

PROPOSITIONAL ATTITUDES WITHOUT PROPOSITIONS

ABSTRACT. The most common account of attitude reports is the relational analysis according to which an attitude verb taking *that*-clause complements expresses a two-place relation between agents and propositions and the *that*-clause acts as an expression whose function is to provide the propositional argument. I will argue that a closer examination of a broader range of linguistic facts raises serious problems for this analysis and instead favours a Russellian ‘multiple relations analysis’ (which has generally been discarded because of its apparent obvious linguistic implausibility). The resulting account can be given independent philosophical motivations within an intentionalist view of truth and predication.

The traditional view is that propositional attitudes are relations between agents and propositions. At least this is what the linguistic form of attitude reports bears on its sleeve. Attitude reports such as (1a) seem to have the same logical form as sentences with noun phrases acting as ordinary singular terms such as (1b), and quantification over both sorts of objects seems possible in the same way as well, as in the inferences from (1a) and (1b) to (2a) and (2b) respectively:

- (1)a. John believes that Mary arrived.
- b. John likes Mary.
- (2)a. John believes something.
- b. John likes something.

In (1a) and (1b), the clause *that Mary arrived* and the noun phrase *Mary* seem to stand for entities – propositions in the first case and objects in the second case – which function as arguments of the relations expressed by the verbs *believe* and *like*.

But there is also a different view, namely that propositional attitudes are in fact not relations between agents and propositions and that the semantic role of the *that*-clause complement of an attitude verb is not that of providing an argument of an attitudinal relation. This view has been elaborated in different ways by Russell, Quine, Prior, Matthews, and Tye among others. I will argue that there is substantial linguistic evidence as well as



philosophical plausibility for this view. Attitude verbs, I will argue, do not, at least not primarily, express relations between agents and propositions, but rather specify relations among agents and propositional constituents. Propositional attitudes themselves then are best understood as ways of combining certain propositional constituents, as ‘modes of predication’. On this view, a *that*-clause does not denote or express anything at all, but rather provides a configuration of propositional elements that are to be linked in the way specified by the attitude verb.

This analysis of attitude reports has a historical predecessor and can in fact be viewed as a development of a semantic idea Russell espoused at one stage. According to Russell, a *that*-clause is an ‘incomplete symbol’ and the attitude verb specifies a ‘multiple relation’ which relates the agent to the various propositional constituents provided by the *that*-clause.

Propositions on the analysis I propose will play no role as objects in the semantic structure of a sentence like (1a). However, proposition-like objects come into play when special quantifiers such as *something* as in (2a) are used. Such quantifiers, though, do not range over pure propositions, but act like nominalizations such as *John’s belief*, which, I will argue, refer not to propositions, but to objects individuated both on the basis of propositional constituents and their attitudinal mode of combination.

The semantic analysis of attitude reports I propose can be motivated independently on purely philosophical grounds, namely within an intentionalist view of content according to which there are no truth-bearing contents without intentional agency.

The paper is organized as follows:

- (1) It gives a more explicit characterization of the traditional, i.e., relational analysis and one of its crucial motivations, namely the use of ‘special’ quantifiers such as *something*.
- (2) It presents two main problems for the relational analysis and discusses the true nature of special pronouns.
- (3) It develops the Russell-inspired nonrelational analysis and shows how it accounts for the problems for the relational analysis and the behaviour of special pronouns.
- (4) It gives an independent intentionalist philosophical motivation for that analysis.
- (5) In an appendix, it discusses alternative nonrelational analyses that have been proposed in the literature.

1. THE RELATIONAL ANALYSIS OF ATTITUDE REPORTS

The traditional view takes *that*-clauses embedded under an attitude verb to stand for a certain kind of object, a proposition, which the attitude verb takes as its argument. Propositions thus serve two purposes: they are the meaning of sentences and they are the objects of propositional attitudes. This traditional account of attitude reports is what I call the *relational analysis*. In its most general form (as far as relevant for the purpose of our discussion), the relational analysis can be characterized, by the following two assumptions:

- (3) *The Relational Analysis of attitude reports*
- (1) A *that*-clause embedded under an attitudinal predicate stands for a proposition that acts as an argument of the predicate.
 - (2) An attitude verb taking a *that*-clause as complement expresses a relation between agents and propositions.¹

On the relational analysis, (4a) will have the logical form given in (4b), where $\llbracket \textit{that Mary arrived} \rrbracket$, the denotation of *that Mary arrived*, is the proposition that Mary arrived:

- (4)a. John believes that Mary arrived.
- b. believe(John, $\llbracket \textit{that Mary arrived} \rrbracket$)

There are different variants of the relational analysis as characterized in (3). First, there are different views of what propositions are, e.g., sets of possible worlds or situations, complexes of the meanings of constituents (structured propositions), or primitive entities.² The particular way propositions are conceived, however, won't matter for the discussion to follow.³ Second, there are different views within the relational analysis concerning the semantic relation between *that*-clause and proposition, whether it is the relation of reference (as with referential noun phrases) or whether *that*-clauses, like independent sentences, only 'express', rather than refer to propositions. Again, such differences won't matter for our discussion. What matters is only that the state of affairs described by an attitude report as a whole is that of a relation holding between an agent and a proposition.

The relational analysis receives particular support from what appears to be quantification over propositions, as in inferences such as (5a) and (5b) (i.e., (1a) and (2a)), and anaphoric reference to propositions, as in (5c):

- (5)a. John believes that Mary arrived.
John believes something.
- b. Mary believes everything Bill believes.
Bill believes that it is raining.
Mary believes that it is raining.
- c. John believes that he might have to resign. Mary believes that too.

There is an obvious alternative analysis of such quantifiers and pronouns, however, on which they do not particularly support a relational analysis at all. On this analysis, the quantifier would be substitutional (cf. Schiffer 1987) and the anaphor an E-type pronoun (to be replaced by a copy of the linguistic antecedent). If such an analysis were viable, then the relational analysis would lose one of its crucial motivations (cf. Schiffer 1987). However, such an analysis fails for simple linguistic reasons. If the quantifier *everything* was substitutional, then the substituent would have to be of the right syntactic category as required by all the formal contexts in which it were to appear. But this is in fact not necessary. In (6a), *something* and *everything* are acceptable even though they would require sentential substituents with respect to *imagined* and *promised*, but noun phrase substituents with respect to the prepositions *about* and *of*:

- (6)a. John imagined something I never thought about.
- b. John promised everything I ever dreamed of (namely that S, that S', that S'', ...).

Thus, if what John imagined and what I never thought about is that I would become a dancer, then for (6a) to be true, the truth of the following would be required: *John imagined that I would become a dancer and I never thought about that I would become a dancer*. This sentence, however, is ungrammatical as *about* does not take clausal complements (though it accepts the almost equivalent *the possibility that I might become a dancer*). This means that quantifiers like *everything* and *something* care about objects only and not syntactic categories, and hence must be objectual in nature.

Similarly, ‘propositional anaphora’ like *that* need not respect the syntactic category of the antecedent. Thus, *that* in (7) is acceptable even though *about* does not take *that*-clauses as complements:

- (7) John believes that he might have Swedish ancestors. Mary never thought about that.

Thus, there is no immediate replacement analysis available for propositional quantifiers and anaphora and so the relational analysis seems to retain one of its crucial motivations.

I will argue both that there are fundamental problems for the relational analysis and that the analysis of special quantifiers and pronouns as standing for propositions is mistaken. Instead of analysing (4a) as in (4b), I will analyse it as in (8):

- (8) $R(\text{John}, \langle \text{ARRIVE}, T_1 \rangle, \langle \text{Mary}, T_2 \rangle)$

Here R is a relation specified by *believes* in the particular context of (4a), a relation which connects the agent to the propositional constituents given by the *that*-clause, and T_1 and T_2 are contextually relevant modes of presentation (following the standard literature on propositional attitudes)

I will analyse quantifiers and pronouns as in (5) as ‘nominalizing’ expressions, that is, as expressions inducing a new domain of objects on the basis of the contribution of the attitude verb and the content of a sentence. Like nominalizations such as *John’s belief that S*, they will, I argue, not stand for propositions, but objects individuated both on the basis of a propositional content (that of S) and an attitudinal mode (and perhaps an agent). Thus, *what John believes* will not be analysed as in (9a) (as the relational analysis would have it), but rather, if John believes that Mary arrived, as in (9b), an entity uniquely determined (by a function f) by the attitudinal relation, the propositional constituents, and the agent:

- (9a. $\llbracket \textit{what John believes} \rrbracket = \iota x[\text{believe}(\text{John}, x)]$
 b. $\llbracket \textit{what John believes} \rrbracket = \llbracket \textit{John’s belief that Mary arrived} \rrbracket = f(R, \langle \text{ARRIVE}, T_1 \rangle, \langle \text{Mary}, T_2 \rangle, \text{John})$

The relational analysis of attitude reports goes along with a *relational conception of propositional attitudes*, according to which propositional attitudes are fundamentally relations between agents and propositions. This conception appears primarily motivated by the linguistic form of attitude reports, though – the parallelism between nominal and clausal complements and the use of special pronouns and quantifiers in place of both. I

will argue that the form of attitude reports – both with clausal complements and with pronouns and quantifiers in place of them – not only requires a different semantic analysis than the relational one; it also motivates a different view of the nature of propositional attitudes. But first let us turn to the problems for the relational analysis and the semantic behavior of special quantifiers and pronouns.

