

Philosophy of Language in the Twenty-First Century

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Since its inception at the end of the 19th and beginning of the 20th centuries, modern philosophy of language has moved, first from offering new approaches to solving traditional philosophical problems, next to providing a conception of meaning and interpretation for languages of logic, and finally to laying the foundations of the empirical study of natural languages. So far in the 21st century, the latter focus has been dominant. Because the foundations of linguistic science are incomplete, this focus is likely to remain central for decades to come.

One idea guiding this quest is that the chief semantic function of language is to represent the world. Uses of declarative sentences impose conditions the world must satisfy if they are to be true. This has led many to take the meaning of such a sentence to be a function from contexts to truth conditions, i.e., to states which, were the world in them, things would be as the sentence represents them. Intensional semantics is a sophisticated technology for studying meaning in this way. But it may have been asked to do too much. Although truth-conditional semantics must be part of a complete semantic theory, more may be needed.

1. *What is meaning?*

In what sense are semantic theories *theories of meaning*? Contemporary theorists are guided by three main theses.

- T1 The meaning of an (unambiguous) expression is its constant contribution to the illocutionary contents of uses of sentences containing it across contexts -- e.g. to the propositions asserted by typical uses of declaratives.
- T2 The meanings of sentences -- which are compositional functions of the meanings of their parts -- are what competent speakers understand.
- T3 Semantic theories are tested by their fidelity to the quick, intuitive, and generally reliable judgments made by competent speakers about the illocutionary contents of uses of sentences.

Although T1-T3 seem individually plausible, their conjunction has been under stress since the revolt in the 1970s against descriptive analyses of names, indexicals, and natural kind terms.

Since then, their semantic contents of have widely been taken to be the individuals or kinds they designate. These are what the terms contribute to the compositionally determined contents of all sentential clauses in which they occur, including those governed by modal operators (e.g. *necessarily*, *possibly*, and the like). Still, there seems to be more to understanding names ('Hesperus', 'Phosphorus') and many natural kind terms, (e.g., 'water', 'H₂O') than simply being able to use them to designate their semantic contents.

In addition, there are widespread presuppositions that those who understand them expect their audience to share -- e.g., about the visibility of the referents of 'Hesperus' and 'Phosphorus' in the *evening* vs. the *morning*, about the potability of instances of the kind designated by 'water', its necessity for life and its presence in lakes and rivers, and about the fact that 'H₂O' designates a chemical compound. These widely shared presuppositions are typically taken by ordinary speakers to be necessary conditions for *understanding the terms*. Since speakers and hearers are presumed to understand the words in their linguistic exchange, one who understands a term T expects normal uses of it to commit one to believing that T's referent satisfies widely presupposed conditions. Since this is understood without being made explicit, speakers will routinely leave important parts of what they assert unsaid. In this way, information that's not part of semantic content becomes part of normal, efficient, communication.

Because of this, our pretheoretic conception of *meaning* incorporates both elements of what is ordinarily called *understanding* and what theorists call *semantic content*. One of the philosophical tasks of the 21st-century is to precisify these concepts and prise them apart. If, as seems undeniable, asserted content arises from *semantic contents* plus contents of widespread presuppositions associated with *understanding*, then a robust distinction between semantic content and *illocutionary content* will be needed in which the two aren't as closely correlated as they have often been thought to be.

The perceived gap between the two has been growing for some time. As semantic contents have come to be seen as increasingly austere, illocutionary contents of uses of even unambiguous, nonindexical sentences have come to be seen as varying from one context to another. This, it has been argued, can be so only if contextual information, extracted by pragmatic processes, routinely combines with semantically encoded information to produce asserted propositions other than, and not derivable from, the semantic contents of the sentences uttered.¹

¹ See chapter 3 of Soames (2002).

Since theses T1 - T3 link meaning to reliably tracked assertive content, the intermingling of semantic and pragmatic information in such content raises questions about how to separate the two in testing empirical theories purporting to identify sentence meanings. Ordinary competent speakers can't tell us what parts of the illocutionary contents of utterances reflect linguistic meaning or semantic content versus what parts are due to contextual factors. Speakers can, of course, tell us what *they would mean*, or take others to mean, by utterances of sentences in specific situations. But in so doing they merely tell us what they would there intend to use a sentence to say (assert), or take others to so intend. Although this ability to track illocutionary content is crucial, there is no comparable ability to identify which aspects of that content are due, in one way or another, to linguistic meaning and which arise from, and vary with, context. This is theoretical matter about which speakers don't need to have reliable views.

