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## **Propositions**

Sean Crawford  
University of Manchester

***Abstract** A number of traditional roles that propositions are supposed to play are outlined. Philosophical theories of the nature of propositions are then surveyed, together with considerations for and against, with an eye on the question whether any single notion of a proposition is suited to play all or any of these roles. Approaches discussed include: (1) the structureless possible-worlds theory; (2) the structured Russellian theory; and (3) the structured Fregean theory. It is noted that it is often unclear whether these are accounts of what propositions are, ontologically speaking, or whether they are accounts of how propositions are best represented in a formal semantic theory.*

When an English speaker utters the sentence ‘Snow is white’ and a French speaker utters the sentence ‘La neige est blanche’ there is clear sense in which they have both said the same thing. Moreover, given that they both intend sincerely to express their beliefs by uttering these sentences, there seems a clear sense in which they both believe the same thing. Philosophers call this thing that both have said and that both believe, a *proposition*. The declarative sentences we utter and write down are said to have propositions as their *linguistic meanings* and to *express* those propositions. Two or more sentences (in the same language or in different ones) can have the same proposition as their meaning, that is, they can express the same proposition, just as different numerals—

e.g., the Arabic numeral ‘4’ and the Roman numeral ‘IV’ — can designate the same number, namely four. Moreover, propositions are supposed to be the contents of many of our mental states, such as belief, knowledge, doubt, supposition, memory, desire, intention and so on. Russell (1903) called these mental states ‘propositional attitudes’.

### **1. Roles for Propositions**

The notion of a proposition has played, and continues to play, important roles in the philosophy of logic, philosophy of language, and philosophy of mind. Three of those roles have been mentioned already: propositions are the linguistic meanings of the sentences we utter or write down, they are the contents of our sayings when we utter or write down those sentences, and they are the contents of our thoughts. Propositions are commonly thought to have other important functions too. They are often taken to be the “primary bearers” of truth and falsity, in the sense that the sentences we utter, and the beliefs we have, are true or false only derivatively in virtue of the propositions associated with them being true or false. Propositions are also said to be the primary bearers of modal properties, such as necessity, contingency, possibility, impossibility, and so on. And logical relations, such as consistency, inconsistency and entailment are said to hold between or among propositions. It is a good question whether any single notion of a proposition can play all these roles at once. Sentences containing indexicals, for example, cause difficulties in this regard, for they seem to suggest that the linguistic meaning of a sentence may differ from the proposition it expresses. When I say ‘I’m hungry’, and when you say ‘I’m hungry’, there is a sense in which our respective sentences have the same meaning; but it also seems clear that they express different propositions, one about

me and the other about you. Conversely, when I say ‘I’m hungry’ and you say, addressing me, ‘You’re hungry’, we seem to have said the same thing, that is, expressed the same proposition, but uttered sentences with different meanings. In light of this, Kaplan (1989) has distinguished between the *character* (roughly, linguistic meaning) and the *content* (proposition expressed) of a sentence. Whether any single notion of a proposition can play all these different roles depends very much on what propositions are taken to be, ontologically speaking. So what then are propositions exactly? What are these entities, “propositions”, that we assert and believe and that are true or false and necessary or contingent?

## **2. Propositions as Abstract Entities**

The history and development of the concept of the proposition is a long and complex story (Gale 1967); but contemporary accounts derive most immediately from Frege’s attack on psychologism and the *fin de siecle* revolt against idealism inaugurated by Russell and Moore (Frege 1892a, 1918; Russell 1903; Moore 1899; Hylton 1984). The core of this shared account is the idea that propositions are mind-independent, extra-linguistic abstract entities akin to numbers, mathematical functions and sets.

This core idea subsequently came under persistent attack by Quine (1960; 1986) who viewed propositions (and other “intensional” entities such as properties and relations) as “creatures of darkness” owing to the alleged lack of any criteria for individuating them and their essential involvement with what Quine (1951) deemed the obscure and suspect notions of *meaning* and *synonymy*. In the service of his sparse desert ontology, Quine proposed to replace abstract propositions with concrete sentences (propositions are really

just unnecessary “shadows” of sentences anyway, to invoke Wittgenstein’s metaphor) or, more accurately, with mathematical sequences of word-tokens that have been uttered or inscribed at some time (Quine 1960, p.195). However, neither Quine’s relentless critique of propositions as abstract entities nor his replacement of them as sentences has been widely accepted. Moreover, despite Quine’s closely related attack on modal notions, such as necessity and possibility, the rise of modal logic and modal metaphysics continued unabated and accorded a central place to propositions construed as abstract entities. The seminal work of Kripke (1972) was instrumental in turning the tide against Quine.