2. PROBLEMS FOR THE RELATIONAL ANALYSIS

2.1. *The Substitution Problem*

The relational analysis faces two major problems. The first problem is what I will call the *Substitution Problem*. If *that*-clauses denote propositions, then they should share their denotations with nominal constructions of the sort *the proposition that S* (at least given a philosopher's use of proposition aimed at describing the kinds of things denoted by *that*-clauses). But it is not generally possible to replace a *that*-clause by *the proposition that S* (for philosophers and non-philosophers alike). Even though *believe* allows for a replacement of a *that*-clause by *the proposition that S*, many other attitude verbs don't – an observation first made by Prior (1971) and more recently found in Asher (1987) and Bach (1997). Thus, even though the inference in (10a) is valid, the one in (10b) with *remember* (and similar verbs such as *recall* and *remind*) is not, and neither is the inference in (10c) with *wish* (and similar verbs such as *predict* and *expect*) and in (10d) with *fear*:

- (10)a. John believes that S.
John believes the proposition that *S*.
- b. John remembered that S.
John remembered the proposition that *S*.
- c. John wishes that he will win.
John wishes the proposition that he will win.
- d. John fears S.
John fears the proposition that *S*.

Whereas the circumstances for the premises in (10b-d) to be true can be quite ordinary, those in which the conclusions are true need to be rather special.^{4,5}

Referential noun phrases, by contrast, allow for unlimited substitution in extensional contexts. If a particular tree is the referent of the utterance

of *the tree*, then if (11a) is true, (11b) is true as well for any predicate *P* that holds only of the tree:

- (11)a. John saw the tree.
- b. John saw the *P*.

Even with *P* being *is referent of the utterance of 'the tree'* we get a marked contrast to the conclusions in (10b–d).

The proposition that S in (10b–d) is not unacceptable for a syntactic reason that the predicates wouldn't admit noun phrases. The same predicates do allow for certain quantificational and pronominal noun phrases:

- (12)a. John remembered something.
- b. John wishes that too.
- c. John fears everything Mary fears.

The quantifiers and pronouns that can generally replace *that*-clauses belong to a particular class of what I call *special quantifiers* and *special pronouns*. This class includes any combination of a quantifier and *-thing* (*something, everything, nothing, a few things*), the anaphora *that* and *it*, and the relative pronouns *what* and *whatever*.

Sometimes *that*-clauses can only be replaced by other nominal constructions than *the proposition that S*. For example, past-oriented factive verbs such as *remember* generally allow for a replacement by the *fact that S*, as in (13a) (but not by *the proposition that S*). Moreover, negative future oriented verbs like *fear* (with some effort) tolerate a replacement by *the possibility that S*, as in (13b) (but not by *the proposition that S* nor *the fact that S*):

- (13)a. John remembered that it was raining.
John remembered the fact that it was raining.
(invalid: the proposition that it was raining)
- b. John fears that it might rain.
John fears the possibility that it might rain.
(invalid: the proposition that it might rain/the fact that it might rain)⁶

Assuming that propositions are distinct from facts as well as possibilities, the relational analysis should then perhaps be modified in such a way that *that*-clauses may denote different kinds of proposition-like objects and

that-clause-taking verbs differ in what kinds of propositional arguments they take: some verbs take propositions, others take facts, and yet others take possibilities as arguments. Setting aside what the differences between propositions, facts, and possibilities may be, it appears that the Modified Relational Analysis faces two difficulties.⁷

The Modified Relational Analysis first of all has to deviate from the original relational analysis in that it cannot assimilate the function of *that*-clause complements to that of referential noun phrases anymore. It appears that *that*-clauses cannot stand for different kinds of propositional arguments on their own (by either being ambiguous or by somehow referring to propositional objects indirectly, via the proposition they refer to directly). Rather it is the predicate that determines how a clausal complement is to be understood. For example, the *that*-clause in (14a) can only be understood as standing for the fact, not the proposition or the possibility, that Mary left. Similarly, the *that*-clause in (14b) can only be understood as standing for the possibility, not the proposition or the fact, that Mary might leave:

- (14)a. John remembered that Mary has left.
 b. John fears that Mary might leave.

This *Unique Determination Property* of clausal complements, as I will call it, means that a clausal complement stands for a particular kind of propositional object only in the presence of a particular embedding predicate, thus losing its referential independence.

There is another even more severe problem for the relational analysis. Many attitude verbs, it appears, don't allow any description or non-special quantifier – however carefully chosen – to replace a *that*-clause. Among nonfactive verbs that disallow any replacement by a description are *claim* as well as *remark*, *conclude*, *think*, and *imagine*. Not only do these verbs resist nominal constructions of the sort *the proposition that S*, but also most carefully chosen descriptions such as *the object that is also the object of Mary's claim* or most general and 'innocent' quantifiers such as *some entity*. Thus, none of the following inferences are valid:

- (15) John claimed that S.
 John claimed the proposition that *S*/the content of the sentence
S/the object that is also the object of Mary's claim/some entity.

Also epistemic factive verbs tend to resist substitution by an ordinary (i.e., non-special) description or quantifier, for example *know*, *real-*

ize, notice, or see. Thus, the following inference, to my ears, is hardly acceptable:

- (16) John knows that he lost the game.
 John knows the fact that he lost the game/knows some entity.

The clausal complement of those verbs, though, can be replaced by special quantifiers and pronouns and thus the verbs don't resist noun phrases for syntactic reasons:

- (17)a. John claimed something/that.
 b. John knows something/that

Possible explanations of such lack of substitutivity that might save the relational analysis don't seem to go very far.

First of all, a purely syntactic explanation is hardly available, since special quantifiers and pronouns behave just like ordinary noun phrases in all syntactic respects.

Another explanation might draw an ontological distinction between 'contents' on the one hand (denotations of *that*-clauses) and 'objects' on the other hand (denotations of noun phrases), a distinction that would recall the Fregean distinction between concepts and objects (cf. Frege 1892). On this view, only objects could be referred to by ordinary noun phrases, whereas contents by nature would elude any access by description or (ordinary) quantification, being tied to the semantic function of a predicate within a sentence.

There is a fundamental problem, though, for such an explanation. Once an entity of whatever sort is an argument of a relation, it loses its association with the semantic function of a particular syntactic category (such as a sentence) and thus should be 'accessible' by description or at least quantification. Certainly, a philosopher or linguist appears to be able to refer to a mere content, and since his descriptive or quantificational means are also part of the object language (or an extension of it), it is hard to see why such reference should fail when the content-referring term acts as a complement of the attitude verb.

A Fregean account in the case of clauses vs. noun phrases is less appealing anyway than in the case of predicates vs. noun phrases. This is because the Fregean distinction between saturated and unsaturated objects (which captures a difference in the semantic function of noun phrases and of predicates) cannot be carried over to a distinction among two kinds of propositions (which are always saturated).

One might also think of a type-theoretic explanation: noun phrases and sentences, being of different syntactic categories, are associated with different types (let's say, type *e* and type $\langle s, t \rangle$) and thus take their denotation

from different type-theoretic domains (let's say the domain D_e and the domain $D\langle s, t \rangle$). Special quantifiers would then be of the same type as sentences, and predicates would be specified as to the type of the arguments they take.

The problem with a type-theoretic account is that, depending on the conception of types, it either amounts to a syntactic redescription of the facts or else is a variant of the ontological account. In the first case, the distinction between the domain of individuals (of type e) and domains of other types (e.g., type $\langle s, t \rangle$) simply reflects the role of syntactic categories that take their denotations from those domains in the semantic composition of the sentence. But then nothing prevents an expression of type e , a referential noun phrase, from taking an object from D_e as its denotation that also happens to be a function in the domain $D\langle s, t \rangle$. Thus, predicates taking arguments of type e and those taking arguments of type $\langle s, t \rangle$ will be distinguished only by the fact that they take complements of different syntactic categories (or sets of categories) as complements. So the Substitution Problem would simply be traced to the fact that some predicates take only sentences or special noun phrases as arguments, but not ordinary noun phrases. Alternatively, if the type-theoretic distinction is to reflect an ontological distinction among different kinds of objects, then two sorts of propositions will have to be distinguished and the same problem arises as for the ontological account discussed above.

2.2. *The Objectivization Effect*

The second problem for the relational analysis is the following: in many cases a replacement of a *that*-clause by a nominal construction triggers a different reading of the predicate – and this in a way sufficiently systematic for it to be traced to the semantics of the constructions themselves.

The invalid inferences in (18) indicate that as soon as a clause *that S* is replaced by the construction *the proposition that S*, the content expressed by *S* comes to play a very different role in the meaning of the sentence: it has the same status an ordinary object would have that acts as the referent of a noun phrase, as in (19):

- (18)a. John expects that Mary will win.
John expects the proposition that Mary will win.
- b. John imagined that Mary was alive.
John imagined the proposition that Mary was alive.
- c. John remembers that Mary won.
John remembers the proposition that Mary won.

- (19)a. John expects Mary.
- b. John imagined Mary.
- c. John remembers Mary.