What then is the meaning of a sentence (or other expression)? There is, I suspect, no univocal answer. Instead, there are two poles of broadly semantic investigation. The first identifies conditions to be satisfied for speaker-hearers to count as *understanding* a sentence (or expression) in the way needed for normal, efficient use of it in communication. The second identifies *linguistically encoded information*, thought of as an invariant contribution to illocutionary contents across contexts.

One might hope that the semantic content of a sentence, relative to a context C, was always a constituent of the illocutionary content of a use of it in C, but this seems not to be so.² How, in light of this, should we proceed? One approach, advocated in Sperber and Wilson (1986), arises from a speculative psychological theory according which meaning or semantic content is contextually invariant information that is automatically decoded and pragmatically enriched by contextually sensitive unconscious inference to produce illocutionary content. The second answer, advanced in Soames (2008a), is that semantic content is a kind of *least common denominator*, abstracted by rational reconstruction. It is information associated with a sentence that must be mastered by any rational agent, in some way or other, over and above the general ability to reason efficiently, in order to track illocutionary content. How this mastery is psychologically realized may vary without foreseeable limit.³

In what follows, I will sketch three tasks for 21st century philosophy of language: (i) elaborating an improved conception of what propositions are and how they are related to

² Soames (2005a, 2005b, 2009a).

³ See section 4.2 of Soames (2018b).

sentence meanings, (ii) developing a conception of semantics incorporating the complex relationship between understanding sentences, using them with their correct semantic contents, and extracting illocutionary contents of such uses (which sometimes include and sometimes don't include, their semantic contents), and (iii) sketching the type of pragmatic theory we must develop if we are to systematically assign illocutionary contents to uses of sentences.

2. Taking Propositions Seriously

Propositions are objects of attitudes, primary bearers of truth conditions, contents of some cognitive and perceptual states, and semantic contents (at contexts) of sentences. Whether or not they are, as they are often said to be, the meanings of some sentences is, as we shall see, less obvious. They clearly aren't sets of truth-supporting circumstances or functions from circumstances to truth values. Elsewhere, I have argued that the coarse-grainedness problem for these truth-theoretic conceptions of propositions can't be solved by substituting finer-grained truth-supporting circumstances for metaphysically possible world-states.⁴ Nor can it be solved by diagonally determined sets of world-states (or functions from such to truth values) resulting from the pragmatic account of assertion in Stalnaker (1978), or the two-dimensional semantic account in Chalmers (1996).⁵

In addition, these truth-theoretic entities, unlike genuine propositions, need to be interpreted by theorists in order to function as bearers of truth conditions. A possible worlds semanticist who associates *S* with $\{w_1, w_2, w_3\}$ may tell you that the set represents the actual world-state, @, as being in it. Given this ex-cathedra pronouncement, you can assign truth conditions to *S*. But the theorist could just as easily tell you that the set represents @ as *not* being in it. The point isn't that one oracular statement is better than the other; no such statement should be needed. Propositions, as primary bearers of truth, shouldn't require interpretation.

A similar point can be made about a theory's assignment to *S* of a *function* from world-states to truth values. For the assignment to help, we must already know what truth and falsity are, and what the mapping is supposed to accomplish.⁶ Truth is the property a proposition *p* has when the world is as *p* represents it, and which, when predicated of *p*, gives us a claim one is warranted in accepting (or doubting) iff one is warranted in accepting (or

⁴ Soames (1987, 2008b).

⁵ Soames (2006) critiques Stalnaker's approach; Soames (2005b) critiques Chalmers.

⁶ See pp. 10-12 of Soames (2015).

doubting) p. Because propositions are conceptually prior to truth, truth can't be something from which propositions are derived. If, as I believe, world-states are properties of making complete world-stories (consisting of propositions) true, the same can be said about them. Both presuppose conceptually prior propositions and so are not building blocks from which propositions are constructed.

This conclusion has been obscured because *is true at* is typically left undefined. Everyone recognizes that *S is true at w* doesn't mean that *S would be true, if w were actual* -- since if it did, we couldn't correctly say that *'The earth moves' is true at w* is true provided that the earth moves at w, *no matter what, if anything, the sentence means at w, or whether it even exists at w*⁷. So, what does '*is true at*' mean? Typically we are told to interpret '*S is true at w iff at w, so-and-so*' as '*S*' *as used by us here and now, is true at w iff at w, so-and-so*.⁸ But what is this alleged bearer of truth, *S as used by us here and now*? It can't be S itself, since if it were, we wouldn't need the qualifying phrase. It is tempting to transform *S as used by us here and now* into *our use of S here and now*, which, I will shortly argue, is a cognitive act type with the representational content we use S to assert.⁹

