are what predicate expressions stand for.

A judgment that every raven is black, for example, is the result of jointly exercising, and mutually saturating, (a) the predicable concept that ‘is black’ stands for with (b) the referential concept that ‘Every raven’ stands for.



A negative judgment expressed by ‘Some raven is not black’ is analyzed similarly as:



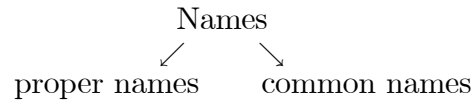
The negation in this judgment is internal to the predicate, which is analyzed as the complex predicate expression $[\lambda x \neg \text{Black}(x)]()$.

The logical grammar of conceptual realism must be expanded, accordingly, to include a category of common nouns, or what we will call common names. Common names, as the above examples indicate, will occur as parts of referential-quantifier phrases.

Actually it is not just common names that can occur as parts of quantifier phrases, but proper names as well. In other words, instead of a category of common names, what we now add to the logical grammar of conceptual realism is a **category of names**, which includes proper names as well as common names.

The nexus of predication in conceptual realism, as we have said, is the mutual saturation of a referential act with a predicable act, which means that singular reference, e.g., the use of a proper name as a grammatical subject, is not essentially different from general reference, such as the use of the quantifier phrases ‘Every raven’ and ‘Some raven’ in the above examples.

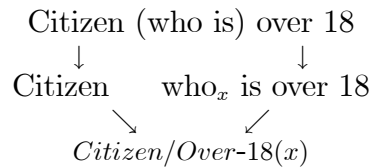
Thus, instead of proper names and common names being different types of expressions, in conceptual realism we have just one logical category of *names*, with common names and proper names as two distinct subcategories.



What the difference is between proper names and common names is a matter we will take up in the next section in our discussion of singular reference.

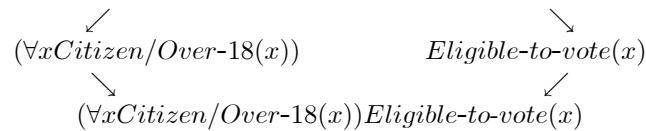
Now in addition to complex predicates, which are accounted for by λ -abstracts, we also need to account for complex referential expressions. What we mean by a complex referential expression is a quantifier phrase containing a complex common name, i.e., a common name restricted by a defining relative clause.

To syntactically generate a complex common name, we use a forward slash, ‘/’, as a binary operator on (a) expressions from the category of common names and (b) formulas as defining relative clauses. For example, by means of this operator we can symbolize the restriction of the common name ‘citizen’ to ‘citizen (who is) over eighteen’, or more briefly, ‘citizen (who is) over-18’, as follows:



An assertion of the sentence ‘Every citizen (who is) over eighteen is eligible to vote’ can then be symbolized as:

[Every citizen (who is) over eighteen]_{NP} [is eligible to vote]_{VP}



There is a difference in conceptual realism, we should note, between an initial level at which the logical analysis of a speech or mental act of a given context is represented, and a subsequent, lower level where inferences and logical deductions can be applied to those analyses.

This means that we need rules to connect the logical forms that represent speech and mental acts with the logical forms that represent the truth conditions and logical consequences of those acts in a more logically perspicuous way.

The standard quantifier phrases of our previous lectures are now understood as implicitly containing the common name ‘object’.

That is, the quantifier phrases

$(\forall x)$ and $(\exists x)$

are now read as

$$(\forall xObject) \quad \text{and} \quad (\exists xObject).$$

Now we can connect our new way of representing speech and mental acts on the initial level of logical analysis with the more standard way on the lower, deductive level, by means of such rules as the following:

$$(MP1) \quad (\forall xA)F(x) \leftrightarrow (\forall x)[(\exists yA)(x = y) \rightarrow F(x)],$$

$$(MP2) \quad (\exists xA)F(x) \leftrightarrow (\exists x)[(\exists yA)(x = y) \wedge F(x)].$$

For example, by means of these rules we can see why the argument:

$$\begin{array}{l} (\forall xA)F(x) \\ (\exists yA)(b = y) \\ \therefore F(b) \end{array}$$

is valid in this logic.