The conclusion of (18a) means that John expects an abstract object (a proposition) and the ones of (18b) and (18c) that John's imagination or memory is that of an abstract object. By contrast, the premises of (18) report John's expectation, imagination, or memory as being only about Mary.

The fact that S also displays the Objectivization Effect, its value often acting like an object, rather than a content, as in the following invalid inference:

- (20) John heard that Mary entered the room.
John heard the fact that Mary entered the room.

The conclusion of (20) could be true only in a metaphysical fantasy in which facts are concrete objects of perception.

The Objectivization Effect cannot simply be traced to the presence of a noun phrase (as opposed to a *that*-clause) as complement of the attitude verb. This is because the content-related reading is preserved when the *that*-clause is replaced by a special quantifier or pronoun:

- (21)a. John expects (imagined/observed/heard/recognized) something.
- b. John expects (imagined/observed/heard/recognized) that.

That-clauses and noun phrases of the sort *the proposition that S* thus display the following fundamental semantic distinction: the semantic value of a *that*-clause acts as a mere content of the attitude, whereas the semantic value of a nominal construction such as *the proposition that S* generally acts as an object the described propositional attitude is about or directed towards. Let me call the semantic shift that can take place when a *that*-clause is replaced by a nominal construction the *Objectivization Effect*:

- (22) *The Objectivization Effect*
Substitution of a *that*-clause by a (nonspecial) NP results in a reading the predicate has when taking ordinary objects as arguments, so that in the case of an attitudinal predicate, the complement specifies not the mere *content* of the attitude, but the *object* the attitude is about or *directed toward*.

The Objectivization Effect arises rather systematically with attitude verbs that accept referential complements. This indicates that there is a semantic difference among the constructions of nominal and sentential complementation that is part of the knowledge of language of competent speakers and thus to be accounted for by a semantic theory. In fact, the Objectivization Effect indicates that reporting the mere content of a propositional attitude is precisely what the sentential construction is for (and, moreover, that the primary means for reporting the mere content of a propositional attitude is the sentential construction):

- (23) *The semantic function of clausal complements of attitude verbs*
 The semantic function of a clausal complement of an attitude verb is to specify the content of the propositional attitude that is described.

But what does it mean for a *that*-clause to specify the mere content of an attitude, rather than an object the attitude is about or directed toward? I want to suggest that specifying the mere content means that the target of the attitude is not an object, but the connection among propositional constituents, in particular the relation between a property and its arguments. Take the inferences in (18). The propositional attitudes described in premise and conclusion certainly are the same; but their target is different. Intuitively, the difference between premise and conclusion in (18a) is that the expectation is fulfilled, according to the conclusion, by the presence of an object (a proposition), but according to the premise, by the holding of a property (the property of winning) of an object (Mary). In the conclusion of (18b), John's imagination consists in a mental representation of an object (a proposition), but in the premise of (18b) in the attribution of a property (being alive) to an object (Mary). According to the conclusion of (18c), what is reactivated in John's mind is the representation of an object (a proposition), but according to the premise it is the holding of a property (winning) of an object (Mary).

One can therefore say that attitudes expressed by verbs displaying the Objectivization Effect target the relation between predicate and argument on the content-related reading in just the way they target an object (or perhaps the presence of an object) on the object-related reading. That is, the target of such a propositional attitude in the clausal construction is the relation between the main predicate and its arguments, whereas in the nominal construction, it is the object the nominal complement refers to.

Since it is beyond question that referential noun phrases generally have the semantic function of providing an argument for the relation expressed by the predicate, and since it appears that the primary way of describing

an attitudinal state in terms of its content is the sentential construction, the Objectivization Effect reveals something about the nature of propositional attitudes itself – not just the way we happen to describe them. For if propositional attitudes were relations, then why can't we just as well use the construction designed to report relations? The Objectivization Effect strongly suggests that propositional attitudes are, at least primarily, not relations to propositions, but ways of combining propositional constituents – more precisely, ways of predicating properties of objects.

2.3. *The Semantic Behaviour of Special Quantifiers and Pronouns*

As mentioned earlier, special quantifiers have usually been taken as evidence for the relational analysis. Special quantifiers, given that they are not substitutional, range, it seems, precisely over the potential arguments of attitudinal relations – either propositions or, on the Modified Relational Analysis, a variety of proposition-like objects. However, a number of further linguistic facts about special quantifiers show that their semantics must be different from that of ordinary quantifiers. Special quantifiers and pronouns, I will argue, act as nominalizing expressions, inducing a domain of objects obtained both from a propositional content and the contribution of the embedding attitude verb.

First, let us look at some restrictions of special quantifiers, e.g., evaluative adjectives:

- (26)a. John said something nice (namely that *S*).
- b. John thought something very daring (namely that *S*).
- c. John imagined something exciting (namely that *S*).

Evaluative predicates as in (26) do not seem to be predicated of propositions (or one of the proposition-like objects the modified relational analysis would postulate), but rather of the kind of thing that a nominalization like *John's claim*, *John's thought*, or *John's imagination* refers to. Thus, *nice* in (26a) says that John's claim or remark that *S* is nice (or perhaps *the claim* or remark that *S*, which also happens to be made by John, see the discussion later). What *nice* in (26a) does not and cannot say is that the proposition that *S*, a semantic object, is nice (the latter could be nice even if what John said isn't). Thus, *nice* in (26a) is predicated not just of a content, but a content 'sustained' by the particular attitudinal expressed by the predicate. Similarly, *daring* in (26b) is not predicated of the proposition that *S*, but rather of John's thought that *S* (or perhaps the thought that *S*, which is shared also by John). Finally, what is said to be exciting in (26c) is not a proposition, a semantic object, but rather John's imagination that *S* (or

perhaps *the* imagination that *S*), that is, a content as imagined by John (or ‘as one can imagine it’).

Another kind of predicate indicative of the true semantics of special quantifiers is causal predicates:

(27) John said something that made Mary very upset.

What made Mary upset in (27), intuitively, is not a proposition, an abstract object, but whatever John said, i.e., John’s claim or remark. What *something* ranges over in (27) thus is not propositions, but the kinds of things nominalizations such as *John’s claim* stand for – that is, again, objects that include the attitudinal mode expressed by the verb.

Even though things like claims and beliefs are not mere contents, but somehow incorporate a propositional attitude, they share aboutness and truth-valuational properties with the corresponding *that*-clause and its propositional content. For this reason, objects of this kind are best considered *qua*-objects in the sense of Fine (1982a), namely propositional contents qua being believed or qua being claimed. Qua-objects consist of a base (the propositional content and the agent) and a gloss (the attitudinal mode): they inherit certain properties from their base and have only those evaluative properties that take the gloss into account. I will return to the nature of those objects in Section 3.4.

There is a second set of data about special NPs – more surprising, though somewhat less secure – that point in the same direction. These are free relative clause constructions such as:

(28) John believes what Mary believes, namely that it will rain.

On the traditional relational analysis, *what Mary believes* would stand for a proposition which is an argument of both the first and the second occurrence of *believes*. There is the following problem, however, for the view that *what Mary believes* stands for a proposition (or any of the proposition-like objects that the Modified Relational Analysis might postulate). With sufficiently different attitude verbs, speakers generally evaluate the construction in (28) as hardly acceptable or at least as a decidedly funny way of expressing the intended state of affairs. Thus, at least a significant num-

ber of speakers, at least at some stage, judge the following examples as unacceptable:⁸

- (29)a. #John wishes what Mary believes, namely that Bill will be elected president.
- b. #John requested what Mary believes, namely that Sue will study harder.
- c. #John noticed what Mary believes, namely that it is raining.
- d. #John said what Mary believes, namely that it is raining.

(29a)–(29d) are generally judged as unacceptable when taken as descriptions of two unrelated propositional attitudes (John’s and Mary’s), which just so happen to coincide in content – for example in (29a), John’s desire that that Bill will be elected president and Mary’s belief that Bill will be elected president. Irrelevant in the present context are other readings of such examples, for example the indirect question interpretation of (29d) on which it John said the following: ‘Mary believes that it is raining’. It is also important to distinguish the relevant reading from the one available in (30a) on which (30a) is equivalent to (30b):

- (30)a. John believes what Mary said.
- b. John believes Mary’s claim.

In (30a), *believe* occurs as a two-place relational predicate, expressing a relation between agents and claims or even propositions (*John believes the proposition that S*), just as in (30b).

Even setting such other readings aside, it must be admitted that there are speakers (often with standard philosophical training though (!)), who can’t find fault with the examples in (29). Over and over again, however, my experience with various speakers (philosophers, linguists, nonphilosophers as well as nonlinguists) has confirmed that the examples in (29) are degraded and clearly much worse than expected on the Relational Analysis. The fact that some speakers accept the data, however, and also the fact that some speakers accept the data at some stage (either initially or after some reflection) must also be taken into account and in fact should be considered part of the phenomenon itself and be explained as such.

Let me call the kind of object that a special quantifier or pronoun as complement of an attitude verb stands for the *attitudinal object* of the attitude verb. Then (29a) and (29b) indicate that bouletic and a doxastic attitude verb cannot share their attitudinal object; (29c) that a factive epistemic and a doxastic attitude verb cannot share their attitudinal object; and

(29d) that a verb of saying and a doxastic verb cannot share their attitudinal object.

