

A Philosophy of Language: Metaphysics or Conceptual Analysis?

Abstract: The nature of 'metaphysics' and 'formal semantics' are critically examined. A *speaker theory of reference* is introduced as an alternative to *semantic theories of reference*. The concept of 'proposition' is analyzed. The 'descriptive-prescriptive' theory of speaker meaning is presented. The boundaries of what is knowable are sketched.

The methodology practiced here will be that of *conceptual analysis* where we will critically inspect our intuitive beliefs and semantic intentions in a number of epistemic contexts. The positive goal of this analysis is to measure (and hypothesize) speaker intentions (and speaker meaning) as best-explanation hypotheses about what 'information' (or 'propositional content') is conveyed by a speaker's utterance of a proposition in various contexts. This will be contrasted with *metaphysics* which primarily pursues questions about 'existence,' 'identity,' 'kinds', and 'necessity.'

In this essay, I wish to *dispel* the notion that descriptive metaphysics should seek information about 'reality.' Like logical positivism, I'm skeptical of many of the ongoing theories in metaphysics. I contend that philosophy is best served by avoiding the overuse of the terms 'thing,'¹ 'object,' 'particular,' 'universal,' 'property,' 'abstract object,' 'meaning,' 'linguistic reference,' 'singular term,' 'general term,' 'aboutness,' 'possible world,' 'rigid designator,' '*a priori- a posteriori*,' 'analytic-synthetic,' 'rationality,' 'experience,' 'fact,' 'attitude,' 'normative,' 'information,' 'reliability,' 'sensitivity,' 'safety' and 'speech act'. Discussions of metaphysical 'necessity,' 'possibility,' 'impossibility,' and 'contingency' are misplaced and overemphasized. If we avoid excessive attention to these concepts, I believe that we can have a better explanation of the epistemology and semantics of natural and artificial language assertions and a more informative philosophy of language.

Metaphysics Seeks Information about 'Reality.'

Modern philosophers who are preoccupied with metaphysics tend to believe that they are investigating the fundamental structure of reality. Metaphysics is understood to be the most general of all disciplines seeking to identify the nature, constitution, and structure of *all that there is*. It seeks *a priori* 'conceptual truths.' Metaphysics is

¹ Instead of 'thing' I prefer 'entity.' Lyons (1995, p. 297) states that at the limit of generality is 'entity' which can be used to refer to physical and non-physical objects and is derived from a Latin word which was deliberately created by philosophers to have exactly the degree of generality that it does have.

thought to be the conceptually necessary backdrop to every other discipline. It aspires for universality by identifying *the categories* that particular things belong to in virtue of their existence and identity conditions. It asks what categories of objects can be identified as constituting parts of reality. The word 'reality' may be interpreted as meaning 'all that exists.' The discipline seeks to develop a conceptual framework involving the notions of object, existence, identity, property, relation, necessity, similarity, dissimilarity, possible world, temporality, persistence, and causation, among others.

The following are some standard metaphysical questions: What objects exist and how are they identified? What is the status of concrete objects (particles, people, planets, toothpaste, etc.) compared to the status of so-called abstract objects (properties, numbers, necessity, sets, meanings, whiteness, etc.) that are not in space or time? Is 'existence' a property? The problem of ontology (i.e., of being, existence) is a problem of placement. Is everything that exists just physical (or material); or in addition, do non-spatiotemporal abstract things exist as a part of reality (and how are they identified)? For an object (or kind) to exist it seems that the object must have *essential properties* (in contrast to *accidental properties*) in order to have an identity. Are truths about identity in some way necessary? What is a property? Properties are said to be the attributes, features, traits, or aspects of things; and are located where they are instanced and depend on things that instantiate them. Some metaphysicians search for the identity (or persistence) conditions of different kinds of objects that make them come into being and go out of existence. The assumption that reality has a modal structure is popular in metaphysics: What are we talking about when we say, 'things might have been otherwise?' What is the status of counter-factual assertions? How can we know the truths of mathematics when they seem to require abstract objects? Do mathematical objects have a structure and properties independent of what a mathematician believes? What is the nature of mathematical entities (as universals) if they in fact exist? How can we talk about things that don't exist? Do fictional objects exist? Metaphysics seeks an account of 'what there is' and 'how things are' in the most general terms possible.

E.J. Lowe (2011) says that metaphysics may be characterized as the science of the possible, charged with charting the domain of objective or real possibility, which is an

indispensable prerequisite for the acquisition of any empirical knowledge of actuality (p. 99). Lowe states that metaphysics and empirical science complement each other (p. 102). Metaphysics is similar to mathematics and logic as being an *a priori* science about mind-independent reality. He says that it is meaningful to talk about 'reality as a whole' and about what exists. (Even if just 'physical matter' exists as ontologically fundamental, this doesn't imply that nothing more exists).

Cynthia MacDonald (2005) says that:

...metaphysics and empirical science differ in their methodologies in the way that they treat their subject matter. Whereas the method of arriving at knowledge employed in the empirical sciences is the empirical method-- the method of sensory observation and experimental test, *the method in metaphysics* for arriving at knowledge *is by means of the intellect*, or by understanding, thought, *and the application of logical rules* that govern transitions in such thought, *without appeal to sensory experience...* metaphysics arrives at knowledge in ways that are *justified a priori* (or independently of appeal to sensory experience). (p. 4, italics added).

MacDonald observes that because metaphysics is *a priori*, the propositions of metaphysics have traditionally been conceived as necessary rather than contingently true. If true at all, they concern not only what is the case, but what must be the case (p. 8). She says that metaphysics is not fundamentally about whether items of this kind or that kind exist; it is about what it is for items of this kind or that kind to have a nature, and what that nature might be (p. 22). What are the identity conditions (or essences) for individual things and/or kinds of things, such that without these necessary (essential) conditions, the object would no longer exist?

What is 'metaphysical necessity?'

The concept of 'necessity' has played a prominent role in both metaphysics and mathematical philosophy since ancient times. Pythagoras was a mathematician and philosopher concerned about 'necessity.' Plato's theory of the Forms (and their necessity) assumes to examine 'abstract entities' beyond space and time. In developing a syllogistic logic, Aristotle was keenly interested in the relations of deductive necessity. For Aristotle, metaphysics examines 'being' qua 'being' so that *the most general features of reality* are comprehended by *abstracting* from specific features of particular objects.

Following Leibniz in the seventeenth century and using an 'object-property-identity' terminology, many contemporary philosophers have become interested in 'possible worlds' necessity as having an explanatory role for logic and epistemology. Certain propositions are thought to be necessarily true, possibly true, contingently true, or necessarily false. These debates involve the status of 'sentences' under certain model theoretic conditions. In addition, metaphysical debates about 'necessity' are often analyzed in terms of 'counterfactuals' and 'conceivability.' It is claimed that there is knowledge of (1) *necessary truths*, e.g., ' $2 + 2 = 4$,' which cannot fail to be true, and (2) *contingent truths*, e.g., 'Obama was the 44th President of the United States,' which, while true, might have been false. The truth of a sentence (or proposition) asserted in context is understood as either contingent or necessary. This sort of necessity/possibility involves a commitment to the existence (by stipulation) of possible worlds in order to account for the epistemic status of modal assertions. The semantic properties of sentences (e.g., necessity, possibility, impossibility, contingency) are understood in terms of possible worlds and from axioms of metaphysics, logic, and set theory.

It is claimed by metaphysicians that ordinary sentences are not used to merely talk about how things actually are, but they are also used to talk about how things (e.g., individual objects, ways of being) could have been different. The 'meaning' of a word or sentence (asserted in context) is understood as a referential concept and must be analyzed in terms of the notion of an extension. The referential force of a linguistic expression can extend beyond objects in the actual world to objects in other possible worlds. These two facets of 'meaning' indicate that the meaning of a *non-logical expression* is a *set theoretic entity*, which is a function of possible worlds to extensions. It is a function that assigns to each possible world *the extension the expression has* when we *use it* in talking about that world. Thus, singular terms (e.g., proper names, definite descriptions) have as their meaning a function from worlds to objects; the meaning of n-place predicate is a function from worlds to sets of ordered n-tuples; and the meaning of a declarative sentence is a function from worlds to truth values. The concept of 'possible world' should shed light on what is called the 'nature' of modality. Again, a proposition is 'necessarily true' if it is true in all possible worlds, or in other words, a 'necessary proposition' is one that could

not be false. A proposition is 'contingent' if it is true in some possible worlds, and false in others. A 'necessary falsehood' is true in no possible world.²

Possible-worlds modal realism allows that there are essential properties of an object which are just those properties, that without them, the object could not be itself. A property possessed by a given object *x* is 'essential' only if *x* has this property in all possible worlds in which *x* exists. For example, the object Ludwig van Beethoven (1770-1824) was a person essentially, but only a piano player accidentally. Beethoven might not have played piano in another world (a contingent property), where he exists, but he is essentially a person (a necessary property). According to orthodoxy, 'metaphysical possibility' cannot be reduced to linguistic rules and conventions: it constitutes a mind-independent subject matter for thought and talk.