First, notice the obvious -- that for S to be true at w is for S to express a proposition that would be true if w were actual. To say this is, of course, to presuppose antecedent conceptions of *the proposition S expresses* and *the monadic notion of truth* applying to it.¹⁰ Next, consider the pretheoretic triviality *if S means, or expresses, the proposition that the earth moves, then necessarily the proposition expressed by S is true iff the earth moves*. This plus the theorem *S is true at w iff at w, the earth moves* guarantees that S means something *necessarily equivalent to the proposition that the earth moves*. Although this doesn't fully specify S's meaning, it constrains it. But to get this far, we have had to take antecedent notions of truth and propositions for granted. If we aren't willing to do this, we couldn't extract any information about meaning from intensional truth theories. To provide real

⁷ 'S' is here a metalinguistic variable over sentences. Sentences may be abstract objects of some kind, provided their existence, and the meanings they happen to bear, are, as ordinary talk suggests, contingent matters.

⁸ 'S' is again a metalinguistic variable. The square quotes are called "corner" or "Quine" quotes. Here is an example. If 'P' and 'Q' are variables over sentences, the sentence *For all sentences P and Q [P & Q] is a sentence says For all sentences P and Q, the expression that consists of P, followed by '&', followed by Q is a sentence. Similarly, For all sentences P, [P is true iff P] says For all sentences P, the expression that consists of the left hand quote mark, followed by P, followed by the right hand quote mark, followed by 'is true iff,' followed by P is true.*

⁹ See also Soames (2016a and chapter 2 of 2018b) for discussion of a section of the *Tractatus* where Wittgenstein narrowly misses a promising conception of propositions based on this transformation.

¹⁰ Soames (2010c).

semantic theories, we must map sentences to real propositions the truth conditions of which are derived from their representational properties.

This isn't an argument for Frege-Russell propositions. Although their individuation conditions are better suited to accommodating the attitudes, they are still too coarse grained. Worse, the n-tuples of objects, properties, or senses are merely models. Because those structures, don't, without interpretation by us, represent anything as being any way, they are neither meanings nor primary bearers of truth.¹¹ Hence, we need a new conception of propositions.

The needed conception inverts the Frege-Russell idea that the intentionality of propositions is explanatorily *prior* to that of agents. According to that idea, agents who entertain propositions represent things as bearing certain properties *because* the propositions entertained do. But, since there is no explanation of how structured propositions represent, or what our entertaining them amounts to, it is mysterious how they represent, what cognizing them requires, and how *our* cognizing them results in *our* representing things as bearing properties. We can reduce the mystery by starting with the obvious fact that *agents* represent things as being various ways when they think of them as being those ways. We then ask, *What kind of entity P and what relation R can play the roles of propositions and entertaining in our theories by guaranteeing that agents who bear R to something of kind P represent things as being some way?* If we find such P and R, we can *explain* the intentionality of things of kind P by *deriving* it from the intentionality of those who bear R to them.

Looking at things in this way, we arrive at the hypothesis that *propositions are repeatable, purely representational, cognitive act types or operations; to entertain one is not to cognize it but to perform it*. When I perceive or think of the earth as moving, I *predicate* the property *moving* of it, which is to *represent it as moving*. To say of a proposition p that it represents *such-and-such as being so-and so* is to say that any conceivable agent who performs (i.e. entertains) p thereby represents *such-and-such as being so-and so*. Given this, we say that p is true at w iff things would be as p represents them, if w were actual. On this picture, no one has to entertain p (at w), nor need p exist (at w), in order for p to be true (at w).

To predicate a property B (e.g., *being blue*) of o is to perceptually or cognitively represent o as B -- to see, visualize, imagine, or cognize o as B in some way. These are different ways of predicating, *not different doings in addition to predicating*. Seeing o as B isn't predicating B of o *plus doing something else* (the doing of which is no part of the

¹¹ Soames (2010a)

predicating). There is no bare event of predicating B of o that isn't identical with an event of seeing o as B, visualizing o as B, etc.