Let us then turn to the most popular contemporary approaches to the nature of propositions as mind-independent, extra-linguistic abstract entities. As we shall see, there has been some lack of clarity about whether theories of propositions are theories about what propositions *are*, ontologically speaking, or whether theories of propositions are theories about how they should best be represented or modelled in a formal semantic theory.

### **3. Two Approaches: Structured and Structureless Entities**

Generally speaking, the theories can be divided into two sorts. The first takes propositions to be certain kinds of *structured* entities with components standing in various relations to each other—the structure of the entities roughly mirroring the structure of the sentences that express them. The second takes propositions to be *structureless* entities. The structureless approach invokes the notion of a “possible world”, borrowed from the new model theory for modal logic developed in the 1950s and 60s, known as “possible worlds semantics”. A “possible world” is a “way things could have

been”. The idea is that a proposition is a set of possible worlds (the set of worlds at which the proposition is true); or, equivalently, a proposition is a function (in the mathematical sense) from the set of possible worlds to the set of true values. That the possible-worlds approach to propositions treats propositions as structureless is easily seen. Consider the sentences ‘Russell is not alive and Frege is not alive’ and ‘It is not true that either Russell is alive or Frege is alive’. These sentences have very different structures: the first is a conjunction of two negations and the second is a negation of a disjunction. Yet they are true in the same possible worlds because they are logically equivalent. According to the possible-world approach, both sentences therefore express the same proposition.

On the structured approach, however, these two sentences will express different propositions – because on the structured approach a proposition is not individuated in terms of the possible worlds in which it is true, but rather in terms of the constituents that make up the proposition. On this account, a proposition is a structured entity composed out of parts, where the parts and the order of composition more or less mirror the parts and order of composition of the sentences that express the proposition.

#### **4. Two Structured Approaches: Russellian and Fregean**

There are, broadly speaking, two types of structured theory, the first deriving from Russell (1903) and the second from Frege (1892), and which are distinguished from each other by what they take the constituents of propositions to be. On the Russellian (or “neo-Russellian”) approach, the constituents of the propositions we assert and believe, and to which truth and falsity and modal properties belong, are the objects, properties and relations that our assertions and beliefs are about: desks, trees, other people, and other

everyday objects. On the Fregean approach, propositional constituents are rather “senses” or “modes of presentation” (or concepts or “ways of thinking”) of the objects, properties and relations our saying and thoughts are about: modes of presentation of desks, trees and other people. There are also combination views, according to which propositional constituents are both the things our sayings and thoughts are about and modes of presentation of those things.

On the Russellian view, propositions are identified with ordered pairs of  $n$  objects and an  $n$ -place relation:  $\langle \langle x_1, \dots, x_n \rangle, X^n \rangle$ . The proposition that Maggie is cooking is thus identical with the ordered pair:  $\langle \text{Maggie}, \text{cooking} \rangle$ . The Fregean will identify propositions with ordered pairs of  $n$  modes of presentation (of objects) and an  $n$ -place mode of presentation (of a relation):  $\langle \langle m_1, \dots, m_n \rangle, M^n \rangle$ . Here  $m_1, \dots, m_n$  are modes of presentation of  $x_1, \dots, x_n$  and  $M^n$  is a mode of presentation of  $X^n$ . The proposition that Maggie is cooking, for the Fregean, is thus the ordered pair:  $\langle \text{mode of presentation of Maggie}, \text{mode of presentation of cooking} \rangle$ . A third view, which combines Russellian and Fregean elements, has it that the propositions we believe contain both the items our beliefs are about and modes of presentation. For example, we might believe or assert “quasi-singular propositions” (Schiffer 1978, Recanati 1993), which contain objects, properties and relations, and modes of presentation of all these things:  $\langle \langle \langle x_1, m_1 \rangle \dots \langle x_n, m_n \rangle \rangle, \langle X^n, M^n \rangle \rangle$ . On this view, when Tom believes Maggie is cooking, the proposition he believes is identical with the ordered pair:  $\langle \langle \text{Maggie}, \text{mode of presentation of Maggie} \rangle, \langle \text{cooking}, \text{mode of presentation of cooking} \rangle \rangle$ . It is possible, of course, to hold that sometimes we believe one type of proposition (e.g., a Russellian one) and sometimes we believe another type (e.g., a quasi-singular one), depending on the

situation and context in question. For present purposes, however, the important point is that propositional constituents are either objects, properties and relations or modes of presentation of these things (often just called *concepts* of them—though this contemporary use of the term ‘concept’ should be distinguished from Frege’s very different use of that term). And the propositions we believe—if there are such things—are composed out of such items in some way or another.