Complex referential expressions can also be decomposed by such rules so that the relative clause is exported out. The following rules suffice for this purpose:

$$(MP3) \quad (\forall xA/G(x))F(x) \leftrightarrow (\forall xA)[G(x) \rightarrow F(x)],$$

$$(MP4) \quad (\exists xA/G(x))F(x) \leftrightarrow (\exists xA)[G(x) \wedge F(x)].$$

Thus, with these rules we can see why the argument:

$$\begin{array}{l} (\forall xA/G(x))F(x) \\ (\exists yA)(b = y) \wedge G(b) \\ \therefore F(b) \end{array}$$

is also valid in this logic.

4. Singular Reference and Proper Names

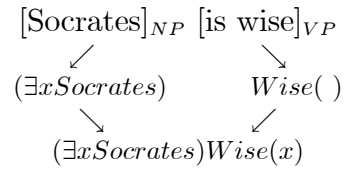
The previous examples involve forms of general reference, in particular to *every raven* and to *some raven*, respectively. This is different from most modern theories of reference, which deal exclusively with singular reference.

The sentence ‘Socrates is wise’, for example, is usually symbolized as $Wise(Socrates)$, or more simply as $F(a)$, where F represents the predicate ‘is wise’ and a is an object constant representing the proper name ‘Socrates’.

Some philosophers have even argued against the whole idea of general reference, claiming that logically there can be only singular reference.

Now, as we have noted in our second lecture, a proper name can be used either with or without an existential presupposition that the name denotes. As it turns out, it is conceptually more perspicuous and logically appropriate that we use the quantifiers \exists and \forall to indicate which type of use is being activated in a given speech or mental act.

Thus, for example, we can use $(\exists x Socrates)$ to represent a referential act in which the proper name ‘Socrates’ is used with existential presupposition, i.e., with the presupposition that the name denotes.



In this initial-level analysis, the existential quantifier phrase $(\exists x \text{Socrates})$ indicates that a presupposition that the name ‘Socrates’ denotes is being made in the referential act.

In a lower-level analysis, where deductive transformations occur, both proper names and common names can be transformed into singular terms and allowed to occur in place of object variables as well as parts of quantifier phrases. In this lower-level logical framework, the above expression is equivalent to the form it has in first-order “free” logic; i.e., the following is valid in the lower-level logical framework:

$$(\exists x \text{Socrates})\text{Wise}(x) \leftrightarrow (\exists x)[x = \text{Socrates} \wedge \text{Wise}(x)].$$

Note that although the right-hand side has the same truth conditions as the left, it does not represent the cognitive structure of the speech or mental act in question.

What the right-hand side, i.e.,

$$(\exists x)[x = Socrates \wedge Wise(x)]$$

says is:

Some object is identical with Socrates
and it is wise.

Now just as the existential quantifier, \exists , indicates that a proper name is being used with existential presupposition, so too the universal quantifier, \forall , indicates that the name is being used without existential presuppositions.

A referential use of the proper name 'Pegasus', for example, might well be without an existential presupposition that the name denotes, in which case it is appropriate to represent that use as $(\forall x Pegasus)$. Thus, the sentence 'Pegasus flies', where the name 'Pegasus' is not being used with existential presupposition can be symbolized as

$$(\forall x Pegasus) Flies(x),$$

which in our lower-level logical framework is equivalent to

$$(\forall x)[x = Pegasus \rightarrow Flies(x)].$$

Now the formula,

$$(\forall x)[x = Pegasus \rightarrow Flies(x)]$$

has the same truth conditions as ‘Pegasus flies’, but it does not represent the cognitive structure of that speech act. Rather, what it says is,

Every object is such that if it is (identical with) Pegasus, then it flies.

5. Definite Descriptions

For an account of definite descriptions in conceptualism, which we will not go into here, see:

http://www.stoqnet.org/lat_notes.html, Course 50547, lecture 5, §6.