Tomasz Bigaj (2012) defends David Lewis's (1986) notion of modal realism: "The main strength of modal realism lies in its seriously reductive character...virtually all troublesome aspects of abstract objects can be reduced...to concrete things, and collections thereof. Take for instance the notion of a proposition...expressed by the sentence 'Paris is the capital of France' (which) is usually assumed to be an abstract, non-spatiotemporal object. But in modal realism, this proposition is simply identified with the set of all possible worlds in which Paris is indeed the capital of France. Thus, propositions are defined as sets of possible worlds. In this approach the fact that a given proposition *P* (which is a set of worlds) is true in a world *w* is concisely expressed as the statement '*w* is an element of *P*.' A slightly more complex reduction is also possible in the case of properties. A property of, let's say, being green, can be defined as the function which assigns to each possible world the set of all its green things. This definition has a clear advantage over the identification of properties with sets of objects in the actual world, because it enables to differentiate two distinct properties which only happen to be co-extensional (which apply to the same objects in the actual world). Thus, the property of having a heart and the property of having kidneys are two different properties, because

² Loux (1979) maintains that a variety of forms of discourse can be accommodated within the framework of possible worlds: discourse involving ascriptions of modality (both *de re* and *de dicto*), counterfactual discourse, discourse about meanings, and discourse about intentional abstract entities. Loux claims that possible worlds are part of the ontology of common sense.

there are possible worlds in which organisms equipped with hearts don't have kidneys" (p. 51).

Ontological categories

Simplifying a bit, an outline of the ontology (an axiomatization) of a traditional hierarchal *a priori* metaphysics is as follows:

- 1) Entities exist (assume a non-empty universe).
- 2) All entities are either 'universal' or 'particular.'
- 3) Universals can be divided into 'properties' or 'relations.'
- 4) Particulars can be divided into 'objects' or 'tropes.'
- 5) Objects can be divided into 'concrete' or 'abstract.'

The top-most category, the most general of them all, is that of entity or being. The second highest level is that of *particulars* and *universals*. Particulars are individuated by their spatiotemporal location (e.g., a chair). Particulars are objects that can only exemplify but are never exemplified themselves. A universal is thought to be something that can be found (wholly present) in many places (e.g., redness). Universals are distinguished into *properties* or *relations*, and particulars can be divided into *objects* or *tropes*. *Concrete objects* and *abstract objects* are likewise presented as mutually exclusive and exhaustive categories of objects. Examples of 'concrete objects' include atoms, people, buildings, goats, planets, stamps, and so on. 'Abstract objects' are defined as objects that do not exist in space or time and are therefore entirely non-physical and non-mental. Mathematical objects such as sets, geometrical figures, properties, relations, events, are thought to be examples of abstract objects. The ontological question for the philosophy of mathematics is, do abstract objects exist, and if so, how can persons have knowledge of them? Realists maintain that abstract objects exist, and nominalists deny it.

"Universals" have been traditionally divided into 'properties' or 'relations.' A 'property' is understood as a quality, aspect, feature, peculiar to an individual or a thing. Properties (i.e., attributes, qualities, features, characteristics) are predicated of things or attributed to them. Properties are 'entities' that individual things are said to bear, possess, or exemplify. Predicates are, likewise, thought to express properties and are

exemplifiable. Predicate terms (e.g., wise, walks, loves) are thought to be true of things and thus denote a property or relationship. Relations, (e.g., loving, between, tall) are also predicable and exemplifiable, on par with properties.

What are Properties?

Nominalists are (rightly) suspicious of 'properties.' Let us consider some so-called 'moral properties.' For example, if **S** is 'courageous,' is the predicate 'courageous' to be identified with the property of courage? Is courage a property? If **S** is 'honest,' does **S** *possess* the property of honesty? Is honesty a property?

Or is it a better more common-sense explanation to say that persons normally attribute (i.e., predicate, evaluate) honesty and courage to **S** as an entity fulfilling certain characteristics under these concepts? It seems to be a better explanation that persons evaluate **S** under the group resemblance concepts 'courage' and 'honesty' based upon a loose cluster of *disjunctive characteristics*, based upon the reportive definitions of these terms. It is a *set of traits* (e.g., bravery, conquering fear) that compose the definiens of 'courageous' as a predicate. 'Courageousness' is best understood as a set of similar actions or dispositions, as dictated by our interests and evaluations, rather than as something objectively 'residing in' a person. It is a matter of *S's character* (objectively stated) that qualifies **S** as 'courageous.' Similarly, if **S** is deemed 'honest,' then **S** is characterized as being truthful, sincere, and trustworthy. The objective characteristics of **S's** actions and character don't constitute **S** as possessing an objective *property* of 'courage' or an objective *property* of 'honesty'. The reification of 'objective properties' isn't necessary.

Bigaj's (2012) analysis of predicates such as 'courageous' has a clear realistic bias favoring the existence of properties. He considers the subject-predicate statement "Socrates is courageous." Bigaj says that it is natural to interpret this sentence as being true when the individual named by its subject "Socrates" possesses (exemplifies) the property represented by the predicate "is courageous." He says:

The name "Socrates" denotes one individual, namely Socrates himself. On the other hand, the predicate "is courageous" denotes all individuals of whom it is true that they are indeed courageous. Thus, predicates typically denote more than one individual object. But each predicate also picks out a single object which is a

universal. The predicate “is courageous” naturally singles out the *property* of being courageous. However, this predicate cannot be said to denote courage. Clearly it is not appropriate to say courage is courageous. Hence, we need to introduce the new semantical function of connotation. The predicate “is courageous” denotes courageous individuals, but connotes the *property* of being courageous. It is usually assumed that individual names such as “Socrates” do not connote anything. We don’t use such names to pick out any property of an individual, but rather to pick out the individual as a whole. (p. 21).

Bigaj says that this explanation postulating the existence of universals and properties can help us analyze the basic structure of natural language

Consider another example. Does an *office* have the *property* of being *tidy* (or *not tidy*)? Scott Soames (2010) says that a way something (e.g., *my office*) could be, but isn't (e.g., *tidy*) is a *property*, *it could have had*; but doesn't (p.111). (He implies an untidy office). But it seems that attributing a *property* (e.g., untidiness) to an office is unneeded and extravagant. A better locution is ‘I judge my office to be untidy (a group resemblance concept).’ An office doesn't literally *possess* the *property* of being untidy. Compare this to judging that 'this office has *the property of possessing* one window' to the ordinary judgment that 'the office has one window.' The attribution of a *property possession* adds nothing to the sentence.

When persons attribute the predicates of 'courageous,' 'honest,' 'tidy,' 'tall,' 'red', or 'five,' to entities falling under (or exemplifiable) under these concepts; it is not done by imagining that they are attributing some universal properties (courageousness, tidiness, honesty, tallness, redness, circularity, rectangularity) to particulars. Talk of ‘properties’ may be helpful and informative in some cases and domains (e.g. mathematics, physical science, in some ordinary talk), but it is strongly cautioned that this language is often epistemologically misleading in other contexts (e.g. metaphysics, ethics, aesthetics, semantics, and other areas).³ We should be aware (and beware) of language specified in terms of objects having properties. Against Platonism, it seems intuitive that particular

³ There are obvious normal references to ‘properties’ in the physical sciences: brittleness, density, elasticity, electrical conductivity, fluidity, solubility, and so on.

entities are *not* composed of (or are *forms of*) any independent universally existing abstract properties.⁴

The Status of Mathematical Objects: Realism, Nominalism, and Conceptualism

Now consider the concept of ‘abstract object’ in metaphysics and philosophy of mathematics which is supposed to help answer the following questions:

- 1) What kinds of objects exist?
- 2) What is mathematics about?⁵

Let's summarize realism, nominalism, and conceptualism, which address these issues:

Mathematical realism: Has three basic principles-- (1) There exist mathematical objects, (2) mathematical objects are abstract, and (3) mathematical objects are independent of persons, including their thought, language, and practices. Mathematics is about a realm of objective ‘abstract objects.’ These ‘abstract objects’ are non-spatiotemporal, nonphysical, unchanging, and causally inert. Plato is the early originator of realism, believing that mathematical objects (e.g., squares, numbers) are ‘universals’ (or Forms) and that they are eternal and cannot be created, destroyed, or changed.

Nominalism (anti-realism): Against realism-- (1) There are no ‘mathematical objects’ nor ‘abstract objects’ that exist independent of the human mind. Asks: (2) How can *something* that lacks a spatiotemporal address *exist*? (3) How could anyone *know* anything about a non-spatiotemporal, non-physical, unchanging, and causally inert object? An ‘abstract object’ *cannot* be what mathematics is about because there are no such objects. Whatever mathematics is about, it must be interpreted or explained without reference to existents such as abstract objects.

Conceptualism (anti-realism): There do *exist* certain kinds of objects (e.g., mathematical entities, fictional entities, propositions, possible worlds) but they do *not* exist independently of us. Abstract objects are the product of human activity. *Abstract objects* should be conceived as *mental concepts* physically located within human brains. In other words, so-called ‘abstract objects’ should be redefined as ideas, concepts, or definitions in our head where abstract ‘*objects*’ are understood

⁴ The idea that properties ‘reside in’ particular entities has generated theories that maintain that individual entities can possess ‘essential’ or ‘accidental’ properties. This essential-accidental distinction has generated bizarre claims that being a number is an essential property of ‘eight’; while being the number of planets is an accidental property of ‘eight.’ ‘Beethoven was accidentally a piano player and necessarily a human.’