To predicate *being blue* of o, but it isn't to *commit* oneself to o's being blue. We often predicate a property of something without committing ourselves in this way, as when we *imagine* o to be blue, visualize o as blue, or merely hear o described as blue. Predication isn't inherently committing, even though some instances of it -- e.g. those involved in judging or believing -- are either themselves committing, or essential to more encompassing acts that are. In this way, the act-type *predicating P of o* is like the act-type *traveling to work*, which, though not inherently effortful, has instances, like biking to work, that are. Similarly, one who judges or believes that o is P predicates *being P* of o in a committal manner, affirming the representational act. These truth-normed attitudes contrast with attitudes like *doubting*, which aren't. The things doubted may, of course, be true or false, just as the things believed may be. Since what is believed by x may be doubted by y, truth- and non-truth-normed attitudes have the same propositional objects. Although both affirming and doubting *that o is P* involve entertaining that proposition, only the former involves a cognitive commitment to it.

Assertion introduces a further element. Asserting that o is blue by saying "the water is blue" involves (among other things) performing a complex act of predication CP the sub acts of which are: using 'blue' to identify the property, using 'the water' to identify the predication target, and using 'is blue' to predicate the property of the target. By contrast, the simple, generic act of *SP* consists of: identifying *being blue* (no matter how), identifying the water (no matter how), and predicating the former of the latter. *SP* abstracts away from the different sub acts employed in CP to identify the property predicated and its predication target. Hence, SP and CP are *representationally identical but cognitively distinct propositions*. To entertain CP is to entertain SP, but not conversely.

This is the basis of a naturalistic epistemology of propositions. Since believing p doesn't require cognizing p, any creature that can perceive or think of p's subject matter can believe p, whether or not it can predicate properties of propositions. Knowing things *about* propositions requires the further ability to distinguish one's cognitive acts from one another. One who can do this can ascribe attitudes to oneself and others, and predicate properties of propositions. Focusing on their own cognitions, self-conscious agents identify distinct propositions as distinct representational states or operations, and come to conceive of truth as a form of accuracy.

So far I have spoken only of simple propositions, which predicate properties of objects. Complex propositions involve other operations, like negation, conjunction, and disjunction.¹² Like all propositions, they are cognitive acts that are defined in terms of worldly objects and properties (ways things can be). What is it to negate, conjoin, or disjoin properties? Presumably, for any property *P*, there is a property, *not being P*, that one can, in principle, cognize by performing the act of negating *P*. Like *P*, *not being P* is a constituent of non-cognitive reality, which no more contains anything designated by 'not' than *P* does. So, when we negate *not being P*, there is reason to think that resulting property is just *P*. Similarly, the conjunction or disjunction of a property *P* with itself is just *P*.

Next consider (i-iii).

- i. The act of (a) cognizing *o* and redness, and (b) predicating redness of *o*
- ii. The act of (a) cognizing *o* and redness, (b) negating redness, (c) negating *not being red* to give us redness and (d) predicating it of *o*,
- iii. The act of (a) cognizing *o* and redness, (b) conjoining/disjoining redness with redness to get *being red and red / being red or red*, i.e. redness, and (c) predicating that it of *o*.

Although act types (i-iii) are different, they all simply represent *o* as being red. Perhaps, then, the proposition *that o is red* is the higher act type, *representing o as red*, which can be performed in any of these ways (plus countless others). What about acts (i-iii) themselves? Might they be fine-grained meanings of the sentences '*O is red*', '*O is not not red*', '*O is red and / or red*', respectively? Perhaps so, if as seems natural, one can't understand a sentence without understanding the meanings of each of its expressions. On this view, the meanings of sentences, though not themselves propositions, are sub types of higher-order cognitive acts that are propositions (in something like the way that driving to work and walking to work are sub types of the act of traveling to work).¹³

Next consider truth-functionally compound propositions. To conjoin *that aRb* and *that bRa* we may (i) cognitively map them onto the properties *being such that aRb* and *being such that bRa* (each of which is either true of everything or true of nothing), (ii) conjoining them to get *being such that a bears R to b and being such that b bears R to a*, and (iii) predicating that

¹² Additional complex propositions are discussed in Soames (2015, 2016b).

¹³ The idea is that all there is to the representational content of a proposition is what it ends up representing as being what way. When different sequences of representational operations -- mapping properties onto properties, etc. -- culminate in the same final representational content, they are simply different ways of performing the same propositional act.

property of anything we like. (Let it here be the pair a, b .) The resulting conjunctive proposition represents a as bearing R to b and b as bearing R to a , and nothing more. Disjunction is similar. As before, neither the conjunctive nor disjunctive property contains anything denoted by 'and' or 'or'. So, *being such that aRb and/or being such that aRb* are both simply *being such that aRb* . Perhaps, then, the conjunction or disjunction of a proposition p with itself is just p . If so, conjunctive and disjunctive propositions may also be higher-order-act types.