6. Nominalization as Deactivation

Not all speech or mental acts are assertions in which a referential and a predicable concept are exercised.

A denial, for example, is not an assertion in which a referential act is exercised. Nor for that matter are either the antecedent or the consequent of a conditional.

Unlike a basic assertion in which the nexus of predication is the mutual saturation of a referential and a predicable concept, no referential concept is being exercised in a conditional assertion.

Similarly, a denial that some raven is white is not an act in which reference is made to every raven and asserting of it that it is not white.

Grammatically, the denial can be analyzed as follows,

[That some raven is white]_{NP}[is not the case]_{VP}

where the sentence ‘Some raven is white’ has been nominalized and transformed into a grammatical subject.

In this transformation the quantifier and predicate phrases of the sentence ‘Some raven is white’ are “deactivated,” indicating that the referential and predicable concepts these phrases stand for are not being exercised.

The denial is not about a raven but about the propositional content of the sentence — namely, that it is false, i.e., not the case.

We could make this deactivation explicit by symbolizing the denial as,

$$\textit{Not-the-Case}[(\exists x \textit{Raven})\textit{White}(x)],$$

where the brackets around the formula $(\exists x \textit{Raven})\textit{White}(x)$ indicate that the sentence has been transformed into an abstract singular term — i.e., an expression that can occupy the position of an object variable where it denotes the propositional content of the sentence.

It is more convenient, however, to retain the usual symbolization, namely,

$$\neg(\exists x \textit{Raven})\textit{White}(x),$$

as a symbolic representation of the denial.

The important point here is that unlike the logically equivalent sentence,

$$(\forall x \textit{Raven})\neg\textit{White}(x)$$

no reference is being made to ravens in the speech or mental act in question. This is important because this last sentence could be used in an affirmative assertion to refer to every raven. Qua speech or mental act, however, a denial is not the same as an affirmation.

In conceptualism, as already noted, we distinguish the level of analysis at which a logical form represents the cognitive structure of a speech or mental act from a lower level at which a logically equivalent logical form gives a more perspicuous representation of the truth conditions of that act.

Now deactivation applies to a predicate not only when it is nominalized or when it occurs within a nominalized sentence, but also when its infinitive or gerundive form occurs in a speech or mental act as part of a complex predicate.

In other words, deactivation also applies directly to nominalized predicates occurring as parts of other predicates.

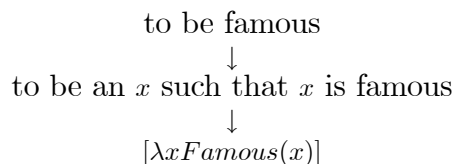
Consider, for example, the predicate phrase ‘is famous’, which can be symbolized as a λ -abstract:

$$[\lambda x Famous(x)]$$

as well as simply by:

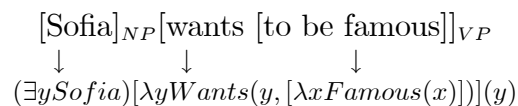
$$Famous().$$

The λ -abstract is preferable as a way of representing the infinitive ‘to be famous’, which is one form of nominalization:



Now the sentence ‘Sofia wants to be famous’ does not contain the active form of the predicate ‘is famous’ but only a nominalized infinitive form as a component of the complex predicate ‘wants to be famous’. When asserting this sentence we are not asserting that Sofia is famous, in other words, where the predicable concept that ‘is famous’ stands for is activated, i.e., exercised; rather, what the complex predicate ‘wants to be famous’ indicates is that the predicable concept that ‘is famous’ stands for has been deactivated.

The whole sentence can be symbolized as



Nominalized predicates do not denote the concepts that predicates stand for in their role as predicates, because, as we have already noted in a previous lecture, predicable concepts have an unsaturated nature and therefore cannot be objects.

As an abstract singular term, what a nominalized predicate denotes is the intensional content of the predicable concept the predicate otherwise stands for. The intensional content of a predicable concept in conceptual realism is the result of a projection onto the level of objects of the truth conditions determined by the concept's application in different possible contexts of use.