The Modified Relational Analysis would not be of much help to account for data as in (29). The attitude verbs in (31) would, on the modified relational analysis, take the same proposition-like arguments (propositions for *believe* and *assert*, and facts for *remember* and *notice*), but they still can't share their propositional objects (on the relevant reading, for relevant speakers):

- (31)a. #John believes what Bill asserted, namely that *S*.
 b. #John remembered what Mary noticed (namely that Bill had shut the door).

In (32), moreover, attitude verbs that resist nominal constructions altogether, but are epistemic in nature, cannot share their attitudinal object (again for relevant speakers):

- (32)a. ??John saw what Mary knows, namely that it is raining.
 b. ??John saw what Mary heard, namely that the door was being opened.

What is interesting about the data in (29)–(32) is that it is perfectly clear what the sentences would mean if they were acceptable (which might be one of the reasons why some speakers (especially those with standard philosophical training) tend to judge them as acceptable).

Under what conditions can attitudinal objects be shared? Strict identity of the attitude verbs is not required, but rather only a shared perceptual, epistemic, or communicative 'mode' (with possibly differences in the strength of the attitude):

- (32)a. John has often suggested what Mary now claims, namely that Bill is a spy.
 b. John sometimes tended to believe what Mary is now convinced of, namely that Bill is a spy.
 c. John demanded what Mary was going to request, that the door be opened.

Thus, the data require a much finer distinction among different propositional objects than captured by the distinction among propositions, facts, and possibilities. For the relevant speakers (such as myself) special quantifiers and pronouns, in the context of an attitude verb, generally stand

for the kinds of objects nominalizations refer to which are derived from the relevant attitude verb, such as *the claim that S* or *the belief that S*. These objects that are not pure contents, but ‘contents qua being claimed’ or ‘contents qua being believed’.

But not all speakers accept the data above and many fluctuate in their judgment after some exposure. Acceptability moreover generally improves with adverbial modifiers and focusing:

- (34)a. John finally said what Mary has always believed.
- b. John said what Mary doubts, namely that the meeting would be fruitless.

An important part of any semantic analysis of special quantifiers is to explain this variation among available readings. I propose an account on which it will be traced to the attitudinal object being able to vary as to how much of the contribution of the attitude verb it incorporates. This is what I will call the *variability of attitudinal objects*.

But why then on this account are the examples in (34) acceptable? It appears that focus on the modifier or the predicates goes along with a more abstract attitudinal object being the topic of the sentence. In (34a), this attitudinal object is based on the attitude of acceptance (in the sense of Stalnaker 1984 on which acceptance is an attitude shared by a variety of different attitudes, including saying and believing). In (34b), the attitudinal object is based on the most general attitude of entertaining a content (which is shared by both saying and doubting). The rest of the content of the attitude verb (e.g., verbalizing or doxastically supporting or not supporting a content) will merely characterize, not constitute the attitudinal object.

To summarize, we have seen that special quantifiers and pronouns are not evidence for proposition-like objects acting as arguments of attitude verbs. Rather they act as nominalizing expressions, inducing reference to attitudinal objects obtained from both the content of the attitude verb (or part of it) and a sentential content.

3. ATTITUDE VERBS AS EXPRESSING MODES OF PREDICATION

3.1. *The Basic Idea*

We now have several adequacy conditions on a semantic analysis of attitude reports with clausal complements. Such an analysis will have to account for all of the following:

- [1]a. the Substitution Problem
- b. the Objectivization Effect

- [2]a. the nominalizing semantics of special quantifiers
- b. the variability of attitudinal objects.

Any theory that does not treat the *that*-clause complement of an attitude verb as providing an argument for the predicate would certainly account for the Substitution Problem, and the variety of theories that do so will be discussed in the Appendix. As regards the Objectivization Effect, it should account for the distinction between content- and object-related readings that correspond to the clausal and nominal constructions, in particular for the intuition that the verb targets the relation between predicate and argument in the clausal case in the way it may target the object in the nominal case. An account of clausal complements moreover, should not be separated from an account of special quantifiers. In fact, the semantics of special NPs in place of clausal complements can be seen as a reflection of the semantics of the clausal construction. The entities special NPs stand for combine the contribution of the attitude verb and the propositional content, which would correspond to a semantics of the clausal construction on which the contributions of attitude verb and of propositional content are not separated either. At the same time, the extent to which the content of the attitude verb helps constituting the attitudinal object varies, depending on the kind of attitude as well as contextual factors.

The way my analysis will meet those challenges is roughly this. If (35a) has the logical form in (35b), the Substitution Problem is accounted for because the verb and the *that*-clause are treated as having a syncategorematic meaning:

- (35)a. John believes that Mary is happy.
- b. $R(\text{John}, \langle H, T_1 \rangle, \text{Mary}, T_2)$

Generally, the attitude verb will specify an $(n + 2)$ -place predication relation, holding among an agent, an n -place relation, and n arguments. From that the domain of special NPs can be obtained as consisting of entities of the sort $f(R, \langle H, \text{Mary} \rangle, \text{John})$, which is to be understood as the relation R obtaining among John, happiness, and Mary. The variability of attitudinal objects, moreover, will be accounted for by allowing part of the content of the verb to be left out for the derivation of the attitudinal object, based on some contextually relevant decomposition of the verb's content into a more general attitudinal relation and a relation modifier. The option of leaving out part of the content of the verb for the derivation of attitudinal objects can be considered a general feature of the interpretation of linguistic material for the purpose of deriving objects, an option in fact familiar from the literature on events as derived objects.

This analysis of attitude reports recalls an account Russell once proposed. In fact, it can be viewed as a formal development of the Russellian view motivated by additional linguistic data, though not by Russell's original philosophical considerations.

3.2. *Russell's Account of Attitude Reports*

Russell (1912, 1918, and in particular the unfinished manuscript of 1913) argued that propositional attitudes are not binary relations between thinkers and propositions, but rather 'multiple relations', relating an agent to the constituents of propositional contents. In the case of atomic sentences, the propositional constituents are properties and their arguments. Thus, in *John believes that Mary is happy*, a three-place belief relation is said to obtain among John, the property of being happy, and Mary.⁹ In the case of *John believes that Bill loves Mary*, the belief relation is a four-place relation said to obtain among John, the loving relation, Bill, and Mary. Thus, there is no single belief relation, but several, depending on the form of the propositional content involved.¹⁰

Russell, of course, did not have in mind the linguistic data discussed above to motivate his account. His motivations were rather of a metaphysical nature. Russell had general reservations about representations as the intermediaries between an agent and the world – be they concepts, Meinongian objects, or propositions. The relation between an agent and the world, on Russell's view, is direct, not mediated, and propositional attitudes ultimately relate an agent to objects the agent is acquainted with (particulars or universals). In Russell's ontology, then, there is space only for facts, individuals, and properties, but not false propositions, which, unlike true propositions, cannot be construed as facts and are not needed in a full description of the world.¹¹

For Russell, instead of propositions, there are only three sorts of proposition-like objects: sentences (which Russell also sometimes calls 'propositions'), which in embedded position are 'incomplete symbols' (requiring an attitude verb for their completion), intentional acts or states (that is, multiple attitudinal relations relating a particular agent to propositional elements), and contents abstracted from intentional states (that is, those sequences consisting of a relation and its arguments for which there is an attitudinal relation relating them to an agent) (cf. Russell 1913, 116ff.).

Russell's account of attitude reports has been subject to criticism and generally been discarded (see Sainsbury 1979 for discussion). However, the account, as I will try to show below, can be worked out in much less problematic ways – using somewhat more sophisticated formal semantic means. The result moreover can be given a rather different philosophical

‘interpretation’ than the one Russell had in mind, namely within a general intentionalist view of content. Let me first turn to the more technical elaboration of the account.¹²

3.3. *A Formal Russellian Semantics for Attitude Reports*

Russell did not explicitly say that it is the meaning of the attitude verb itself that is a relation relating an agent to the various propositional elements. So understood, the view would certainly be problematic. First, since sentences may be of indefinitely many different logical forms, infinitely many belief predicates would have to be distinguished, which is at best implausible (cf. Sainsbury 1979). Moreover, the view is untenable in the face of cases like (36a) and (36b):

- (36)a. John knows what Mary believes.
- b. John believes everything Mary believes.

Since a speaker can utter (36a) without knowing what Mary believes (the logical form of her belief content), he would not know which verb *believe* were to be used. In (36b), Mary may believe various things differing in the number of propositional elements that make them up. In this case, there isn’t any one verb *believe* that could have been used.

One might alternatively take the attitude verb to denote a multigrade relation, a relation of variable adicity. Then, the verb would always have the same meaning and take the various elements given by the *that*-clause as arguments. However, taking the propositional elements specified by the *that*-clause to provide arguments for the predicate violates fundamental constraints on argumenthood in linguistic structure. Generally, it is assumed that there are syntactic restrictions on what constituents may have the semantic function of providing an argument for the predicate. For example, Chomsky (1981) requires for such a relation (of what is called ‘theta-role assignment’) a rather restrictive condition, amounting to the constituent being a sister constituent of the predicate. It is clear that such constraints do not hold for the relevant constituents of a *that*-clause that are supposed to provide arguments for the embedding verb. Another reason not to adopt the multigrade relations account is the variability of attitudinal objects, which, as we will see, can be explained if the same attitude verb is allowed to not only specify a relation R in a particular context, but also a combination mR of a relation modifier m and a more general attitudinal relation R . That is, the content of the attitude verb may be ‘decomposed’, in a variety of ways, in the meaning of the sentence.