Negations too? To negate *that Bill's dog is asleep*, we may (i) generate *being such that Bill's dog is asleep*, (ii) negate it, giving us *not being such that Bill's dog is asleep*, and (iii) predicate that property of whatever we want. (Let's say Bill's dog). The resulting proposition represents it as having that negative property (which doesn't contain anything designated by 'not'). What about the double negation of the original proposition? It represents Bill's dog as *not being such that it has the property of not being such that Bill's dog is asleep*. If to represent Bill's dog as having this property is just to represent it as *not being such that not being such that Bill's dog is asleep* -- which is identical with *being such that Bill's dog is asleep* -- then the move to propositions as higher-order act types may be extended further.

I switch now from *foundational* advantages of cognitive propositions to their advantages in addressing long-standing empirical problems. Because propositions have both cognitive and representational dimensions, they can represent the same things as being the same ways, and so impose identical truth conditions on the world, while imposing different conditions on minds that entertain them.

- 1a. Russell tried to prove (the proposition) that arithmetic is reducible to logic.
- b. Russell tried to prove logicism.
- 2a. Mary believes that Russell tried to prove (the proposition) that arithmetic is reducible to logic.
- b. Mary believes that Russell tried to prove logicism.

Let 'logicism' be a Millian name for the proposition L , *that arithmetic is reducible to logic*, designated by the *that*-clause. Although L is what the two terms contribute to the representational contents of (1), (1a) and (1b) express different propositions, and (2a) and (2b) can differ in truth value. If Mary picked up the name 'logicism' by hearing it used to designate some thesis in the philosophy of mathematics Russell tried to prove, (2b) may be true, even if she doesn't know his views about arithmetic, and (2a) is false. Although

propositions (1a,b) each require one who entertains it to predicate *trying to prove* of Russell and L, (1a) also requires one to identify L by entertaining it. Thus *to entertain, accept, or believe proposition (1a) is to entertain, accept, or believe, (1b), but not conversely*. From this, the different truth conditions of (2a,b) follow. Because propositions are cognitive act types, they can place different constraints on how one cognizes an item, even when they predicate the same property of the same things.

- 3a. I am in danger. *Said by SS*
- b. SS is in danger.
- 4a. I believe that I am in danger. *Said by SS*
- b. SS believes that SS is in danger.

Because propositions (3a) and (3b) are representationally identical but cognitively distinct, (4a) can be false even if (4b) is true. This happens when I see SS in a mirror at an odd angle and believe him to be in danger, without believing I am. Here, we distinguish predicating *being in danger* of SS cognized *in the 1st-person way* from predicating it of SS, however cognized. Since the same property is predicated of the same agent, the acts are cognitively distinct but representationally identical. For me to perform the first is always for me to perform the second, but not conversely. So when I realize that *I* am in danger, I come to believe a proposition I hadn't previously believed, even though my believing it is just my coming to believe, in a new way, something I already believed.

As (5) illustrates, one can report 1st-person beliefs of others without being able to entertain the propositions one reports them as believing.

- 5. (Every x: Fx) *x believes that x is G*

Suppose a use of (5) asserts that the propositional function expressed by the matrix clause *is true of every x who is F*. It is true iff each such x believes a proposition that predicates *being G* of x, while predicating nothing of anything else. If it is contextually assumed that the reported believers identify G's predication target in the 1st-person way, *de se* attitudes are ascribed; if not, *de re* attitudes are ascribed.¹⁴

- 6a. The meeting starts now! *Said at t*

¹⁴ Chapters 2 and 7 of Soames (2015) explain how we succeed in identifying and communicating various types of propositions we aren't in a position to entertain.

- b. I only just realized that the meeting starts now! *Said at t*

Just as for each person p there is a 1st-person way of cognizing p no one else can use to cognize p , so, for each time t there is a “present-tense” way of cognizing t *at t* that can’t be used at other times to cognize t . Suppose I want to attend a meeting starting at t – noon on July 1st. Although I remind myself of this that morning, I lose track of time later on. So, when I hear the clock strike noon, I utter (6a), and change my behavior. Coming to believe of t *in the present-tense way* that the meeting starts then motivates me to hurry off. Had I not believed this, I wouldn’t have done so, even though I would have continued to believe, of t , that the meeting starts then. As before, I believe something new by coming to believe something old in a new way; (6b) is true because the proposition to which I have just come to bear the *realizing* relation requires *cognizing t in the present-tense way*.

Linguistic cognition is another source of representational identity but cognitive distinctness. One who understands sentence (7) uses 'is' to stand for identity, 'water' to designate a natural kind k , and the name 'H₂O' (which is related to, but semantically distinct from, the phrase 'the substance molecules of which consist of two hydrogen and one oxygen atom') to designate k .