It is important to note here that the complex predicate

$$[\lambda y \textit{Wants}(y, [\lambda x \textit{Famous}(x)])]$$

does not represent a real relation between Sofia and the intensional object that the infinitive 'to be famous' denotes.

What the complex predicate stands for is a predicable concept, which as a cognitive capacity has no more internal complexity than any other predicable concept.

What is complex is the predicate expression and the truth conditions determined by the concept it stands for — i.e., the conditions under which the predicate can be true of someone in any given possible context of use.

It is a criterion of adequacy of any theory of predication that it must account for predication even in those cases where a complex predicate contains a nominalized predicate as a proper part, as well as the more simple kinds of predication where predicates do not have an internal complexity.

What this criterion indicates is one of the reasons why conceptualism alone is inadequate as a formal ontology and needs to be extended to include an intensional realism of abstract objects as the intensional contents of both denials and assertions as well as of our predicable concepts.

7. The Intensional Content of Referential Concepts

The fundamental insight into the nature of *abstract objects* in conceptual realism is that we are able to grasp and have knowledge of such objects as the objectified truth conditions of the concepts whose contents they are.

This “object”-ification of truth conditions is realized through a reflexive abstraction in which we attempt to represent what is not an object — e.g., an unsaturated cognitive structure underlying our use of a predicate expression — as if it were an object. In language this reflexive abstraction is institutionalized in the rule-based linguistic process of nominalization.

Now we do not assume an independent realm of Platonic forms in conceptual realism in order to account for abstract objects and the logic of nominalized predicates. Conceptual realism is not the same as either logical realism or conceptual Platonism. Some of the reasons why this is so are:

(1) *The abstract objects of conceptual realism are not entities that are predicated of things the way they are in logical realism and conceptual Platonism — i.e., they are not unsaturated entities and therefore they do not have a predicative nature in conceptual realism.*

(2) *The abstract objects of logical realism and conceptual Platonism exist independently of the evolution of culture and consciousness, whereas in conceptual realism all abstract objects, including numbers, are products of the evolution of language and culture.*

Nevertheless, although they are products of cultural evolution, they also have both a certain amount of autonomy and an essential role in the continuing evolution and development of knowledge and culture.

(3) *In logical realism, abstract objects are objects of direct awareness, whereas in conceptual realism all knowledge must be grounded in psychological states and processes. In other words, we cannot have knowledge of abstract objects if our grasp of them as objects must be through some form of direct awareness.*

According to conceptual realism we are able to grasp and have knowledge of abstract objects only as the intensional contents of the concepts that underlie reference and predication in language and thought.

That is, we are able to grasp abstract objects as the “object”-ified truth conditions of our concepts as cognitive capacities.

The reflexive abstraction that transforms the intensional content of an unsaturated predicable concept into an abstract object is a process that is not normally achieved until post-adolescence.

An even more difficult kind of reflexive abstraction also occurs at this time. It is a **double reflexive abstraction** that first transforms a referential concept such as what the quantifier phrase ‘a unicorn’ stands for into a predicable concept, such as *being a concept under which a unicorn falls*, and then secondly transforms that predicable concept into an abstract object.

The full process from referential concept to abstract object is doubly complex because it involves a reflexive abstraction on the result of a reflexive abstraction.

Where A is a name (proper or common, and complex or simple), and Q is a quantifier (determiner), we define the predicate that is the result of the first reflexive abstraction as follows:

$$[QxA] =_{\text{df}} [\lambda x(\exists F)(x = F \wedge (QxA)F(x))].$$

In this definition the quantifier phrase (QxA) is transformed into a complex predicate (λ -abstract), which can then be nominalized in turn as an abstract singular terms that purports to denote the intensional content of being a concept F such that $(QxA)F(x)$.