⁵ These questions are misconceived. Better questions: (1) What is the *epistemic status* of axioms, definitions, and inference rules in mathematics? Can we *know* them to be *true*? (2) Do mathematical entities (e.g., squares, numbers, and ratios) *exist*? If so, in what sense (and how) do they exist? (3) What is the source of mathematical truth?

as physically instantiated '*concepts*.' 'Mathematical concepts' *exist* as stipulated entities postulated in formal mathematical systems, where their 'definition' is often identified with a precise fixed (unambiguous) definiens.⁶

A 'conceptualist anti-realist' position is endorsed here. It is the hypothesis that mathematical entities exist, but that their existence is mind-dependent upon the existence of mathematicians (and anyone using mathematical concepts). For the conceptualist, mathematical entities don't exist as independent objects, but instead exist as defined 'concepts,' physically located within mental systems. Individual mathematical concepts (e.g., triangle, number, +, -, v, &) can be precisely defined as fixed definiens concepts.⁷ Linguistic terms (mathematical or otherwise) when used in a context do not literally refer to (nor are 'about') things. Contrary to realism, there are no abstract objects that exist in a non-spatiotemporal realm. Contrary to nominalism, so-called abstract objects exist as concepts within the brains of humans, and there is no need to reinterpret what mathematical terms are 'about.' Conceptualism is abductively the preferred worldview.

⁶ 'Mathematical formalism' is an epistemological companion to ontological 'conceptualism.' Formalism holds that deduced mathematical 'truths' are the logical consequence of a consistent set of manipulation rules in a formal system. Reasoning proceeds based upon syntactically marked regularities of expressions without an immediate concern for semantics. The content of mathematics is exhausted by the rules operating within its language. The addition of a stipulated semantics follows the rules of an assumed consistent deductive system.

⁷ Details about 'fixed definiens' concepts: The term 'fixed definiens concept' (i.e., 'closed concept,' 'formal concept') is a kind of concept that has two characteristics that make up its uniqueness. First, a fixed definiens concept is a term that is stipulatively defined to *unequivocally identify* any item(s) that fall under its definition. The definiens is precise enough to distinctly exclude any entity that doesn't fall under the definition. Second, a fixed definiens concept is stable and not subject to alteration (without creating a new concept). The definiens determines what a term's proper referents (or extensions) are, if any. Fixed definiens definitions when used in mathematics typically involve an assertion of 'measurement' in a broad sense. These measurement terms will have a *necessary and sufficient conditions* definition for their proper use because, for the most part, they have been deliberately formulated that way. With fixed-definiens concepts, *the consistency of informative fixed definiens concepts and their relations* are sought. Although fixed definiens concepts are stipulatively defined to unequivocally identify any item(s) that fall under its definition, sometimes the definiens for a fixed definiens concept is difficult to consistently state, and may require refinement (or research), so as to be informative and consistent with other related concepts (e.g., 'derivative' in mathematics is fixed definiens but was hard to precisely specify).

Metaphysics Transitions into Formal Semantics

In semantics, Tarski theorized that a sentence **p** (in context) has the *property* of being true or false (since it denotes or designates a state of affairs) and names a class of predicates. The acceptance of this worldview persists. But do sentences have the *property* of being *true*? Is truth a property? Or is the *truth* of a sentence (in context) a *relation* (viz. correspondence) between '**p** asserted in context by **S**' and 'a state-of-affairs'?

Formal Semantics

Formal semantics is understood as the study of the 'meaning' of words and sentences. Philosophers of language take it for granted that *words, phrases, and sentences* have meaning and that for each meaningful expression, there is a correct answer to the question 'What does it mean?' Among the questions asked: (1) How is it that we confer significance upon inherently meaningless linguistic expressions by employing them in linguistic practice? (2) How do the components found in declarative sentences contribute to the meaning (or content) of the sentences? (3) What is it for a linguistic item to stand for, or represent an object? (4) How do we link a proper name to the named entity to establish its referent? The property of language that needs explanation is how does 'meaning' enable languages to play a primary (and causal) role in communication?

A summary of the fundamentals of a truth-conditional 'model theoretic' semantics is provided in an *Introduction to Montague Semantics*, edited by David R. Dowty, Robert E. Wall, and Stanley Peters (1981).⁸ Richard Montague's approach is (1) model theoretic, (2) truth-conditional, and (3) makes use of possible worlds. A model-theoretic theory of semantics maintains that to know the meaning of a (declarative) sentence is to know 'what the world would have to be like' for the sentence to be true (implicitly adopting a correspondence theory of truth). A truth-conditional approach specifies the relationship which sometimes holds between *a sentence* and *the world*. 'The world' is

⁸ Montague's three technical articles, "English as a Formal Language," "Universal Grammar," and the "Proper Treatment of Quantification in English," presented in 1970, made the claim that there "... is no important theoretical difference between natural language and the artificial languages of logicians; indeed, I consider it possible to comprehend the syntax and semantics of both kinds of language within a single, natural and mathematically precise theory" (Montague 1974, p. 222).

intended to refer to the vast complex of things and situations that the sentences can be 'about.' Dowty, et. al, state that the business of semantics is to specify how language connects with the world-- to explicate the inherent "aboutness" of language (p. 5):

Sentences (as linguistic entities) and states of affairs (as configurations of objects in the world) are different kinds of things, and... the world contains various sorts of 'entities,' and in a state of affairs these entities have certain properties and stand in certain relations to each other (p. 7).⁹

The 'compositional theory of sentence meaning' is then introduced which maintains that words (or morphemes) are the basic components of sentences, and that the meaning of sentences depends, systematically, on the meaning of the words (or 'basic expressions') combined according to the syntactic rules into larger expressions:

Each syntactic rule can be regarded as a statement that certain input expressions combine in a certain way to produce an output expression. If we suppose now that each basic expression of the syntax is associated with something in the world-- an entity, a property, a relation, or whatever-- then we will have formed a basis for the recursions that are to operate on both the syntactic and semantic sides... The meaning of the whole is a function of the meaning of the parts and their mode of combination (p. 8).

The compositional theory of sentence meaning states that to represent the meaning of a sentence (in a precise logical structure) is to understand how its words contribute in a systematic way to the meaning of the sentence. This idea goes back to Frege (1879), where it is assumed that various *forms of linguistic expression* (e.g., proper names, predicates) have 'semantic functions' and may possess 'semantic values' that can *mean* this or *refer* to that.¹⁰ Proper names are represented by singular terms, predicates are

⁹ Kempson in *Semantic Theory* (1977) similarly maintains that "a semantic theory must fulfill at least three conditions: a) it must capture for any language the nature of word meaning and sentence meaning, and explain the nature of the relation between them; b) it must be able to predict the ambiguities in the forms of language, whether in words or sentences; c) it must characterize and explain systematic relations between words and between sentences of a language-- i.e. it must give some explicit account of the relations of synonymy, logical inclusion, entailment, contradiction, etc." (p. 4).

¹⁰ Cann (1993) states that a semantic theory should provide an account of the relation between linguistic expressions and the things that they can be used to talk about (p. 1). Devitt (2015) shares this viewpoint and says that "reference" picks out "semantically significant relations" between linguistic expressions and the world. Not only do proper names and demonstratives refer, but "nouns, mass nouns, verbs, adjectives and so on, all refer." Devitt states that "languages are representational systems that are parts of the natural spatiotemporal world and are of theoretical interest because of their causal roles in that world, particularly their roles in communicative behavior." Devitt says that "reference along with syntactic properties, are the

represented as unsaturated concepts, and quantifiers range over a specified domain of entities. Frege was concerned to explain how certain linguistic forms contribute to a sentence's meaning, and ultimately its truth value.

In modern times, a truth-theoretic 'model theory' (such as Montague's) involves the construction of abstract mathematical models of those *things in the world* making up the *semantic values of expressions* in the object language. Dowty, et. al. state:

The leading idea of model theory is that one can learn about the *meaning* of expressions and the correlations between expressions and meanings by investigating in detail how the meaning of complex expressions is related to the meaning of the simpler expressions they are constructed from. Given that the meanings in question are objects or configurations in the world, a sensible strategy is to study the relationships among these objects and configurations in order to gain insight into the relationships between meanings that get associated with expressions by the compositional process. In practice, this often means using the apparatus of set theory to represent semantically relevant aspects of the relationships between objects and configurations, and employing appropriate set-theoretic constructs as objects in a model that are assigned as semantic values of expressions (p. 10, italics added).

A *model* begins by specifying what sorts of things there are in the world, and then with respect to this assumed ontology, specifies an interpretation of the object language. Given this notion of a model, we can investigate certain interesting things which remain invariant, under changes in interpretation. For example, it is generally assumed that certain basic expressions of English such as *and*, *or*, *not*, *every*, etc. have a fixed interpretation, i.e., they remain invariant from model to model. We can then characterize a certain class of sentences of English containing these words as *logically true* and another as *logically false*; specifically, those sentences which are true or false, respectively, in every model (i.e., under every assumed ontology and under every possible interpretation). (p. 11).¹¹

Nick Riemer (2010) concisely describes logical approaches to semantics, where it is assumed that to know the meaning of a sentence, is to know what the world would have to be like, if the sentence were to be true:

central notions in an explanation of meanings: they are the core notions in a theory of language.” (p. 32). For example, the meaning of ‘Jack thinks that Fred loves himself’ is largely explained by its syntactic structure and the reference of its expressions.

¹¹ Montague’s ‘index theoretical’ approach is scrutinized by Kamp (1971) over its interpretation of modal and temporal operators (e.g., ‘now,’ ‘actual’) and by Stalnaker (1999) for its failure to allow representation of the concept of a ‘proposition.’ See Stanley (2008) for discussion.

Logical approaches to semantics deal with the question of truth and reference by providing a model for the sets of logical formulae used to represent meaning. The model of a set of logical formulae is a description of a possible world to which that formulae refer, a set of statements showing what each individual constant and predicate refers to in some possible world. The model relates the logical language to this world, by assigning referents to each logical expression. The aim of this is ultimately to produce, for a given set of referents, a statement of the truth values of the logical formulae in which they are included. In other words, the logical formalism will tell us, given a particular world, which sentences describing this world are false and which are true... If the logical formulae are identified with sentences of natural language, we will have obtained a logical characterization of the truth conditions of a subset of natural language (p. 196).