7. Water is H₂O

Since *using (7) to predicate identity of the pair* is a purely representational cognitive act, it counts as a proposition p^* that is representationally identical to, but cognitively distinct from, the cognitively undemanding proposition p that predicates identity of the pair without placing conditions on what expressions, if any, are used to identify the identity relation, or its predication targets.

This example may seem problematic since, given the widely-accepted semantic fact that 'water' and 'H₂O' have the same content, one takes the compositionally determined semantic content of (7) to be the triviality *that $k = k$* . Surely, that isn't what people intend to assert and communicate when they use (7). Still, they do assert the linguistically specific proposition p^* of the previous paragraph, which is distinct from the semantic content of (7), i.e. p .

How does this help? First, unlike its representationally identical cousin p , p^* is knowable only *a posteriori* since (despite making no claims about expressions) it can be known only by knowing that 'water' and 'H₂O' are codesignative. More importantly,

communicative uses of (7) typically occur in contexts in which speaker-hearers mutually presuppose that they *understand* the terms. In such cases, a speaker A asserts not only the bare proposition predicating identity of *k* and *k*, but also the corresponding proposition entertainable only by identifying *k* via the two terms. Although this proposition merely represents *k* as being identical with *k*, A's audience, B, extracts more information. Presupposing that A *understands* the terms, B reasons that A knows that she will be taken to be committed to the claim that *k* is both *a chemical compound involving hydrogen and oxygen and one instances of which are clear and potable, necessary for life, and found in lakes and rivers*. Realizing that A expects him to so reason, B correctly concludes that A *asserted* this informative, descriptively enriched proposition.¹⁵

So far, we have identified four significant ways of identifying predication targets -- identifying a propositional constituent of a complex proposition by *entertaining* it, identifying oneself *in the 1st-person way*, identifying a time by *cognizing it in the present-tense way*, and identifying something by *cognizing it linguistically*. Adding these sub acts, called *Millian modes of presentation*, to a more abstract propositional act-types places constraints on *how* predication targets are identified, without changing representational content. The cognitively distinct but representationally identical propositions thereby generated expand solution spaces for traditional problems of hyperintensionality. In fact, there are many more Millian modes, including vast families constraining how objects and properties are *perceptually* identified.¹⁶

3. Semantics, Pragmatics, and Understanding

The conception of propositions sketched above highlights the distinction between semantic and illocutionary content. The meaning of the first-person singular pronoun is given by the rule: *an agent x who uses it refers (directly) to x*. Since the semantic content of such a use is just *x*, the semantic content of my use of (3a) has the same as the semantic content of a use of (3b). First-person cognition is associated with the pronoun because I know *in the first person*

¹⁵ How then can A say to B, 7N. "In fact, water is necessarily H₂O" without asserting or communicating anything false? The answer hinges on what *understanding* requires. It requires knowing that most agents who use the terms take, and expect others to take, 'water' to stand for a kind instances of which fill the lakes and rivers, etc. and 'H₂O' to stand for a chemical compound involving hydrogen and oxygen. Presupposing that both parties understand the terms, A and B add descriptive content to A's utterance of (7). Since taking the terms to refer to kinds that *actually have those properties* doesn't tell us about what properties they have at merely *possible* world-states, A and B don't descriptively enrich the occurrences of the names under the modal operator when evaluating assertive utterances of (7N).

¹⁶ See chapters 2-8 of Soames 2015 for discussion of some further Millian modes and their relevance to various philosophical problems involving hyperintensionality.

way, when using it, that I am doing so. Combining this knowledge with my knowledge of the semantic rule, I know, *in the first person way*, that my use of (3a) predicates being in danger of me. One who understands the pronoun knows this (about everyone's use).

My assertive use of (3a) asserts a proposition that predicates *being in danger* of me, cognized in the first-person way, and (thereby) also asserts the bare semantic content of (3a,b), which doesn't require first-person cognition. My use of (3b) asserts only the later. What about (8) and (9)?

8a. I believe that *I am in danger*.

b. I believe that SS is in danger.

9a. I don't believe that *I am in danger*.

b. I don't believe that SS is in danger.

If it's clear that I am using the italicized clause to pick out a proposition requiring the predication target of *being in danger* to be cognized in the first-person way, then my use of (8a) reports belief, while my use of (9a) reports my disbelief, in the first-personal pragmatic enrichment of the semantic content of the clause. My use of (8a) also reports my belief in the semantic content of the clause, whereas my use of (9a) may not. Sometimes, the semantic content of the sentence I utter isn't asserted.