### **5. Ontology or Semantics?**

So far we have been speaking as if both the structureless and structured accounts of propositions were accounts of what propositions *are*. If this is correct, then, on the structureless account, what we assert when we assert a proposition and what we believe when we believe a proposition, is a *set* or a *function*. Similarly, on the structured accounts, to assert or to believe that Maggie is cooking is to stand in a relation to an ordered set. On the face of it, this does indeed seem very implausible (Bealer 1998). Moreover, it is hard to understand how ordered sets could be true or false or necessary or contingent. These set-theoretic constructions just do not seem to be the kinds of things that can have the properties that propositions are supposed to have. The structured position suffers from another problem too: *which* ordered set is the proposition that Maggie is cooking? Taking the Russellian approach as an illustration: Is it <Maggie, cooking> or is it <cooking, Maggie>? There seems no way to determine (non-arbitrarily) which ordered set a certain proposition is (Bealer 1998; Jubien 2001; this general difficulty of reducing abstract objects, such as numbers, to sets is due to Benacerraff 1965).

In light of this, it seems best to take the structureless and structured approaches as rival ways of representing propositions in a formal semantic theory and not as accounts of what propositions are. Whether or not this is an adequate response to the foregoing objections, it is evident that even interpreted as proposals about how to represent propositions, each approach is still not without its problems.

## **6. A Problem for the Structureless Approach**

The structureless account appears to face what seems to be a devastating objection, stemming from the fact that it implies that all necessarily equivalent propositions are identical. Since the sentences ‘A sister is a female sibling’ and ‘A brother is a male sibling’ are true in all possible worlds, they express the same proposition. But these sentences obviously have different meanings and thus seem to express different propositions. Moreover, if belief is a binary relation between a subject and a proposition, and a proposition is a set of possible worlds, then, for any necessarily equivalent propositions P and Q, if S believes P, then it follows that S believes Q. So, for example, if Maggie believes that  $5+5=10$ , she must then believe that arithmetic is incomplete, since both these things are true in every possible world. Valiant efforts have been made to mitigate these counter-intuitive consequences (Stalnaker 1984) but none have achieved widespread acceptance. The very structurelessness of propositions on the possible worlds account means that propositions are not “fine grained” enough to serve as the objects of attitudes and the meanings of sentences. There are just not enough to go around on the possible worlds account. (Another approach to this problem, within the possible worlds framework, found in the work of Lewis (1972) and Montague (1974), invokes “structured



intensions” and derives from Carnap’s (1947) notion of “intensional isomorphism types”.)

## **7. Problems for the Structured Approaches**

The majority of philosophers, then, adopt a structured approach, either a Russellian one or a Fregean one. Turning first to the Russellian representation of propositions, it is evident that it will be able to distinguish among necessarily equivalent propositions. The propositions expressed by the sentences ‘Sisters are female siblings’ and ‘Brothers are male siblings’ have different constituents and are therefore distinct. So the Russellian, manages to achieve a certain fineness of grain in his representation of propositions. It is a matter of controversy, however, whether his representation of propositions is fine enough. For the Russellian, the sentences ‘George Eliot is a novelist’ and ‘Mary Anne Evans is a novelist’ express the same proposition, because the parts of each sentence (e.g., the proper names and predicates) refer to (and are true of) the same things, and it is these same things that form the constituents of the propositions that each expresses. Now, whether or not we want to say that these sentences have different meanings, it has seemed to some philosophers that we do want to say that someone could believe George Eliot is a novelist without also believing that Mary Ann Evans is a novelist (even though George Eliot *is* Mary Ann Evans). In other words, belief content—and cognitive content more generally—appears to be extremely fine-grained. Importantly, cognitive content appears to be more fine-grained than a representation using only the worldly objects, properties, and relations that our thoughts are about, can cope with. Since, for the Russellian, the two aforementioned sentences express the same proposition, and belief for the Russellian is a

relation between a subject and a proposition, it follows that it is impossible for the two sentences ‘Ralph believes that George Eliot is a novelist’ and ‘Ralph believes that Mary Ann Evans is a novelist’ to differ in truth-value. Philosophers of a Fregean bent, however, argue that they can differ in truth-value—that such a difference in truth value is required, for example, in order to explain the linguistic and non-linguistic behaviour of agents—and that the Russellian theory must therefore be wrong. Russellians have offered systematic replies to these arguments (Salmon 1986; Soames 1987; Braun 1998) but the debate remains open.