Standard Assumptions Underlying Formal Semantics

Our attention now turns to some of the implicit assumptions that underlie the practice of formal semantics and symbolic logic. We are in effect describing a 'meta-logic' because we are not talking about the formal structure of any single deductive system, but instead we describe with a short list, the beliefs, values, and definitions that lie behind most deductive systems. There are approximately fourteen assumptions that lie behind the formalization of any deductive logic (and are found in most introductory logic texts). For philosophers, these assumptions and definitions are rudimentary and are rarely questioned. But as indicated with a star*, the assumptions 2, 3, 10, 11, 12, 13, and 14 are all subject to dispute.

1. 'Logic' is the study of the methods and principles used to distinguish correct reasoning from incorrect reasoning. There exist similarities among arguments in natural language; and with a formal language a logician should represent those similarities and identify truth-conducive (i.e., truth-generating) argument forms (i.e., valid arguments).

*2. The Law of Bivalence: Every declarative sentence/statement expressing a proposition (in a domain) has exactly one truth value, either true or false.¹²

¹² Bell (2008) a mathematician, writes “why is traditional logic *bivalent*, that is, why is it assumed that there are just two truth values rather than some other number? What is it about the number 2 that gives it this special position in logic? Wittgenstein seems to take the fact for granted when (in his Notes on Logic) he says that propositions have two “poles.” ... as “the logic of realism”...what is it about the realm of independently existing objects that confers bivalence... Why shouldn't the number of objective truth values be, say 3, like the number of spatial dimensions? Wittgenstein recognized the possibility of this question arising but simply dismissed it.” (p. 21).

*3 The Principle of Excluded Middle: A sentence/statement/proposition is either true or false, as a declarative sentence; in contrast to questions, exclamations, commands.

4. An 'argument' consists of premises and the conclusion. The 'premises' are a group of sentences that gives reasons/evidence/support for believing the conclusion. The 'conclusion' is the sentence that the premise(s) are claimed to imply (or entail).

5. An 'inductive argument' claims to support its conclusion with some degree of probability. For example: (1) 99% of the people in Springfield own a dog. (2) Mr. Brown is a resident of Springfield, so therefore (3) Mr. Brown probably owns a dog.

6. A 'deductive argument' claims that its premises support its conclusion necessarily. A deduction is relative to a particular vocabulary, syntax, and inference rules.

7. Three consistent definitions of 'validity': An argument is 'valid' if and only if it is necessary that *if* all its premises are true, its conclusion is true. An argument is 'valid' if and only if it is impossible for all the premises to be true while the conclusion is false. When an argument is valid, the premises 'entail' its conclusion.

8. An argument is 'sound' if and only if it is valid, and all its premises are true.

9. An 'inference' is when a *person* reaches or affirms a proposition on the basis of other propositions. An inference (with premises and conclusion) can be put into the form of an inductive, deductive, or abductive argument.

*10. There are three types of sentence/statement/proposition: A proposition is 'contingent' when it could have been true or false (e.g. Lincoln was elected president). A proposition is a 'tautology' (e.g., p or not- p) if it has substitution instances that could only be true (e.g. 'Either Lincoln was elected president or Lincoln was not elected president' has the form of a tautology and is thus a logical truth). A proposition is 'contradictory' (e.g., ' p and not- p ') if it has substitution instances that are self-contradictory (e.g., 'Lincoln was elected president and Lincoln wasn't elected president' is false in virtue of its logical form).

*11. A sentence is contingently true, e.g., 'snow is white,' if and only if it is true that snow is white. Truth is the property of sentences in a possible (or the actual) world.

*12. The Principle of Semantic Reference: Words that are found in complete sentences and used in a context (a) refer to entities, (b) have meaning, and (c) are about something.

*13. The Principle of Compositionality: Words are the basic components of sentences and the meaning of sentences depends (systematically) upon the meanings of the words that they are composed of.

*14. For a speaker to know the meaning of an assertion, the speaker must be able to grasp its truth conditions (i.e., know what states of affairs constitute its truth condition).¹³

The acceptability of (2) the law of bivalence and (3) the principle of excluded middle for declarative sentences is subject to debate. It is questionable whether 'truth' is a *semantic property* of sentences (in a model); or whether 'truth' is better conceived from a *speaker's perspective*, where 'truth' is a *correspondence relationship* between S's assertion of *proposition p* about a *state of affairs*. Let us critique formal semantics. We explain the 'semantic theory of reference' and introduce a 'speaker theory of reference' thereafter.

The Philosophy of Language & Formal Semantics: A Critique

The following principles are *false* (or should be accepted with caution):

(#1) The concept of 'linguistic meaning' should be of primary interest in the philosophical investigations of artificial and natural languages.

(#2) The Principle of Linguistic Reference: Linguistic entities found in complete sentences (a) can literally possess meaning, (b) can be about, or refer to things in context, (c) can denote (or refer to) their extensions.

(#3) The Principle of Compositionality: Words are the basic components of sentences, and the meaning of sentences depends (systematically) upon the meanings of the words that they are composed of. To understand the meaning of a sentence is to understand its compositional structure and to know under what conditions the sentence would be true.

¹³ Dummett (1978) says that a statement gets its meaning by being correlated with a state of affairs. That state-of-affairs is the statement's truth condition. The correlation between statement and truth condition is secured by (1) the referential relations that individual terms bear to objects in the world, and (2) by the way that they are combined into a sentence. To know the meaning of a statement is to grasp its truth condition. (pp. 223-225).

(#4) Truth Conditions: A statement gets its meaning by being correlated with a state of affairs: that state-of-affairs is the statement's truth condition. Correlation between statement and truth condition is secured by 1) the referential relations that individual terms bear to objects in the world, and 2) by the way that they are combined into sentence. To know 'the meaning' of a statement is to grasp its truth condition.

(#5) A meaningful declarative sentence S represents the world as being a certain way and is either true or false.

(#1) The concept of 'linguistic meaning' should *not* be the primary concept of interest when doing semantics. It is disputable whether that for every word there is something that may be referred to as 'its meaning,' which is separable from, and makes the word suitable for its ordinary use(s). Frege (1892) made the distinction between a '*sign*' as having '*a meaning*' which is the object that it refers to; and its '*sense*' as the mode of representation of that referent. It is asked; what is it for a linguistic entity to have a meaning? The assumption that linguistic entities have 'meaning' continues today.¹⁴

Most philosophers take the concepts of 'meaning' and 'linguistic reference' as being compatible with our pre-theoretic intuitions that 'words have meaning' and 'words in sentences can refer to things.'¹⁵ These assumptions have an intuitive appeal. In *What is Meaning?* (2010a, p. 1) Soames takes it for granted that words (including proper names, phrases, and sentences) have meaning and that for each meaningful expression there are correct answers to the question of 'What does it mean?' Lyons (1995, p. 46) states that it is generally agreed that (1) words, phrases, and sentences have meaning, (2) sentences are composed of words (and phrases), and (3) the meaning of a sentence is the product of the words (and phrases) of which it is composed.

¹⁴ The following propositions seem true: The linguistic *meaning* of a word in a language is what fully competent speakers of the language have a grasp of merely in virtue of their semantic competence (e.g., Dummett, 1993, Higginbotham, 1992, Kaplan 1989). Linguistic meaning is what second-language learners aim to grasp. Meanings allow a word to be used to speak the relevant language. (See footnote #27 below).

¹⁵ Many theorists believe that the *meaning* of a sentence is what one would have to know in order to understand the sentence, apart from any context of employment. The meaning of a sentence is thought to be separable from its possible uses. Literal meaning and literal truth conditions can be assigned to words and sentences apart from particular contexts of use.

But it is argued here that there are clarifications (and objections) to these ordinary intuitions. Let's state the linguistic intuitions defended here. 'Meaning' cannot be identified as a natural kind; it has no theoretic definition. 'Meaning' is a term with multiple senses but no single unified sense or definition (as is well-known). The concept of 'meaning' is best interpreted as a group resemblance concept.¹⁶ Thus, the 'meaning' of a linguistic expression, when precisely specified within a model, is a stipulation. Stipulations of linguistic meaning are (to some degree) philosophically unimportant.¹⁷

(#2) It is false that linguistic entities can possess *meaning* and be *about* (or *refer to*) *something*. Linguistic entities when used contextually in an utterance *cannot literally refer* to or be 'about' or 'denote' various entities. Taken out of historical context, the very idea that any kind of linguistic entity (e.g., word, sentence, phrase, proper name) can possess semantic properties (i.e., a meaning) that when used in a context, can somehow 'attach,' 'hook up,' 'point,' or 'lock on' to reality is just *weird*. Words do not 'point beyond' themselves to 'connect' to things. Predicates cannot 'hold of' certain things. All of these metaphors are found in the literature. How did the idea that linguistic entities can somehow '*represent*' or '*denote*' extra-linguistic entities get started?

The short answer is that Frege's "On Sense and Reference" proposed that physical linguistic entities articulated as marks or a string of sounds in a context of utterance can represent (concrete and abstract) 'objects' in the world. Frege's formalism supposes that for a sentence (i.e., well-formed formula) to be meaningful (and possibly true); its words

¹⁶ To illustrate the many senses of 'meaning,' it can be said in an ordinary context that (1) 'anger' *means* (or is synonymous with) 'mad,' (2) he *means* that 'TN' shall now stand for Tennessee, (3) by 'bat' I *mean* the animal, not a baseball stick, (4) that the characteristics of a graffiti symbol *means* that the graffiti was left by a certain gang. (5) Paula *means* by a swinging head gesture that no, Peter should not cheat on his math test, (6) because he misinterpreted her remarks, he didn't know what she *meant*, (7) for him, the short poem had no *meaning*, (8) numerous misspelled words in his note probably *means* that he was in a hurry, (9) that both soccer teams are undefeated, gives their upcoming match more *meaning*, (10) I *mean* to be there tomorrow, (11) A stalling car can *mean* a tune-up. That the term 'meaning' has many variances in ordinary use is similar to term 'game' as illustrated by Wittgenstein (1953). For Wittgenstein, to know the meaning of a word is to be able to use it competently and respond to other people's use or attempted use of it.