Consider, for example, an assertion of the sentence ‘Sofia seeks a unicorn’, which can be analyzed as follows:

$$\begin{array}{c}
[\text{Sofia}]_{NP}[\text{seeks} [\text{a unicorn}]]_{VP} \\
\downarrow \quad \downarrow \quad \downarrow \\
(\exists x \text{Sofia})(\lambda x \text{Seek}(x, [\exists y \text{Unicorn}])(x))
\end{array}$$

No reference to a unicorn is being made in this assertion. Instead, the referential concept that the phrase ‘a unicorn’ stands for has been deactivated in the speech act.

This deactivation is represented on the initial level of analysis by transforming the quantifier phrase into an abstract singular term denoting its intensional content.

Note that the relational predicate ‘seek’ in this example is not extensional in its second argument position. What that means is that on the lower level of representing truth conditions and logical consequences, the sentence does not imply that there is a unicorn that Sofia seeks.

But the different assertion that Sofia finds a unicorn, which is symbolized in an entirely similar way:

$$\begin{array}{c} \text{Sofia}_{NP}[\text{finds} [\text{a unicorn}]]_{VP} \\ \downarrow \quad \downarrow \quad \downarrow \\ (\exists x \text{Sofia})[\lambda x \text{Finds}(x, [\exists y \text{Unicorn}])](x) \end{array}$$

does imply that there exists a unicorn, and moreover that it has been found by Sofia. That is, the following

$$(\exists y \text{Unicorn})(\exists x \text{Sofia}) \text{Finds}(x, y).$$

is a logical consequence of the above sentence.

Thus, even though the two different sentences,

$$\begin{aligned}
 &(\exists x \textit{Sofia})[\lambda x \textit{Seek}(x, [\exists y \textit{Unicorn}])(x)] \\
 &(\exists x \textit{Sofia})[\lambda x \textit{Find}(x, [\exists y \textit{Unicorn}])(x)]
 \end{aligned}$$

have the same logical form, only one of them implies that there is a unicorn.

The reason why the one sentence implies that there is a unicorn and the other does not is that the relational predicate ‘find’, but not the predicate ‘seek’, is extensional in its second argument position. The extensionality of ‘find’ is represented by the following meaning postulate:

$$[\lambda x \textit{Finds}(x, [\exists y A])] = [\lambda x (\exists y A) \textit{Finds}(x, y)].$$

By identity logic and λ -conversion, the following is a consequence of this meaning postulate,

$$\begin{aligned}
 &(\exists x \textit{Sofia})[\lambda x \textit{Finds}(x, [\exists y A])](x) \leftrightarrow \\
 &(\exists x \textit{Sofia})(\exists y A) \textit{Finds}(x, y)
 \end{aligned}$$

Of course, there is no meaning postulate like this for the intensional predicate ‘seek’.

8. Concluding Remarks

We conclude by listing the following observations about the nexus of predication in conceptual realism.

- The nexus of predication in conceptual realism is what holds together in thought and speech the exercise of a referential and predicable concept.
- It is what accounts for the unity of a thought or speech act that is the result of jointly exercising a referential and predicable concept.
- A unified account of both general and singular reference can be given in terms of this nexus. Such a unified account is possible because the category of names includes both proper and common names.
- A unified account can also be given in terms of this nexus for predicate expressions that contain abstract noun phrases, such as infinitives and gerunds.
- The same unified account also applies to complex predicates containing quantifier (referential) phrases as direct-object expressions of transitive verbs, such as the phrase ‘a unicorn’ in ‘Sofia seeks a unicorn’.

Conceptually, the content of such a quantifier phrase and the referential concept it stands for is “object”-ified through a double reflexive abstraction that first transforms the referential concept into a predicable concept, and then, by deactivation and nominalization, transforms the resulting predicable concept into an abstract object that is the content of both the referential and the predicable concept. All *direct objects* of speech and thought are intensionalized in this way so that a parallel analysis is given for ‘Sofia finds a unicorn’ as for ‘Sofia seeks a unicorn’. And yet, relations, such as *Finds*, that are extensional in their second argument positions can still be distinguished from those that are not, such as *Seeks*, by meaning postulates.