Thus, rather than trying to find a single meaning, the semantics of attitude verbs is better treated in a syncategorematic fashion: what the attitude

verb does, in a particular context, is trigger particular ways of combining the propositional elements specified by an embedded *that*-clause. If, in the simplest case, the *that*-clause has a propositional content consisting of an n -place relation and n arguments, *believe* will specify an $(n + 2)$ -place doxastic predication relation $R_{(bel, n+2)}$, as in (37):

$$(37) \quad \text{For an } n\text{-place relation } R' \text{ and entities } d_1, \dots, d_n, \\ \llbracket \text{believes}, \langle R', d_1, \dots, d_n \rangle \rrbracket = \lambda x [R_{(bel, n+2)}(x, R', d_1, \dots, d_n)]$$

If the *that*-clause expresses a structured proposition $\langle Q, P \rangle$ consisting of a quantifier Q and a one-place predicate P , then *believe* triggers a three-place belief-predication relation $R_{(bel, 3, (2, 2), (3, 1))}$, whose second argument is a second-order property $((2, 2))$ and whose third argument is a first-order property $((3, 1))$:

$$(38) \quad \text{For a generalized quantifier } Q \text{ and a one-place property } P, \\ \llbracket \text{believes}, \langle Q, P \rangle \rrbracket = \lambda x [R_{(bel, 3, (2, 2), (3, 1))}(x, Q, P)]$$

It is straightforward to extend this account to sentences with more than one quantifier, using Generalized Quantifier Theory, where different generalized quantifiers may be assigned to subject and object NPs with a particular scope-order (see, for example, Keenan/Faltz 1985).

Russell, by the way, did not, in his written work, say much about how sentences other than atomic ones are to be accounted for. Russell (1918) is quite clear, however, about there being genuinely general propositions not reducible to singular propositions (or a conjunction or disjunction of them) and argues that general propositions involve propositional functions as one of their propositional elements. Therefore, it is safe to assume that his treatment would amount to one in which the belief relation relates a second-order property (the generalized quantifier) to a first-order property (e.g., the property of being happy).

Because of certain types of substitution problems, in particular with directly referential terms, objects as well as properties should be associated with modes of presentation or types of modes of presentation (cf. Crimmins and Perry 1989; Recanati 1993; Schiffer 1990). Instead of (37), we will then have (39):

$$(39) \quad \text{For an } n\text{-place relation } R, \text{ entities } d_1, \dots, d_n, \text{ and types of} \\ \text{modes of presentation } T', T_1, \dots, T_n, \\ \llbracket \text{believes}, \langle \langle R, T' \rangle, \langle d_1, T_1 \rangle, \dots, \langle d_n, T_n \rangle \rangle \rrbracket \\ = \lambda x [R_{(bel, 3)}(x, \langle R, T' \rangle, \langle d_1, T_1 \rangle, \dots, \langle d_n, T_n \rangle)]$$

Clearly this is a deviation from the spirit of Russell's original analysis (whose aim was to avoid representational objects, such as modes of presentations). Modes of presentation, it is generally agreed, are unavoidable; it is just propositions that the current account can dispense with.¹³

The semantics of independent sentences will be similar to that of embedded ones. Independent sentences only serve to provide propositional elements, and it is only in the presence of an illocutionary force indicator that they will have a complete meaning. Thus, a declarative sentence meant to be used as an assertion will specify a property of agents as in (40), for a content $\langle P, d \rangle$ and a three-place assertive predication relation $R_{(\text{ass},3)}$:

$$(40) \quad \lambda x[R_{(\text{ass},3)}(x, P, d)]$$

Thus, if an agent asserts *Mary is happy*, the agent will predicate, in the assertive mode, the property of being happy of Mary.

In the cases discussed so far, the propositional elements are simply the meanings of the elementary constituents, making up the 'structured proposition' expressed by a sentence. In fact, one can say that the Russellian account is viable just in case a structured propositions account of sentence meaning is.

The propositional elements of structured propositions do not have to be taken to be the meanings of elementary constituents; they may be meanings of larger constituents instead, so that only some of the syntactic structure is mirrored in the denotation of the *that*-clause. A plausible conception of structured proposition in fact is that the denotation of a sentence is allowed to exhibit various degrees of granularity, depending on the context (Cresswell 1985). For example, *that the chairman arrived* may in one context have the propositional content $\langle \llbracket \text{arrived} \rrbracket, \langle \llbracket \text{the} \rrbracket, \llbracket \text{chairman} \rrbracket \rangle \rangle$ and in another the content $\langle \llbracket \text{arrived} \rrbracket, a \rangle$, for *a* being the chairman. At a minimum, a structured proposition will consist of an *n*-place relation and *n* arguments. In more complex cases, the arguments themselves may be structured. Thus, structured propositions will be of the form $\langle R, X_1, \dots, X_n \rangle$, where X_i is either an argument of *R* or a structured complex whose evaluation will yield an argument of *R*.

Propositional contents with connectives pose some difficulties for the Russellian account. Russell (1913) seemed to have had an account of propositional attitudes with conditional and disjunctive content in mind. Unfortunately, however, the relevant chapters of that manuscript remain unwritten. Consider a belief report with the connective *or*:

$$(41) \quad \text{John believes that Mary won the race or Sue won it.}$$

Obviously, in order for (41) to be true, John need not predicate in the belief mode *won the race* of Mary or *won the race* of Sue (since he need not be sure about either one). No doxastic predication takes place in the evaluation of the disjuncts. Instead only *or* will be the target of the propositional attitude of belief. Suppose that *or* in (41) acts as a two-place predicate of things that have the content given by the disjuncts, i.e., a predicate that will be true of entities x and y just in case either x or y is true. Then the *or*-predicate will be the only one in the sentence to be predicated in the belief mode.

But what are the things *or* is predicated of? My proposal is that they are ‘propositions’ in the sense of being the entertaining of the propositional contents given by the disjuncts, i.e., where ‘entertaining’ is the most general attitudinal relation there is.^{14, 15} (41) should thus be analysed as in (42a), with R_{ent} being a suitable attitudinal relation of entertaining and *or* expressing a two-place relation taking attitudinal objects as arguments, as in (42b)

- (42)a. For structured propositions p and q ,
- $$\llbracket \text{believe}, \langle \llbracket \text{or} \rrbracket, p, q \rangle \rrbracket = \{x \mid R_{(\text{bel}, 4)}(x, \llbracket \text{or} \rrbracket, f(R_{\text{ent}}, p, x), f(R_{\text{ent}}, q, x))\}$$
- b. For attitudinal objects a and b ,
- $$\langle a, b \rangle \in \llbracket \text{or} \rrbracket \text{ iff } a \text{ is true or } b \text{ is true.}$$

For the notion of truth for attitudinal objects, see the next section. *And* presents similar problems as *or*:

- (43) John hopes that Mary is happy and Bill is satisfied.

Here predication in the hope-mode, on one reading, will affect only *and*, not the predicates *is happy* and *is satisfied*. The same account as given for *or* is of course available for *and*.

The difficulties with connectives show a more general point about the mode of predication account of attitude verbs. The particular propositional attitude will target only the highest predicate, operator, or connective in the sentences, specifying the mode in which it is to be predicated of its arguments. It does not provide a mode of predication for subordinate predicates, operators, or connectives, which will rather be predicated with the mode of ‘entertaining’.

An attitude verb, in the presence of a particular structured proposition, thus, does not always specify only a predication relation, but possibly also other operations for combining propositional elements. Of course, a single relation R' can still be defined on the basis of that, as in (44),

with R_{ent} and R'_{ent} being (appropriate) attitudinal relations of entertaining and a connective C now understood as a binary relation among attitudinal objects:

- (44) For a four-place predication relation R , an agent a , a connective C , structured propositions p and q , and relations R_{cons} and R'_{cons} appropriate for p and q , $R'(a, C, p, q)$ iff $R(a, C, f(R_{\text{cons}}, p, a), f(R'_{\text{cons}}, q, a))$.

Thus, an attitude verb in a particular context can always be taken to contribute to a relation relating an agent to all the propositional constituents. But for the definition of that relation more needs to be taken into account than just the specific propositional attitude that the verb describes.

3.4. *The Semantic Analysis of Special Quantifiers and Pronouns*

Special quantifiers, we have seen, do not range over propositions, but rather over the kinds of things nominalizations such as *the claim that S* or *the belief that S* stand for – that is, attitudinal objects that have both a truth-bearing content and include the attitudinal mode expressed by the verb. Attitudinal objects are entirely determined by the attitudinal mode, the agent, and the propositional constituents – though not in a mereological or set-theoretical way. For an attitudinal relation R , a structured proposition p , and an agent a , there will be an attitudinal object (and only one) dependent on R , p , and a just in case R holds among the components of p and a (which of course requires that R be appropriate for p). Thus, one can take attitudinal objects to be obtained from a partial function f applying to an attitudinal relation, a propositional content, and an agent:

- (45) For a propositional content $\langle R', X_1, \dots, X_n \rangle$, an agent a , and an attitudinal relation R appropriate for $\langle R', X_1, \dots, X_n \rangle$, the attitudinal object dependent on R , $\langle R', X_1, \dots, X_n \rangle$, and a , $f(R, \langle R', X_1, \dots, X_n \rangle, a)$, exists iff $R(a, R', X_1, \dots, X_n)$.