¹⁷ Cappelen's (2017) use of the term 'natural language semantics' is a little misleading. All formal specifications (e.g., definitions) in a semantic model are an exercise of an *artificial* language. A journal named *Natural Language Semantics* published by Springer reflects this same mistaken conflation.

must have a meaning (that can be logically formalized) within a systematic linguistic structure. Words have meaning and the principle of compositionality accounts for how meaningful words (referring to concrete and abstract objects) combine to form meaningful sentences.¹⁸

In critical opposition, how is it *physically possible* for a linguistic entity (e.g., a word, well-formed sentence, phrase, proper names e.g., 'Hesperus' and 'Phosphorus') to possess semantic properties (i.e., a meaning) so that when used in a context, makes it so that these marks or sounds *refer* to objects? It doesn't seem physically possible for *words* to *refer*. It's more plausible that *persons refer* using words. It is *persons* who use linguistic expressions to refer to various objects in a context. A *speaker theory* of meaning (and reference) is advanced here in *opposition to linguistic theories* of reference.

An Alternative View: The Prescriptive Nature of Formal Semantics

Do linguistic entities (i.e., physical marks or sounds) truly (1) possess 'intensions' or 'meaning,' (2) refer to extra-linguistic entities, and (3) can be about something. In response to the metaphysics of referential semantics, it is maintained here that any formal semantic theory of representative meanings is ultimately a theory of *prescribed* stipulations. The general structure of deductive systems consists of the following elements: 1) the introduction of a *vocabulary* of symbols and definitions about what counts as an individual constant, individual variable, predicate, proper name, sentential connective, punctuation, and quantifier, 2) the introduction of *syntactical formation rules* (or grammar) that defines how 'well-formed formulas' are to be constructed out of symbols (i.e. a procedure that determines whether a sentence, as a finite strings of words or symbols, is 'meaningful' or not) 3) a set of truth-preserving *inference rules*, and 4) a *semantics* (e.g. truth-table definitions of connectives, or interpretations using symbolization keys and extensions). On the view here, formal deductive systems are

¹⁸ Devitt and Sterelny (1999, pp. 4-5) are epistemic naturalists (i.e., just physical entities exist) and hypothesize that *physical linguistic entities* (marks, sounds) must have properties (i.e., meanings) that allow a person to use language to communicate thoughts. Meanings are the properties that linguistic entities must have in order to express a thought. The central role of language is to express thoughts.

'prescriptive' in that they stipulate 'meanings' and rules for the regimented use of linguistic expressions.

An example of the prescriptive nature of formal semantics is illustrated in *The Logic Book* (1980) written by Marie Bergmann, James Moor, and Jack Nelson. In describing predicate logic (PL), the authors state that the basic semantic concept of predicate logic is that of an *interpretation*, under which other semantic concepts are defined (p. 291). Symbolization keys and *universes of discourse* embody interpretations:

The kinds of things that are in the universe are extremely varied. They include people, plants, and animals (living, dead, and yet to be born); numbers (integers, rationals, reals, and imaginaries); tables, chairs, molecules, and atoms; and dates, places, times and events. The collection of things we are talking about on a given occasion constitutes our *universe of discourse* for that occasion. (p. 249).

The truth-conditions of sentences of PL are dependent upon choice of ontology and the universe of discourse (UD) and upon how each of the predicates and individual constants in the sentences is interpreted:

Once we specify the UD, we may interpret predicates relative to it. For instance, if we let our UD be the set of living creatures and decide to interpret 'Fx' as 'x is human,' then we may say that, on this interpretation, the predicate 'F' picks out all of the living creatures in the UD that are human. That is, the predicate 'F' holds of those living creatures that are human. We call those things that the predicate picks out the *extension* of the predicate 'F' for the interpretation. (p. 292).

In sum, formal theories typically offer an analysis of 'meaning' in a technical symbolic metalanguage, according to principles which can be expressed in mathematical terms. A formal representation of meaning avoids the ambiguities contained in natural language by enforcing a strict correspondence between *symbols* and *meanings*. A formal language has *stipulated* one-to-one relation with its meanings, so that each symbol of the formalism has one and only one interpretation. Formal models are based on prescriptions.

Introducing a Theory of Speaker Reference

Let us analyze the concept of 'reference.' The term 'reference' in one ordinary language sense isn't a property of individual linguistic expressions. Reference is a pragmatic notion. People *use* linguistic expressions to *refer* to entities in a context. What

a speaker's referent is, on a given occasion of use, depends upon the speaker's intentions. Personal intentions and context allow a speaker (and audience) to identify the referents (and functions) of linguistic entities in an utterance, and the function of a sentence in context. If a listener has doubt about a speaker's reference or intent when uttering a complete sentence, an appropriate question may be asked for clarification. The concept of 'speaker reference' isn't a new idea and it is found in previous contexts in the philosophy of language, but the undertaking of a *systematic account* of 'speaker reference' has been lacking.

A standard dictionary defines these three related terms:

- (1) **Refer** is to direct attention, speak of, mention, or allude to.
- (2) **Reference** is the act of referring, mentioning, or alluding.
- (3) **Referent** is (a) what is referred to, or (b) the thing that a word stands for.

A theory of 'speaker reference' adopts the 3a sense of reference where it is believed that it is fruitful to describe how *persons* can *use* expressions pragmatically (e.g., a proper name, a definite description, a definition) to *refer* to entities (e.g., a planet, a fictional character, a number, a word). This contrasts to the 3b sense where *linguistic expressions* are believed to *acquire meaning* and have *semantic properties* in a context (to mean this or refer to that). According to a speaker theory of reference, sentences don't have meaning, instead, *persons* assume the cognitive (or non-cognitive) *sentence meaning* when using a sentence to assert an empirical claim, ethical command, definition, mathematical assertion, and the like. A speaker theory asks, 'what does *S* mean when asserting *p*?'¹⁹

¹⁹ This same viewpoint that *speakers* use linguistic expressions to refer to entities was loosely endorsed by Strawson (1970) who observed that some philosophers favor a formal truth-conditional model-theoretic approach to a philosophy of language and that others theorize about ordinary speech and communication-intention. Strawson recognized that the communication-intention theorists paid attention to an utterer's *meaning something* by an audience-directed utterance on a particular occasion. While Strawson respected the communication-intention philosophers (including Grice, Austin, and later Wittgenstein) and practiced this mode of philosophy, he concluded it was a generally harmless and salutary thing to say that to know the meaning of a sentence is to know under what conditions one who utters it says something true. Donnellan (1966), Kripke (1977, 1980), Ludwig (2007), Deutsch (2009), Heck (2018), and most analytic philosophers have recognized the distinction between 'semantic reference' and 'speaker reference.'

A Characterization of a Theory of Speaker Reference

(1) According to a theory of speaker reference, sentences *don't* literally possess meaning, instead, it is *persons* who can understand *sentence meaning* (i.e., propositional content) when using a sentence. With a speaker theory of reference, a *well-formed sentence* is understood as the *basic unit of meaning*; not the words that it is built out of. Persons *use* linguistic expressions in well-formed sentences to (intend to) *refer* to particular entities in a context. Personal intentions and context allow a speaker (and audience) to identify the referents (and aboutness) of linguistic entities in an utterance.

While semantic reference theories attempt to explain (or eliminate) sentential ambiguity by using formal models, a speaker theory asks, 'What does *S* mean when asserting *p*?' When we ask 'what does *S* mean' when uttering *p*, the way to *answer* this question is obvious. If a listener has sincere doubt about a speaker's reference (or meaning) when a sentence is uttered, *an appropriate question* should be asked for clarity. For example, if I'm using the name 'Aristotle' and the listener didn't understand which 'Aristotle' I was talking about, I would report as appropriate: e.g. (1) the philosopher, or (2) the former husband of the late Jackie Kennedy. Similarly, if I said that 'there is a bat in the garage' and the listener didn't know if I was referring to a baseball bat or animal, I respond with the appropriate definition. By 'bat' I mean *this sense* of the word.

Similarly, when *S* uses the word "that" in a sentence (in context), the word "that" doesn't literally refer to an object. The *word* "that" doesn't refer to anything. Instead, an object *o* is the reference of an utterance of "that" only if *o* is what the speaker intends to refer to in making an utterance of "that." If listener *S1* has sincere doubt about a speaker's reference (or meaning) when *S* asserts a sentence using "that," then *an appropriate question* should be asked for clarification on *S*'s intention, viz, *what is it* that *S* is looking at, pointing to, or thinking of. *S1* may not understand *p* when in doubt, unless a question about *S*'s referent is resolved by questioning *S*.²⁰

(2) For successful speaker reference of a *proper name*, there is no single or disjunction of descriptions that must be associated with the entity being referred to.

²⁰ Gauker (2019) argues against this kind of 'speaker-intention theory' of demonstrative reference in favor of an analysis in terms of semantic reference. Unfortunately, such semantic reference analyses inform only semanticists.