The point generalizes. Consider again a use of (6b) to say something true, and nothing false, even though its unasserted semantic content, shared with (6b*), is false. As before, what is asserted is a pragmatic enrichment of the content.

6b. I only just realized that the meeting starts now! *Said at t*

b*. I only just realized that the meeting starts at t!

Similar points apply when predication targets are identified perceptually or by specific linguistic means.

7a. Water is H₂O

b. Water is water

Earlier, I noted that although the semantic contents of the two terms are the same kind k , the conditions for understanding the terms explain why typical uses of (7a) assert more than *that* $k = k$. However, even agents who don't fully understand the terms, can use them to designate k , if they have picked them up from competent users intending to preserve reference.¹⁷ Since understanding comes in degrees, some communicative situations involve shared presuppositions that encode more, and some less, information than others. Still, even austere assertions made using (7a) will typically be more informative than those made using (7b). How about utterances backed only by the intention to use the terms to designate whatever others do. In such cases, we might truly say -- "*He has no idea of what water or H_2O are; he doesn't believe that water is H_2O ; in fact, he believes it isn't,*" -- without, thereby, ascribing any descriptively substantive belief to him. It is enough that he believes the nonidentity claim that requires the use of the different names for kind k , while not believing the corresponding identity claim.

Sometimes a mere difference in words, even if they are translations of one another, is enough to distinguish propositions asserted and the beliefs expressed by uses of them. When Kripke asks, of his bilingual Frenchman Pierre, who learned English by immersion, "*Does he, or doesn't he, believe that London is pretty?*" he is unable to answer because Pierre dissents from "London is pretty," while understanding it as well as any Englishmen, but assents to "Londres est jolie", while understanding it as well as any Frenchman. Kripke's quandary arises from the incorrect assumption that his use of the italicized clause univocally designates a single proposition. In the context of the story, Kripke's interrogative utterance is indeterminate between two questions. One, to which the answer is 'No', asks whether Pierre believes the proposition that predicates *being pretty* of *London* (using the English words). The other, to which the answer is 'Yes', asks whether Pierre believes the proposition that predicates *being pretty* of London (using the French words).¹⁸

Kripke next describes Peter, who wrongly takes different occurrences of 'Paderewski' to be occurrences of different, but phonologically identical, names of different men. Due to his error, Peter utters (10).

¹⁷ Kripke (1980), Putnam (1975). Although Kripke and Putnam agreed on this, Putnam also introduced the notion of commonly accepted stereotypes associated with natural kind terms, which was a precursor of the notion of understanding discussed here.

¹⁸ Kripke (1979) and chapter 4 of Soames (2015).

10. I don't believe *Paderewski the musician is Paderewski the statesman*; in fact I believe the negation of that proposition.

Here, Peter fails to recognize the second occurrence of 'Paderewski' as a recurrence of the first. Incorporating a leading idea of Fine (2007) into the framework of cognitive propositions, we distinguish (i), the proposition that predicates identity (or non-identity) of Paderewski and Paderewski, cognizing each via the name 'Paderewski' from (ii), the proposition that differs from (i) in also recognizing that recurrence. Anyone who entertains or believes (ii) thereby believes (i), but not conversely.

As shown in Salmon (2012), it is clear that *recognition of recurrence* is a key process linking ways of cognizing an object of thought or perception at a given moment to ways of cognizing it earlier, and to ways in which information about it is stored and accessed in memory. Such recognition can cross modes of cognition and perception. When the recognition involves language, it can involve recurring Millian modes of presentation associated with uses of the same or related symbols within a sentence or across sentence boundaries. Soames (2015) suggests that when it occurs within a sentence it affects the propositions uses of the sentence express.

Let ...n...n... be a sentence containing two or more occurrences of n, which designates o. For simplicity, suppose that uses of ...n...n... predicate R of o,o. The propositions associated with such uses may include (without being limited to): (a) one which merely predicates R of o,o; (b) one which differs from (a) only in requiring each occurrence of o to be identified using n; and (c) one which differs from (b) only in requiring recurrence of n (and o) to be recognized. The semantic content of ...n...n... is (a); (c) is trivial when R is reflexive and absurd when R is irreflexive. Like (a), (b) can be coherently believed or disbelieved, though the constraints on (b) are tighter than those on (a). Peter's use of (10) is true only if its assertive content is the relevant (c)-type proposition.¹⁹

The cognitive, but nonsemantic, significance of recognition of recurrence is important in resolving various puzzles, one of which involves a schematic version of Leibniz's law, understood as guaranteeing the truth of the semantic contents of its instances (in standard logical languages). So understood, (11a) is true, (11b,c) follow from (11a), and (11e) follows from (11c,d)

¹⁹ The example is interesting in requiring the assertive content of Peter's remark to require recognition of recurrence that Peter doesn't recognize.