The Fregean conception of propositions exhibits perhaps the finest grain and is thus able both to distinguish among necessarily equivalent propositions (like the Russellian account but unlike the unstructured possible-world account) and to allow for a difference of truth-value between the two foregoing belief sentences. Because the constituents of propositions are modes of presentation (or concepts or “senses”) of the things that our beliefs are about, and modes of presentation are many-one related to these things, there will be many more modes of presentation than the things they are modes of presentation of; and so the requisite fineness of grain necessary for distinguishing between the propositions expressed by the sentences ‘George Eliot is a novelist’ and ‘Mary Anne Evans is a novelist’ will be achieved. Since these two sentences express different propositions, because the conceptual constituents are different, it is possible for a person to believe the proposition expressed by one but not believe the proposition expressed by the other.

This extra fineness of grain is bought at a certain cost, however, for it seems that the propositional grain is perhaps now too fine for propositions to play the role of the

linguistic meanings of sentences. Arguably, since, for example, ‘attorney’ and ‘lawyer’ are synonyms, the sentences ‘Lawyers are wealthy’ and ‘Attorneys are wealthy’ are synonymous, that is, have the same meaning; they should therefore express the same propositions (if propositions are supposed to be the meanings of sentences). But it seems possible for a person to believe that lawyers are wealthy but to doubt whether attorneys are, indicating for the Fregean that the two sentences express *different* propositions. If the linguistic meanings of sentences are more coarsely grained than the cognitive contents of thoughts according to the Fregean, it is not clear whether a single thing—a proposition—can play both roles.

The Fregean theory is also incomplete in a way that the Russellian theory is not, and this takes us back to the ontological question of what propositions *are*, as opposed to the question of how best to represent them. The Russellian has a clear account of what the constituents of propositions are: the ordinary objects, properties, and relations that our thoughts and sayings are about. For the Fregean, however, the constituents of propositions are sense or modes of presentation or concepts of the things that our thoughts and sayings are about. But what *are* these modes of presentation, these senses? All attempts to say what they are have been subjected to powerful and sustained criticism and for this reason it is not clear whether the Fregean theory can ever be completed (Schiffer 2003).

However, just because the Russellian has an account of what propositional constituents are does not mean that the Russellian theory is complete. For the Russellian theory suffers from the lack of any account of what binds propositional constituents together to form a unity, rather than a loose collection of unrelated parts. How is a

proposition distinguished from a mere *list* of items? Frege (1892b) himself held that the key to this was to be found in the nature of the propositional constituents themselves: at least one of them is always “incomplete” or “unsaturated” and is “completed” or “saturated” by the other constituents, which are themselves already complete or saturated. Russell (1913) struggled heroically for many years, indeed decades, to solve this “binding” problem or “the problem of the unity of the proposition” (a problem first stated by Plato in *The Sophist*) without ultimate success. Contemporary Russellians, however, have been more concerned with the construction of formal semantic theories that invoke model-theoretic representations of propositions rather than with the metaphysical question of what binds or glues propositional constituents together into a propositional unity. This difficult and ancient question is once again beginning to receive the attention it deserves (Gaskin 1995; King 1995; Jubien 2001; Gibson 2004).

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### **Suggested Cross References**

Modal logic; Russell; Frege; Quine; Montague semantics; propositional attitudes; character/content distinction; de dicto/de re; objects, properties and functions; possible worlds, philosophical theories of; propositional attitude ascription, philosophical aspects; sense and reference, philosophical aspects; truth, primary bearers of; intensions and meaning.

### **Key Words**

propositions, meanings, content, propositional attitudes, possible worlds, structured propositions, structureless or unstructured propositions, Fregean, Russellian, sense, mode of presentation, semantic theory, ontology, unity of the proposition.

### **Biography**

Sean Crawford has a BA from Simon Fraser University, an MA from Dalhousie University, and a DPhil from the University of Oxford. He teaches philosophy at the University of Manchester and is the author of several articles on the philosophy of mind and philosophy of language.