Moreover, two attitudinal objects are identical just in case the propositional constituents, agent and attitudinal mode from which they are derived are identical; that is, f must be a one-to-one function.

Attitudinal objects will inherit truth- and other content-related properties from their propositional content, as in (46) for the (context-relative) notion of truth:¹⁶

- (46) For a content $\langle R', X_1, \dots, X_n \rangle$, an agent a , and an attitudinal relation R , the attitudinal object $f(R, \langle R', X_1, \dots, X_n \rangle, a)$ is true in a context c iff $\langle X_1, \dots, X_n \rangle \in \llbracket R' \rrbracket^c$.

Sometimes, no actual agent, but only the ‘kind’ of agents will play a role in the individuation of an attitudinal object. This is what we have in *the claim that S* and *John believes what Mary believes*. It is also involved in one interpretation of *John’s claim that S*, for example if it is said to be identical to Mary’s assertion (*John’s* here specifies that the claim that S is (also) John’s). In this case, we have an attitudinal object of the sort $f(R, p, A)$ for A being the kind of agents.

Special quantifiers with attitude verbs range over attitudinal objects, but at the same time involve quantification over structured propositions. Thus, the logical analysis of (47a) will be as in (47b), where ‘ p ’ is a variable for structured propositions and $R_{claim,p}$ is the attitudinal relation specified by *claimed* and appropriate for p :

- (47)a. John claimed something interesting.
 b. $\forall x \exists p (x = f(R_{claim,p}, p, \text{John}) \ \& \ \text{John} \in \llbracket \text{claimed}, p \rrbracket \ \& \ x \in \llbracket \text{interesting} \rrbracket)$

(47b) is to be understood as ‘there is an attitudinal object x and a propositional content p so that x is obtained from the attitudinal mode of claiming, p , and John; the complex property of claiming p (relating the agent in the claim-mode to the propositional elements in p) holds of John; and the attitudinal object x is interesting’.

Compositionally, (47b) can be obtained if the morpheme *-thing* is first evaluated together with the verb *claimed*, as in (48), as a relation between agents and attitudinal objects:

- (48) $\llbracket \text{claimed}, \text{-thing} \rrbracket = \{\langle x, y \rangle \mid \exists p (x = f(R_{claim,p}, p, \text{John}) \ \& \ \text{John} \in \llbracket \text{claimed}, p \rrbracket)\}$

Here $R_{claim,p}$ is an attitudinal relation of claiming appropriate for the propositional content p . Suppose that *some* and *interesting* together are evaluated as a generalized quantifier $\llbracket \text{some interesting} \rrbracket$ (the property of properties that holds of a property P just in case the extension of P contains an element that is ‘interesting’). Then (47b) will be equivalent to:

- (49) $\{x \mid \langle \text{John}, x \rangle \in \llbracket \text{claim-thing} \rrbracket\} \in \llbracket \text{some interesting} \rrbracket$

The morpheme *-thing* on this account involves the same operation as the nominalization *claim*. The denotation of *John’s claim that S* will be either as in (50a) or as in (50b):

- (50)a. $\llbracket \text{John’s claim that S} \rrbracket = f(R_{believe,[S]}, \llbracket S \rrbracket, \text{John})$
 b. $\llbracket \text{John’s claim that S} \rrbracket = \iota x [x = f(R_{believe,[S]}, \llbracket S \rrbracket, A) \ \& \ x \in \llbracket \text{John’s} \rrbracket]$

I will assume that free relative clauses such as *what Mary claims* involve an ‘implicit’ nominalizer *-thing*, so that they can be evaluated as in (51a). (51b) will involve another implicit nominalizer with respect to the embedding verb *claimed*, as in the analysis in (51c):

- (51)a. $\llbracket \textit{what Mary claimed} \rrbracket = \iota x [\exists p (\text{Mary} \in \llbracket \textit{claimed}, p \rrbracket \ \& \ x = f(R_{\textit{claim}, p}, p, A))]$
 b. John claimed what Mary claimed.
 c. $\exists x \exists p (x = f(R_{\textit{claim}, p}, p, A) \ \& \ x = \llbracket \textit{what Mary claimed} \rrbracket \ \& \ \text{John} \in \llbracket \textit{claimed}, p \rrbracket)$

Finally, a special pronoun such as *that* can be treated as anaphoric to a proposition-like object x_i given by the context, again involving the same operation f :

- (52) $\llbracket \textit{John believes that}_i \rrbracket = \exists p (\text{John} \in \llbracket \textit{believes}, p \rrbracket \ \& \ x_i = f(R_{\textit{believes}, p}, p, A))$

The analysis so far contains a major simplification. It has not yet done justice to the variability of attitudinal objects discussed earlier. For this purpose, it must be allowed that not all of the content of an attitude verb provides the attitudinal relation, but rather part of it may play the role of a modifier of such a relation.

The fact that only part of the contribution of the predicate is taken into account can be seen as an instance of the way complex objects are introduced in general. It is a fact familiar already from *event nominalizations*, on a view on which events are derived from the content of a verb and its arguments (cf. Kim 1976 and Bennett 1988 among others). Thus, *John’s slow walk* may either refer to an event constituted by John’s walking only or by John’s walking and slowness, and John’s stroll may either be an event constituted by John’s walking or an event constituted by John’s walking as well as ‘casualness’ (cf. Kim 1976).

More generally, it appears, the introduction of complex objects into semantic structure is based on some division of the content of the predicate and possibly its arguments into [1] parts that will play an object-constitutive role and [2] parts that will play a object-characterizing role. The choice of such a division will depend, in part, of course, on contextual factors.

In the case of *attitudinal objects*, divisions of content into characterizing and constitutive parts play a role in three different cases: [1] attitude verbs differ in the degree of strength of the commitment to truth, but share their attitudinal object (e.g., *believe*, *doubt*, *disbelieve*, and *assume*). In this

case, the specification of the degree of commitment to truth is generally not part of the predication relation the verb contributes, but rather acts as a modifier of that relation. As a result, only the predication relation will individuate the attitudinal object. [2] Emphasis on the predicate or its modifiers allows attitude verbs with quite different contents to share their attitudinal object. In that case, the attitudinal object is based on some very general attitudinal relation, such as acceptance or the most general attitude of entertaining a propositional content. The modifier will in that case be considerably richer in content than in ordinary interpretations of special quantifiers. [3] The specification of the agent plays a merely characterizing role, so that the attitudinal object is individuated on the basis of the kind of agents A , rather than a particular agent.

Formally, before an attitudinal object can be derived, a function f_c determined by the context c will map the triple $\langle V, p, x \rangle$, consisting of the occurrence of the attitude verb V , a propositional content p , and an agent x onto a triple $\langle R, p, y \rangle$, where y is either the agent x or the kind of agents A and R is a relation so that for some relation modifier m , mR is one of the relations in the full content of V . Thus, f_c must fulfill the following condition:

- (53) For a context c , $f_c(V, p, x) = \langle R, p, y \rangle$, for some relation R so that for some relation modifier m , $[V, p] = \{x \mid mR(R', d_1, \dots, d_n, x)\}$ and $y = x$ or else $y = A$, where $p = \langle R', d_1, \dots, d_n \rangle$.

The syncategorematic meaning of the attitude verb and *-thing* should then be redefined relative to a context c as in (54):

- (54) $\llbracket V\text{-thing} \rrbracket^c = \lambda xy[\exists p(x \in \llbracket V, p \rrbracket^c \ \& \ y = f(f_c(V, p, x)))]$

(55a) can now be analysed as in (55b) or equivalently (55c), assuming acceptance (the relation R_{accept}) is the contextually relevant attitude shared by John's saying and Mary's believing:

- (55)a. John (finally) said what Mary has (always) believed.
 b. $\exists x \exists p(\text{John} \in \llbracket \text{said}, p \rrbracket \ \& \ f(f_c(\text{said}, p, \text{John})) = \iota x[\exists q(\text{Mary} \in \llbracket \text{believes}, q \rrbracket \ \& \ x = f(f_c(\text{believes}, q, \text{Mary}))])]$
 c. $\exists x \exists p(\text{John} \in \llbracket \text{said}, p \rrbracket \ \& \ f(R_{\text{accept}}, p, A) = \iota x[\exists q(\text{Mary} \in \llbracket \text{believes}, q \rrbracket \ \& \ x = f(R_{\text{accept}}, q, A))])]$

I do not claim that all attitude verbs need to express modes of predication. For emotive factives such as *be glad* or *be angry* a quasi-relational

analysis with the *that*-clause characterizing a fact seems more adequate – and would be supported by the equivalence between *that S* and *(about) the fact that S* found with emotive factives. Epistemic factives like *know*, *realize*, and *see*, however, do exhibit the Objectivization Effect and thus are not up for a quasi-relational analysis. Here, the predication relation that is expressed would incorporate the perceptual source and be subject to the general factive condition that the predicate be true of the arguments.¹⁷ Other attitude verbs, for example *agree*, *convince*, or *deny*, may involve more than one act of predicating the predicate of the embedded sentence.