Persons successfully use proper names without having descriptions (or a definiens) that apply uniquely to one's referent. For example, if I'm using 'Richard Feynman' in a situation, and the listener didn't understand who I was talking about I could reply that I was talking about 'a contemporary theoretical physicist.' My listener knowing that I'm using a proper name would gain some understanding of the referent from my report of a definiens (i.e., a definite description). People succeed in referring to the person Feynman easily, even while knowing very little about him. In most situations, the context of an assertion is enough for a listener to identify the entity being referred to by a speaker. Conversations are rarely impeded by misunderstanding a speaker's use of proper names.

On the speaker theory, a proper name is used to refer to whatever properties the community generally attributes to the entity, even if those properties are sometimes mistaken or non-unique. The descriptive information (in a reported definiens) may be vague, open-ended, and subject to factual error. For example, if a person errantly defined "Bono" as 'the English lead singer of the band U2,' a speaker to listener reference to the correct person would likely be successful, even if Bono was born Irish, and not English. It is *neither* the *truth* of the description(s), *nor* the *uniqueness* of the description(s) in the reported definiens of a proper name, that makes 'speaker reference' successful. With a speaker theory of reference, it is recognized (obviously) that speaker reference is *not* always successful because of different kinds of misunderstanding.

(3) Similar to proper names, a theory of speaker reference *denies* that *definite descriptions*, as linguistic expressions, *literally* refer or denote extralinguistic items. For example, it might be said that the description 'the first man on the moon' refers to Neil Armstrong. But it *isn't true* that this *phrase* literally *refers*. It is *persons* who *use* this definite description to refer to a person. It is more accurately said that 'the first man on the moon' *designates* (or *denotes*) Neil Armstrong in the English language and in the actual world. The linguistic expression, by itself, cannot 'pick out' its referent.

Also, similar to proper names, there may be descriptive errors associated with a definite description. For example, if someone says, 'I'm thinking of a poisonous red and green plant popular at Christmas,' we infer that the speaker is thinking of a 'poinsettia,' and successful speaker reference is achieved. But poinsettias are not poisonous!

Instances of successful speaker reference are understood as (pragmatic) situational events. Keith Donnellan (1966) observed that using definite descriptions is a way to get one's audience to identify whatever is spoken of, even if the description is inaccurate.

(4) The theory of speaker reference is classifiable as a 'descriptivist theory,' but it *isn't a descriptivist semantic theory* of reference. 'Descriptivist theories of *semantic reference*' are *false* because it is (errantly) claimed that the **x** to whom a proper name (as a linguistic expression) refers (in context) is determined by definite description(s) (as linguistic expressions) associated with that proper name (as a linguistic expression).²¹

In contrast, with a theory of *speaker reference*, it is claimed that the **x** to whom a proper name (as a linguistic expression) refers (in context) is determined by descriptions (i.e., a definiens) associated with the proper name, when stated by a speaker as a reportive (lexical) definition in context. The *use* of a proper name in a context does not function as being *equivalent* (or an abbreviation) to a cluster of *mostly true definite descriptions* about the referent. Nor is the referent of a proper name achieved *solely* through a *historical chain*. Both cluster and causal theories falsely assume that there exists a 'reference relation' between 'words' and 'objects.' Instead of seeking systematic word reference, philosophers *should* seek to analyze the concepts and intentions in context(s) and describe *how sentences are used by speakers* to communicate intentions.

(5) Let us review. Is 'reference' a property of linguistic expressions (i.e., where words and phrases have referential properties in a context)? Or instead, can 'reference' be considered a pragmatic process among intentional agents? Both senses of 'reference' are intelligible. In advocating a speaker theory of reference, I'm not implying that the popular 'semantic theory' should be discarded. Aside from a difference in approach and questions asked, the speaker theory implies nothing contradictory to the semantic theory. I am just claiming that a speaker theory can resolve important philosophical issues better than a semantic theory. It is understood that semantic model theories (about reference and meaning) are valuable for creating structures (i.e., definitions, vocabulary, syntactical formation rules, inference rules, semantics) that allow for understanding meaningful

²¹ Kripke (1980, p. 71) describes a 'description theory' of semantic reference, similar to the accounts of Devitt (2011, p. 420) and Nichols, Pinnillos, and Mallon (2016, p. 146).

grammatical sentences and perspicuous deductive entailments. But it is doubtful that a semantic theory of reference has relevance to perennial questions of philosophy (e.g., about knowledge, mathematics, meta-ethics, aesthetics, language, and so on).

(#3) The principle of compositionality can be challenged. The compositional truth-functional theory of sentence meaning maintains that words are the basic components of sentences, and that the meaning of sentences depends (systematically) on the meaning of the words that they are composed of. Frege adopted this principle to describe how it is possible that an unlimited number of complete thoughts could be expressed by a natural (or artificial) language. Frege thought that the principle was neither metaphysical nor psychological. It was just a principle needed to explain how thoughts can be expressed using a language. It was a fact about how people could produce an unlimited number of sentences out of a minimal vocabulary and a minimum of syntactic and inference rules.

Soames (2003) defends the principle of compositionality with virtually the same reasoning. He says that linguistic meaning is systematic. The meaning of a complex expression is determined by the meanings of its parts. If this were not so, we could not explain how language users are routinely able to understand new sentences that they have never previously encountered. "In order to account for this fact, we need a theory of meaning of an individual expression that makes clear how it is able to systematically contribute to the meanings of larger linguistic compounds that contain it" (p. 129). It is taken for granted by semanticists that a theory of meaning must explain how it is that we can use old words to convey new meanings that have never previously been conveyed.²²

But is the principle of compositionality empirically true? Do natural language sentences have meaning because of their formal syntax and semantics? On the contrary, persons normally learn sentence use, grammar, and semantic rules *informally*. Understanding *sentence meaningfulness* comes *prior* to learning the rules of formal compositional syntax and semantics. Children learn a language when engaging with

²² Del Pinal (2015) argues that linguistic *compositionality* is an *innate constraint* of the "faculty of language." Again, compositionality is thought to explain how language users are able to understand new sentences not previously encountered. This "productivity" is thought to be best explained by linguistic reference to symbols in a recursive computational system within a compositional semantics. Dever (2006) says that compositionality enforces "honesty" in semantic theory construction (p. 663).

adults, reading stories, and playing interactive games with vocal instructions. The understanding of individual word meanings follows from a familiarity of their ordinary use and self-interpretation, pedagogy, or dictionary. When learning a language by immersion it seems plausible that sentence meaning (a complex structure) is understood without conscious attention to the individual words and syntactic conventions that give a sentence its structure. Sentence use follows from imitation (and interpretation) of other users. With the acquisition of a language, the *meaning* of a complex expression (*for persons*) is not determined by its syntax and the semantic referents of its parts, but instead, by its content, contextual pragmatics, and a person's background beliefs.²³ *Well-formed sentences* are the *basic units of meaning*; not the words that they are built out of.

Even if the principle of linguistic compositionality isn't empirically true, is it still a fruitful assumption for analyzing the functions of natural (and artificial) language sentences? It doesn't seem helpful. It seems more natural (and fruitful) to conceive of this relationship the other way around. To repeat, it seems that a sentence's meaning (i.e., significance or intelligibility) and the intentions of users start first, and sentence meaning (intelligibility) and word meaning follow derivatively. We use sentences to make empirical claims, normative assertions, various mathematical assertions, aesthetic judgments, and kinds of definition. The principle of compositionality is of no help in describing the epistemology and apparent differences in (speaker) meaning when asserting these kinds of sentences.

Perhaps the systematicity of language and our ability to understand novel sentences is better explained by a theory of the *compositionality of concepts*. Having denied that linguistic expressions have 'semantic values' and 'semantic functions' that

²³ Liles (1975, pp. 268-273) states that around the age of three months or earlier, children are cooing, by six months they have entered a babbling stage, at twelve months they are saying a few words, and around eighteen months they begin forming two-word sentences. At the babbling stage, there is expert agreement that the *noises* begin to *sound* like *sentences* before the child forms words. By the age of five or six years, children have mastered the basic core of their language system. When children reach a critical age, their initial grammars are quite simple, but they are able to revise them to accommodate the new observations they make. Children are not merely mimicking adult sentences as parrot would, but rather using them to draw generalizations and form their own grammars, from which they can construct original sentences. It seems quite plausible that the desire to construct a grammar and the knowledge of how to go about doing it are innate; children derive the exact details of the language they are learning from the exposure they receive to it. A child's process of revision and addition continues until the grammars are essentially like those of an adult.

allow linguistic expressions to refer to things to facilitate communication, how do concepts allow us to do this? The response here is that our mental ability to represent and manipulate concepts in a systematic (and loosely compositional) mode allows linguistic communication. The *meaning* of a word (e.g., proper name, group resemblance term) as well as the meaning of a complex expression (e.g., sentences, definite descriptions) *for persons* is not determined by persons implicit understanding of its semantic referents and the composition of the complex expression's parts; but instead by associated mental concepts, contextual pragmatics, and a person's background beliefs.

Natural language sentences can be analyzed in terms of the concepts and context in which they are uttered. When asserting that "Obama was the 44th President of the United States" a speaker and an audience can possess the concepts of:

- (1) 'Obama' and 'U.S.' as proper names (human, geographical place),
- (2) 'president' as a group resemblance concept (cf. president of a corporation),
- (3) 'President of the United States' as a definite description,
- (4) the use of 'was' (as a fixed definiens past tense of 'be'),
- (5) the use of 'the' (indicating 'singular,' a fixed definiens concept), and
- (6) the numeric '44th' as a fixed definiens concept.