- 11a. $\forall x,y (x=y \supset (Fx \supset Fy))$
- b. $\forall x,y (x = y \supset (\sim \text{Jones believes that } x \neq x \supset \sim \text{Jones believes that } x \neq y))$
- c. $\forall x,y (\sim \text{Jones believes that } x \neq x \supset (x = y \supset \sim \text{Jones believe that } x \neq y))$
- d. $\forall x \sim (\text{Jones believes that } x \neq x)$
- e. $\forall x,y (\text{Jones believes that } x \neq y \supset x \neq y)$

This can seem puzzling because, although (e) is (semantically) false, one can use (d) to truly assert that no one believes of any x that x isn't x , *recognizing the recurrence of x* (which is a pragmatic enrichment of (d)'s semantic content). The puzzle is resolved when one realizes that the semantic content of (11d) isn't a consequence of that assertion.²⁰

The larger issue here is the pervasive gap between semantic contents of sentences and illocutionary contents of uses of them. Sometimes the semantic content of S is one of several illocutionary contents of a single use of S ; sometimes it isn't. Sometimes the gap between S 's semantic content and its illocutionary content is small, and arises from a single factor. Sometimes it is large and arises from several factors. Pragmatic penetration of illocutionary content is widespread, including examples involving demonstratives, incomplete quantifiers, bare numerical quantifiers, conversational implicatures, the use of Gricean maxims to complete otherwise incomplete assertive contents, possessives, compound nominals, and temporal modification.²¹ Because of this the semantic/pragmatic interface has become central to contemporary philosophy of language. Future progress in semantics will depend on finding a systematic way to connect it to pragmatics.

4. The Challenge: Integrating Semantics and Pragmatics

In section 7.3 of Soames (2010b) I argue that the meaning, M , of S is a set of constraints on what normal uses of S assert or express. When S contains demonstratives, indexicals, or is otherwise semantically incomplete, M won't determine a complete proposition, and so must be pragmatically completed. When M does determine a complete proposition, whether or not it is asserted (expressed) depends on whether it is an obvious, relevant, and apriori consequence of the potentially pragmatically enriched propositions that are asserted (expressed). As I argue there, this view has advantages for dealing with uses of sentences

²⁰ Soames (2015), chapter 8.

²¹ Bach (1994) and chapter 7 of Soames (2010b)

containing demonstratives, indexicals, incomplete quantifiers (and descriptions), possessives, and compound nominals.

The advantages of this view can be extended by linking semantics and pragmatics through the notion *understanding* an expression, in the sense of knowing the contents of widely shared presuppositions -- which, though not determinative of semantic content, facilitates normal, efficient communication. These advantages are extended still further by recognizing enrichments of semantic content involving first-person, present tense, perceptual, and linguistic cognition, plus cases involving recognition of recurrence. All of these involve enrichments that generate assertive (or other illocutionary) content beyond semantic content, while facilitating judgments about whether or not underlying semantic contents are also asserted, based on whether they are apriori consequences of enriched propositions that are asserted (expressed).

Individual judgments of this sort are often easy to make. However, there currently is no general theory integrating semantic and pragmatic information in the generation of illocutionary content. Although key elements are obvious, they are also numerous -- linguistic meaning, time and place of utterance, identities of communicative participants, presuppositions of speaker-hearers, overall purpose of the linguistic exchange, and questions at issue at the time of utterance. What, so far, is lacking is a way of combining these in a comprehensive theory in which rational inference from different information sources identifies communicative content.

Since modern decision and game theory provide mathematical models of rational belief and action, we need to figure out how to extend existing multi-person signaling games to incorporate meaningful linguistic signals into games in which speaker-hearers maximize benefits by exchanging information that advances their communicative goals. The aim is to spell out how ideally rational speaker-hearers converge on information that is asserted and conveyed by actual speaker-hearers, using semantic and pragmatic information contextually available to them. Although such a theory won't translate point by point into a theory of psychological processing, it will constrain such a theory, and help explain how whatever those processes turn out to be generate the rational, efficient, and cooperative exchange of information that characterizes much ordinary linguistic communication. This, I believe, is the most important twenty-first century philosophical task for advancing the sciences of language and information.

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