4. THE INTENTIONALIST VIEW OF CONTENT

The formal Russellian semantic analysis that I have given accounts for some crucial semantic features of attitude reports: the Substitution Problem and the Objectivization Effect as well as the semantics of nominalizing quantifiers and the variability of attitudinal objects. Russell's philosophical reasons for his original account, though, were primarily to connect an agent directly to entities in the world, rather than relating him to a representation. Here I want to suggest a somewhat different way of making sense of propositional attitudes as relations among propositional constituents and agents. Propositional attitudes, I want to suggest, should be understood as modes of predication, in an intentionalist sense of predication. At least this is how the primary notion of propositional attitude should be understood. There may also be two-place attitudinal relations, as we have in the case of the two-place predicate *believe* in *John believes the proposition/the claim that S*, but these are secondary, derivative notions. Understanding propositional attitudes as modes of predication goes along with a view according to which truth-bearing content requires intentional agency and the primary bearers of truth values are attitudinal objects, not propositions in a Platonic or Fregean sense.

The relational account of attitude reports generally presupposes propositions in a Platonic or Fregean sense, namely as mind- and language-independent objects that have their truth conditions essentially. If there are such objects, then certainly the relational account of attitude reports and of propositional attitudes makes perfectly good sense, and it would be natural to take mental states to be constituted by a relation between an agent and a mind-independent proposition. But propositions in this sense have been subject to criticism, in favour of use-theoretic or intentionalist notions of content. The arguments are that there is no object associated with a sentence that can be separated from the sentence's use and no object

of a propositional attitude that can be separated from the intentionality of the agent.

Often the use-theoretic view of content has been motivated by the impossibility of individuating propositional constituents, by arguing, for example, that the meaning of individual words is not once and for all fixed, but varies with or rather is constituted by its various forms of use (Wittgenstein 1953; Travis 1991, 1997). A different motivation, more important in the current context, concerns the relation among propositional constituents and the capacity of a mind-independent content to be true or false. It is obvious that objects can represent an entity or refer to one only if they are intended to do so (unless they are causally related to their referent); they need intentional agency to be able to represent. This not only holds for symbols and the objects they stand for, but naturally carries over to propositions regarding their ability to be true or false. Once propositions are conceived as structured, it must in part be the relations among their components that will be responsible for truth or falsehood. But no mere configuration of elements (set-theoretically or otherwise defined) allows for reading off a truth value. Rather the formal relations among the elements will themselves have to be interpreted to yield a truth value (for example as application of one element (a property) to another (its argument)). An interpretation of the formal relation among propositional elements is not necessary anymore, though, if one takes the propositional elements to stand in an intentional attitudinal relation to each other as well as an agent, a relation inherently aiming at truth. Contents that can be true or false thus are on a par with symbols: in both cases, the intentional act that must go together with the symbol or the content can hit or miss its aim.¹⁸

A view on which the notions of truth, predication, and content are fundamentally intentional in nature has recently been expressed by Burge (1998), according to whom, as he puts it, the notions of truth, predication, and content stand in a relation of 'mutual constitutive dependence' with intentional agency (since intentional acts and states have themselves a propositional content that may be true or false). Truth is primarily the aim of intentional states or acts, and only secondarily, in a derived way, the semantic value of a sentence or proposition – namely in virtue of sentences being used in illocutionary acts and propositions being the contents of intentional states or acts. Contents or propositions thus are not abstract objects conceptually prior to intentional agency; rather it is concrete intentional acts, such as beliefs or claims, which are the primary bearers of truth values.

Given that the relation among propositional constituents must be an intentional one, it is natural to take propositional attitudes to be precisely such relations. What an attitude verb expresses is a mode of predication, in the intentional sense of predication, so that if John believes that Mary is happy, John predicates, in the belief mode, the property of being happy of Mary.

If predication is conceived as an intentional act aiming at truth, then given the diversity of propositional attitudes, different intentional predication relations will, at least to some extent, distinguish different attitudes. A basic predication relation is the one corresponding to belief, and it can be distinguished as such from the predication relation involved in imagination. Whereas the mode of predication constituting belief clearly aims at truth, the one constituting imagination combines concepts ‘as if’ aiming at truth, pretending the combination of concepts to be aiming at truth. Also belief and desire clearly constitute different modes of predication. Whereas belief aims at a representation of truth, desire aims at becoming the case that the predicate holds of the argument.

Not all of the content of an attitude verb, though, needs to always be understood as a mode of predication. Some of it may act, sometimes, as a modifier of the predication relation; another part may constitute a separate predication (as perhaps in the case of factive verbs). It is this complexity of the content of attitude verbs that can explain the variability of attitudinal objects. At a minimum, every propositional attitude will involve the attitude of entertaining as a way of relating propositional elements to each other. One and the same attitude may then be analysed in different ways, ranging from the entire content of the verb constituting the predication relation to only the relation of entertaining constituting it, with the rest acting as a modification of that relation. However, the primary way of understanding an attitude verb, it seems, is to take its entire content to constitute the predication relation, leading to attitudinal objects that are maximally specific as to the propositional attitude expressed by the verb. Only with greater efforts of abstraction and analysis will the content of an attitude verb lead to a more general attitudinal object. The most general attitudinal object is one whose attitudinal component and whose agent is so unspecific that it will come close to the traditional notion of a proposition. The intentionalist view of content in fact does not have to give up the notion of a proposition entirely, but can reconstruct it as follows: propositions are those attitudinal objects that are constituted by the intentional predication relation of entertaining R_{ent} , a propositional content (formally, a structured proposition), and the kind of agents. Thus, the (categorematic) meaning

of the noun *proposition* would be as in (56a) and the syncategorematic meaning of the nominal *proposition that S* as in (56b):

- (56)a. $\llbracket \textit{proposition} \rrbracket = \{x \mid \exists S \in \text{Engl}(S) (x = f(R_{\text{ent},[S]}, \llbracket S \rrbracket, A))\}$
 b. $\llbracket \textit{the proposition that S} \rrbracket = f(R_{\text{ent},[S]}, \llbracket S \rrbracket, A)$

The intentionalist view of content, of course, also carries over to independent sentences. Like embedded sentences, independent sentences do not have some object, a proposition, as their meaning. Rather they serve to provide the material, the propositional elements in a particular configuration, to act in an intentional truth-directed act, such as an act of assertion.

5. CONCLUSIONS

That-clauses provide the primary way of expressing propositional attitudes, and I have argued that despite first appearances, attitude reports with *that*-clauses require a nonrelational analysis. There is another, secondary way, of course, of expressing propositional attitudes, and that is by using noun phrases such as *the proposition that S*, *the fact that S*, or *the possibility that S* in place of a *that*-clause. Only in this case does the attitude verb express a relation between agents and proposition-like objects, in tune with a relational analysis.

I took the fact that the semantics of attitude reports is not primarily relational in nature to reveal something fundamental about the nature of propositional attitudes themselves, rather than just the way we happen to describe them. There are independent philosophical considerations – concerning the notion of truth, predication, and propositional content – that give plausibility to the view that propositional attitudes should primarily be understood not as relations, but as ways of combining propositional elements, as modes of predication. Propositions will play a role then only as the shared contents of a class of intentional states or acts, or as objects constituted by the most general type of intentional predication.

Propositions have long had a controversial reputation. Eliminating them in the way of the nonrelational analysis does not quite eliminate the basis for the doubts about propositions, though. All the non-relational analysis does is say that it is not propositions themselves that play a role as objects in the semantic structure of attitude reports, but propositional constituents. The nature and identity of those propositional constituents, though, give rise to many of the questions that propositions did.¹⁹

APPENDIX: OTHER NON-RELATIONAL ANALYSES OF ATTITUDE
REPORTS OR PROPOSITIONAL ATTITUDES

As an alternative to the traditional relational analysis of attitude reports, I have proposed a Russell-inspired ‘multiple relations’ analysis. There are a number of other nonrelational analyses that have been suggested in the literature or that one could think of. The question that arises is, of course, how these analyses will be able to deal with the Substitution Problem and the Objectivization Effect as well as the nominalizing semantics of special quantifiers and the variability of attitudinal objects. The other issue is how plausible such analyses are from a linguistic point of view as well as a conceptual one (regarding the nature of propositional attitudes).

Among the alternative nonrelational analyses one must distinguish between those that concern the nature of propositional attitudes themselves and those that concern the semantics of propositional attitudes. There are views on which the semantics of attitude reports is non-relational, but propositional attitudes are fundamentally relations, as well as views on which propositional attitudes are non-relational in nature, but the semantics of attitude reports is relational.

Actual and possible non-relational views of attitude reports can best be classified by how they assimilate sentences embedded under an attitude verb to a syntactic category of a logical language – to a category, of course, which is not that of a term. Comparing the semantic function of a *that*-clause to that of other categories of natural language by contrast does not necessarily help, since it is generally not so clear, indeed often controversial, what the semantic function of expressions of other natural language categories is. Expressions of a logical language, by contrast, have a transparent semantics.