With natural language, we can ask how do definite descriptions, proper names, natural kind terms, and fixed definiens concepts contribute to the (speaker) meaning of a sentence (or proposition)? Persons typically 'think' with concepts in a systematic fashion. In formal semantics, the meanings of words are ultimately *assigned* (or are generated) by the stipulative definitions in a model. In natural language communication, the meanings of linguistic entities are *interpreted* by speakers. Repeating the example mentioned above, when a listener hears that 'there is a bat in the garage,' the term 'bat' must be interpreted as a natural kind mammal or a group resemblance artifact.

Another example further illustrates a case of listener interpretation. **S** and **S1** are walking on a sidewalk over a municipal boundary between the bordering cities of Bloomington and Normal in the state of Illinois (USA). **S** verbally states to **S1** that "We have just entered Normal, Illinois." **S1** who is new to the cities and unfamiliar with the territory, asks whether we had just left 'abnormal' Illinois? **S** responds with a *definition* of 'Normal' as a city in Illinois that borders Bloomington. With this, **S1**'s confusion between

'normal' as a group resemblance adjective and 'normal' as a proper name is terminated. This confusion can be understood as 'conceptual' (between proper name and predicate) even if an external formal linguistic explanation is available.²⁴

Even in a case where there isn't any conceptual confusion, 'reference' is not determined by a linguistic entity (e.g., a proper name) but is interpreted by a person. Suppose **S** comes strolling upon two men standing on a sidewalk and **S** hears them mention 'Napoleon' several times. As **S** comes closer, **S** wonders what they are talking about (e.g., the French commander defeated at Waterloo, a character in Orwell's *Animal Farm*, or a kid in a movie). As **S** gets closer to their conversation, **S** hears more sentences, and (abductively) infers that the referent of the proper name is a fictional kid in 'Napoleon Dynamite.' It is **S**'s *possession* of the *concept* of a 'proper name' that allows **S** to infer that they *were* talking about some unique entity. The linguistic entity didn't attach itself to anything. Instead, **S** *inferred* the referent of 'Napoleon' in context as a character in a movie, from hearing the contextual conversation of two persons.²⁵

Explaining and Resolving our Intuitions about Linguistic Meaning.

To reiterate, philosophers take their use of the concepts of 'meaning' and 'linguistic reference' as reflecting intuitions that (1) 'words have meaning,' (2) 'words in sentences can refer to things,' and that (3) 'well-formed composite linguistic expressions (e.g., sentences) have a literal meaning.' These assumptions have an intuitive appeal. It is intuitive that *words and sentences have meaning* no matter whether they are employed in a context, or outside of a context. It has already been argued that the second intuition is false (i.e., that words 'refer'), so we will now discuss the first and third intuitions.

²⁴ Most miscommunication is not conceptual but are pragmatic in nature. A speaker's utterance may be vague, ambiguous, ill-formed, or there might be an intervening physical problem (speaking too fast or too softly, or with loud noise in the background). A listener (or reader) might be inattentive, unfamiliar with the terms used, or maybe hindered by some aforementioned kinds of physical problems.

²⁵ John Locke is often interpreted as hypothesizing that the meanings of words (as linguistic expressions) are the concepts (i.e., ideas and tacit definitions) as found in individual human brains. Locke (1690) states that "The use, then of words is to be sensible marks of ideas; and the ideas they stand for are their proper and immediate signification" (Section 1, Chapter 2, Book III). The words which make up a language get their meaning from our associating them with the ideas and thoughts that we want to express.

If it is true that *words have meanings*, then how does this occur? In ordinary life we can talk about the 'meaning' of individual words. Two examples:

(#1) S1: 'What does 'kakapo' mean?
S responds: 'It's a kind of parrot.'

(#2) S: 'I saw a peloton pass by on our street today.'
S1: What is a 'peloton'?
S responds: 'It is a pack of bicyclists in a race.'

In these cases, when S is asked for a word's meaning by S1, S responds with a definiens about the word's usual or standard use. In these examples, one noun ('kakapo') represents a natural kind concept, and the other noun ('peloton'), represents a group resemblance concept.²⁶ Thus, it is *true* that *words have meanings*, and those *meanings* are stated *using definitions*.²⁷

Assuming that it is true that *sentences have a literal meaning* outside of a context, how does this occur? For example, we know the meaning of the sentence "I am tired," even if it occurs out of a context. The reason for this is that persons infer (or attribute) *sentence meaning* from the *mental lexicon* of their *concepts* and the syntactical grammaticality of the sentence.²⁸ The literal meaning of the definite description "being tired" and the indexical "I" are understood. Similarly, people recognize that the sentences "There is a red book on the table" and "On the table, there is a red book" have the same

²⁶ As noted by Kempson (1977, p. 80), what is listed in the dictionary are lexical items for words. For the word 'bank,' one lexical item is 'a kind of financial institution,' another lexical item is 'the side of a river.'

²⁷ This fully explains the intuitions stated in footnote #14: The linguistic *meaning* of a word in a language is what fully competent speakers of the language have a grasp of merely in virtue of their semantic competence (e.g., Dummett, 1993, Higginbotham, 1992, Kaplan 1989). Linguistic meaning is what second-language learners aim to grasp. Meanings allow a word to be used to speak the relevant language.

²⁸ Lyons (1995) states that "The lexicon may be thought of as the theoretical counterpart of a dictionary, and it is frequently so described. Looked at from a psychological point of view, the lexicon is the set (or network) of all of the lexemes in a language, stored in the brains of competent speakers, with all of the linguistic information for each lexeme that is required for the production and interpretation of the sentences of a language. Although the so-called mental lexicon has been intensively studied in recent years from a psychological (and neuropsychological) point of view, relatively little is known so far about the way in which it is stored in the brain or about the way that it is accessed in the use of a language. Relatively little is known, similarly, about the mental grammar that all speakers of a language, presumably, also carry around with them in their heads. In particular, it is not known whether there is a clear-cut psychological distinction to be drawn between grammar and lexicon" (p. 73).

literal meaning and that the sentences (in a context) express the same proposition. The literal meaning of a sentence (out of context) is understood by competent speakers of a language by understanding its concepts, syntax, and various senses of vocabulary terms.

Let's consider an example of how persons can *infer* a word's 'literal meaning' *within* a context. Consider examples of the use of the word 'run' and its variants: (1) He ran the race for his high school track team, (2) The ball ran onto the field, (3) The car is running well, (4) She ran the amateur talent show contest, (5) He is running for president. To know the meaning of a word (and its senses) is to be able to read (or hear) the word in a sentence and understand the sentence's meaning. Whether **S** understands a linguistic expression, and knows its meaning, depends on whether **S** can use it, and explain it correctly, and whether **S** responds appropriately to its use by others. It is from speaker intentions, context, and an audience's interpretation of a sentence that 'words' and 'sentences' have meaning. As Frege stated in *The Foundations of Arithmetic* (1884):

"Only in a proposition have the words really a meaning... It is enough if the proposition taken as whole has a sense; it is this that confers on its parts also their content" (section 60), and "Never ask for the meaning of a word in isolation, but only in the context of a proposition" (p. x).

What a word means is only explicable in terms of what speakers mean by using the word. What is important in communication is what speakers intend and what speakers use words (and sentences) to mean. It is only derivatively from these intentions that we may speak of words or sentences as meaning anything.²⁹

²⁹ In opposition, Stanley (2007) believes that a formal account of how context interacts with word meaning and sentence structure to create 'content,' is systematically superior to 'speaker theories' of meaning. He accurately states that 'speaker use' philosophers claim that "it is a *use* of a singular term by a person that refers, and it is an *utterance* of a sentence that expresses a proposition; one cannot speak of a *term* having reference, or a sentence having a truth-value, even derivatively. In short: words do not refer; people do" (p. 2). Against this speaker reference analysis, Stanley argues that an ordinary language explanation of the 'meaning' of an expression as 'a rule of proper use' as recommended by Strawson (1950) is vague and mystical. The increasing sophistication of semantic theories allow it to make "perfect sense to attribute reference and truth to expression types once contextual relativity is factored into the semantic theory" and that semantic notions allow us to give "a considerably more explicit characterization of linguistic meaning than the ordinary language philosophers were capable of providing... meaning is best explicated in terms of reference, rather than rules of use" (pp. 4-5).

(#4, #5) A philosophy of language need *not* be tied to the analysis of descriptive assertions and truth. The idea that language is essentially *descriptive* in informational value is *false*; and thus, can be challenged. We have observed that with formal semantic theories, sentences of the analysis are deemed to be true or false (i.e., descriptions). According to truth-theoretic semantics, an implicit mode of explaining what might appear to be ‘prescriptive’ is to explain what ‘propositions’ and ‘propositional attitudes’ are. In brief, it is suggested by metaphysicians that **S** possesses various ‘propositional attitudes’ as psychological attitudes towards a proposition **p** in any context.

What is a proposition? Steven Luper (2004) states that:

As usually understood, a **proposition** is an abstract object; it is that which a declarative sentence expresses. For example, the words *Snow is white* express the proposition that snow is white, and the same proposition is expressed by the German equivalent of these words, namely *Schnee ist weiss*. Propositions purport to describe the world, and true propositions do so accurately. Moreover, when you and I accept the same belief, we are linked to the same proposition through the relationship or belief (p. 1).

This abridged definition is found in the *Cambridge Dictionary of Philosophy*:

A '**proposition**' is an abstract object to which a person is related by a belief, desire, or other psychological attitude, typically expressed in a language containing a psychological verb ('think,' 'deny,' 'doubt,' etc.) followed by a that-clause. The psychological states in question are called '*propositional attitudes*.'

Soames (2015) similarly characterizes 'propositions' as follows:

'Propositions' are the "(i) the primary bearers of truth and falsity, (ii) *the objects of belief, assertion, and other attitudes*, (iii) the contents of perceptual and cognitive states, and (iv) the meanings of (some) sentences" (p. 9, italics add).³⁰

What is a ‘propositional attitude’? Michael Morris (2007) explicitly defines the fixed definiens term of a 'propositional attitude' as follows:

³⁰ A precise account of 'proposition' is an ongoing research project for Soames. Metaphysicians seek to provide an account about the 'nature' of propositions as a metaphysical-mathematical project. Lowe (2000) states "Most philosophers would say that propositions are *abstract* entities and thus akin ontologically to the objects of mathematics, such as numbers and sets" (p. 71). Propositions are commonly thought of as structured entities with component parts. Oftentimes, it is thought that the structure of a proposition is roughly isomorphic to the structure of the sentence that expresses it.

A '**propositional attitude**' is a psychological state which can be described by means of a 'that' clause ('She hopes that he will drown,' 'He thinks that his horse will win,' etc.) The term derives from a particular theory of what these states involve, namely: an *attitude* (expressed by a psychological verb like 'hope,' 'think,' 'wish,' 'fear,' etc.) towards a *proposition* (what is meant by a declarative sentence—expressed by a 'that'-clause). (p. 314).

This 'attitude' relationship between 'persons' and 'propositions' is very dubious. With this worldview, it is understood that proposition **p** is whatever the that-clause refers to (or denotes) in a propositional attitude report (e.g., **S** believes **p**). The proposition **p** is understood as the 'content' of a belief, desire, value, etc. and the 'referent' of **S**'s attitude.³¹

As stated, a 'proposition' is typically thought to be an 'abstract object.' An 'abstract object' is thought to be an entity that is non-spatiotemporal, nonphysical, unchanging and causally inert.³² 'Abstract objects' are compared to 'concrete objects' such as people, buildings, atoms, planets, and so on. Whether any 'abstract objects' exist (or not) is a philosophical debate that we have discussed above. The idea of an independent 'abstract objects' has been challenged. Propositions should not be conceived of as 'abstract objects.'³³

³¹ Stalnaker (1976) argues that 'propositions' are the objects of speech acts and use of propositional attitudes is justified by the technical success in a theory of possible worlds in resolving paradoxes concerning referential opacity, in analyzing scope ambiguities, and in providing a formally elegant framework for the representation of the structure of intensional concepts. He says propositions are things people express when they make predictions or promises, give orders or advice. They are also things people doubt, assume, believe to be very likely, and hope are true. In *Mere Possibilities* (2012), Stalnaker details a notion of 'possible worlds' and argues that 'propositions' are essentially truth conditions (p. 11). He says that "...propositions (in the possible-worlds theory) are identified with sets of possible worlds (or equivalently, functions from possible worlds to truth values) ..." (p. 12). "Propositions and possibilities are *not* representations—*not* things *with* truth conditions but truth conditions themselves." (p. 128, italics added).

³² King (2007) characterizes the *classical view* of 'propositions' as 'external abstract entities that by their very nature and independently of all minds and languages, represent the world as being a certain way and so have truth conditions.' King *rejects* this 'classical view' because nothing could do this. See Stalnaker (2012, p. 11) for discussion.

³³ With respect to the 'abstract concepts' of '*possible world*' and '*proposition*' Lyons (1995) notes that there are different interpretations of these concepts: "...some formal semanticists have explicitly defined a possible world to be a set of propositions, while others have said that a proposition is the set of worlds in which, or of which, it is true. For purely logical purposes it makes little difference of which of these views we adopt, although the choice may be motivated by broader philosophical considerations" (p. 232).

Are Propositions the Objects of Propositional Attitudes?

To reiterate, with propositional attitude reports, 'propositions' are said to be the referents of 'that'-clauses. A proposition is whatever the that-clause refers to or denotes. A proposition **p** is understood as the 'content' of a belief, desire, value, and so on. Here are examples of opposite propositional attitudes that **S** may have toward **p**:

- | | |
|-----------------------------------|--------------------------------------|
| (1) S believes that p. | S disbelieves that p. |
| (2) S is certain that p. | S is unsure that p. |
| (3) S wonders if p. | S knows that p. |
| (4) S desires (or wishes) that p. | S dislikes (or has aversion) that p. |
| (5) S hopes that p. | S fears that p. |
| (6) S is proud that p. | S is embarrassed that p. |
| (7) S values p. | S disvalues p. |

Jesper Kallestrup (2012) states:

To say that Anna *believes* that apples are wholesome is to say that Anna bears the *attitude of belief* towards the proposition that apples are wholesome. *Propositions* are *abstract entities* to which one can be belief related. They are composed of concepts and are capable of being true or false (pp. 1-2, italics added).

David Shier (2012) states that 'propositional attitude reports' (i.e., sentences reporting the propositional attitudes of individuals) are "central to our psychological discourse and to our understanding of the world, since in order to explain and predict behavior, we must appeal to information about the beliefs, desires, etc. of ourselves and others" (p. 795).

But do persons really have 'attitudes' toward propositions? Five **p** examples:

p1= 'Apples are wholesome.'

p2= 'Human-generated warming of Earth is presently occurring.'

p3= 'I'm going to the store to get groceries.'

p4= 'Abortion should be legal (with restrictions).'

p5= 'This sunset is gorgeous.'

Does my belief or disbelief toward **p1** and **p2** express a *relationship* (or an *attitude*) to that **p** (e.g., apples are wholesome, the earth is warming)? Does my proposal of an upcoming action express a relationship of desire or action toward **p** (e.g., going to a grocery store)? Does my value of (or disvalue) toward **p** (abortion should be legal)

express an attitude relationship to that **p** (abortion should be legal)? Does my value of (or disvalue) of **p** (the sunset) express my attitude ascription to that **p** (the appearance of the sun at a moment)? In general, do persons when expressing their beliefs, desires, and values, have 'attitudes' towards a 'proposition'?

The critical response maintained here is that persons *do not* have *relations* (or '*attitudes*') toward propositions as the 'objects' of belief, desire, value, etc. Beliefs, values, and other attitude verbs aren't about a 'something.' This verbiage and its associated distinctions are fueled by formal semantics, possible world metaphysics, and stipulative definitions. Morris's fixed-definiens definition stating that a *propositional attitude* is a psychological state which can be described by means of a 'that' clause,' is a pure stipulation. The response here, with emphasis on speaker reference, *denies* the value of a worldview that adopts the stipulated measurement of a 'proposition attitude' as part of an explanatory theory of our use of terms and sentences.

Descriptions and Prescriptions

In *Descriptions, Prescriptions, and the Limits of Knowledge* it was hypothesized that there is a basic distinction between 'descriptions' and 'prescriptions' whereby sentence meaning is determined by its use (i.e., function, motive) in a given context as intended by a speaker. It has been maintained that speakers are capable of asserting (i.e., declaring, saying, uttering) sentences that are intended as being either a 'description' or 'prescription' in a given context. Thus, there are two kinds of speaker meaning that sentences can have:

A '**description**' is an assertion that purports to express a correspondence (or a representation) of some state of affairs, where its correctness (or incorrectness) is *independent* of its acceptance (or non-acceptance) by particular persons.

A '**prescription**' is an assertion that purports to express a stipulation (or rule) upon a practice, where its correctness (or incorrectness) is *dependent* upon its acceptance (or non-acceptance) by particular persons.

The distinction of 'descriptions' and 'prescriptions' is about how *persons* intend their sentences to be used (and understood) in particular situations. These definitions are intended to be objectively *true* theoretic definitions. A theoretic definition is correct (i.e.,

true) only if its definiens accurately describes the phenomena (e.g., object, entity) being defined. The descriptive-prescriptive distinction represents an *objective epistemic-semantic feature* of the world about what persons can *know* and *mean*. Descriptions include (1) empirical statements, (2) true-in-a-language sentences and applied mathematical-deductive entailments, (3) reportive definitions, (4) theoretic definitions, (5) aesthetic assertions, and (6) social science theories. Prescriptions include: (1) stipulative definitions, (2) axioms, vocabulary, syntax, and inference rules in formal deductive systems, (3) 'sufficient evidence' assertions, and (4) ethical assertions.

Summary & Conclusion

Since the invention of modern predicate logic by Frege, the concepts of meaning, reference, object, property, relation, semantic value, propositional attitude, extension, intension, truth-conditions, necessity, and possible worlds, have evolved in seeking *how to best represent* linguistic expressions as they are used in natural languages. In formal semantics, symbolic theories are sought to explain how an infinite number of meaningful sentences can be asserted from a finite set of syntactical categories and rules. The overall goal is to interpret natural languages in an explicit logical form, in the same way that (compositional) mathematical languages map the validity of deductive arguments. Proponents of compositionality emphasize the 'productivity' and 'systematicity' of natural language communication, and that 'linguistic compositionality' is the best explanation

With a speaker theory of reference, we questioned whether 'meaningful sentences' are just those that purport to 'describe' the world as being a certain way. *Prescriptions are 'meaningful sentences' but do not represent the truth.* In order to have a complete philosophy of language, and not just a formal interpretation of linguistic symbols in a 'bivalent world' where **p** is true or false, the theorist must also understand 'speaker meaning.' In analyzing how a *sentence* is *used* by a speaker in a context (e.g., as description or prescription) the speaker theory of reference has implied several epistemic consequences. A social scientific 'conceptual analysis' is practiced here, and it is clearly in opposition to 'analytical metaphysics' which is popular but needs to be questioned.

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