Given the categories of logical languages, there are three possibilities for *that*-clauses embedded under attitude verbs. First, *that*-clauses may have the status of predicate functors, that is, modifiers of the attitude verb. Second, the attitude verb may have the status of an operator with respect to the *that*-clause. Third, the embedded sentence may act as a predicate of an implicit argument of the verb. Besides these three non-relational views concerning the semantics of attitude reports, there is a fourth view, which originally concerned only the nature of propositional attitudes, namely the measurement account of propositional attitudes. A measurement account of the semantics of attitude reports, however, also has some interesting additional linguistic plausibility.

1. *That-clauses as Predicate Functors*

If embedded sentences act as predicate functors they will map the property expressed by the predicate onto another property, as in (1b), where *claim* is treated as a one-place predicate:

- (1)a. John claimed that *S*.
 b. (that *S*)(claim(*j*))

This in fact corresponds to the adverbial theory of perception, as well as mental content (Tye 1984, 1989).

It is not hard to see how on this account the Substitution Problem and the Objectivization Effect could be dealt with.

The account faces a greater conceptual problem, though, with the nature of propositional attitudes. It is hard to see how *claim* in itself can denote a property and thus provide the input of a function denoted by *that S*. Claiming inherently requires a content.

Another problem with the account is the use of proforms. Typical predicate functors are adverbial modifiers (at least on a non-Davidsonian view, cf. Section 3). But adverbial modifiers are generally replaced by proforms such as *how* and combinations with *way* (*that way*, *the same way*) (also a nominalizing morpheme), not by *what* or combinations with *thing*. This, at least, indicates a fundamental difference between the function of *that*-clauses and what more plausibly are true predicate functors.

2. *Attitude Verbs as Operators*

Another non-relational analysis is one on which attitude verbs have the status of an operator with respect to the embedded sentences. Such an *operator analysis* of attitude reports has been argued for by Prior (1971), who, however, did not spell out the meaning of an attitude verb as an operator. Hintikka (1962) gave an analysis of *believe* and *know* as operators for semantic reasons, treating those verbs as modal operators that quantify over doxastically or epistemically possible worlds.

Prior argues that the operator analysis explains the Substitution Problem because *that*-clauses then do not *refer* to propositions – they rather, like independent sentences, *express* them. The Objectivization Effect would be accounted for by assuming that the primary means for reporting a mere content is to express that content (using a sentence embedded under an operator), not to refer to it (using a singular term that is an argument of a predicate).

The main concern with the operator analysis is how to understand the semantics of attitude verbs when acting as operators. If it just means that

the attitude verb expresses a relation taking a proposition as argument that is not referred to, but ‘expressed’, it is hard to see how the account does not face similar problems as were discussed in relation to the type-theoretic account. What an attitude report would describe is a state of affairs consisting of a relation holding among two arguments, and whether one argument has been delivered in one way or another should not make a difference as to what is being described. Thus, substitution should be possible (unless of course an ontological distinction is made among two different kinds of propositions).

If on the operator analysis, the verb is not taken to express a relation, but acts as a context-changing operator, quantifying over the elements in a context that constitutes a more global intentional state of the described agent, then other serious problems arise. Not only are there the familiar problems of logical omniscience and hyperintensionality, if the context is a set of possible worlds; there is also a conceptual problem. If a set of worlds is taken to constitute a belief state, then a relational notion of belief has to be used to define that set. But this means that the semantics of attitude reports with *that*-clauses presupposes a relational concept of belief that would not be what is expressed by the attitude verb itself. Hardly an acceptable consequence.

3. *That-clauses as Predicates of an Implicit Argument*

Another option is that *that*-clauses act as predicates of an implicit argument of the verb. One version of such a view would be that the implicit argument is the ‘true object’ of the attitude, an object distinct from the content of the *that*-clause – for example, on the modified relational analysis, the relevant proposition-like object. Thus, (2a) would be analysed as in (2b), quantifying over facts, as characterized by the *that*-clause.²⁰

- (2)a. John remembered that it is late.
 b. $\exists x((\text{John}, x) \in \llbracket \text{remember} \rrbracket \ \& \ x \in \llbracket \text{that it is late} \rrbracket)$

This account could be developed in such a way that the *that*-clause does not just determine the truth conditional content of the propositional object, but also, in the particular situation of utterance, conveys conditions of form and modes of presentation which will yield a more fine-grained notion of content.

Also Davidson’s (1968) analysis of *that*-clauses embedded under *say* can be subsumed under the implicit argument account. (Though on Davidson’s account, there isn’t really an implicit argument. Rather the proper object of the attitude is what is referred to by the complementizer *that*,

which is linguistically quite implausible). On that analysis the *that*-clause serves to characterize the object of the attitude in virtue of being uttered like an independent sentence, used, though, only to reveal the content of the object of the attitude.

One problem with the implicit argument account is that the *that*-clause just does not seem to behave like a predicate of an implicit argument. Predicates of implicit event arguments (on the Davidsonian view) go along with the proforms *how* and combinations with *way*, not with *what* and combinations with *-thing*. An even more serious problem with the account is this. If the predicate always expresses a relation between agents and true objects of the attitude, then this should be the same relation as would be expressed in the presence of a referential noun phrase, which should be able to refer to the implicit argument as well. But then the problems of substitution and objectivization can't be explained anymore.

Another variant of the account takes a more global attitudinal state to be the implicit argument, making what on the operator account is a belief context an implicit argument of the verb *believe*. Clearly, the *that*-clause should not just express a truth conditional property, but, depending on the context, also include properties of form and modes of presentation. Then (2a) would plausibly be analysed as in (3), stating that there is an event of remembering on the part of John whose content (by the function *c*) and, in part, form (by the function *f*) is given by *S*:

$$(3) \quad \exists e(\text{remember}(\text{John}, e) \ \& \ c(\text{that } S)(e) \ \& \ f(\text{that } S)(e))$$

One advantage of this analysis over the operator account is that it does not require an additional belief concept to define a context, but relates the belief state to the attitude verb directly. But still, the notion of belief plays an individuating role for the event argument. For there to be a belief state, some concept of belief must involve the relevant agent with some propositional content.²¹

In addition to the problems mentioned, all three options for an alternative semantic function of clausal complement of attitude verbs face obvious difficulties with the semantics of special quantifiers – in particular since the option of treating them as substitutional has been disqualified.²²

4. *That*-clauses as Measure Phrases

A number of philosophers have proposed that propositional attitudes should be understood in measure-theoretic terms, a view that goes along with a functional account of attitudinal states. The measurement account takes propositional attitudes to specify relations between an attitudinal state or act and a proposition or sentence, where, crucially, the proposition

or sentence only serves to represent certain properties of the attitudinal states, such as their entailment relations with respect to other states and their truth-related and aboutness properties. Technically, this means that attitude verbs specify a measure function mapping attitudinal states or acts to sentences or propositions, while preserving the relevant semantic properties and relations; that is, they specify homomorphisms between an empirical system (attitudinal states and certain of their properties and relations) and a representation system (propositions or sentences and their semantic properties and relations). On this view, propositional attitudes would not be genuine relations (which can be established on the basis of empirical properties of objects), but relations that involve a stipulation as to the choice of the ‘representation system’, a system which only serves to represent certain empirical properties of the measured entity.

The literature on the measurement account has concerned itself primarily with the nature of propositional attitudes and not with the semantics of attitude reports. However, it is also of interest to take the measurement account seriously from a linguistic point of view.

It has long been noted that measure phrases such as *200 pounds* in *John weighs 200 pounds* do not act as referential arguments. They do not allow for passivization and, like adjuncts, can’t be extracted from ‘weak islands’, e.g., *that*-clauses in the scope of negation. Thus, the contrast between the ambiguous (4a) and the unambiguous (4b) corresponds to the contrast between (5a) and (5b) (which can only be understood as a question about an object, not a measurement) (cf. Rizzi 1990):

- (4)a. It is for this reason that I believe that he was fired *t*.
- b. It is for this reason that I don’t believe that he was fired *t*.

- (5)a. What do you believe he weighed *t* (possible answer: 100 kilo)
- b. What don’t you believe he weighed *t* (impossible answer: 100 kilo)

Measure phrases also exhibit the Substitution Problem, while being replaceable by special quantifiers and pronouns:

- (6)a. #John weighed the same number as Mary.
- b. John weighed the same thing as Mary.

If attitude verbs indeed express measurement, then *that*-clause complements should have the status of measure phrases, and substitution failure should not be a surprise. A semantic analysis should accordingly not treat

measure phrases as providing an argument for a relation expressed by the verb.

There may even be some way of accounting for the nominalizing semantics of special quantifiers in place of *that*-clauses and for the variability of attitudinal objects. Thus, (7a) seems unacceptable even if the numbers representing John's weight and Mary's height are the same. Rather the addition of something like 'in kilo' and 'in centimeters' as in (7b) is required.

- (7)a. #John's weight is Mary's height.
 b. John's weight in kilo is Mary's height in centimeter.

Thus, the measurement account might provide an interesting alternative way of explaining some of the relevant data, while being based on entirely different philosophical assumptions about propositional attitudes and mental states than the mode of predication account.

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NOTES

¹ The relational analysis is also meant to apply to infinitival clauses such as *to leave* in *John wants to leave*. Infinitival clauses are often taken to stand for properties rather than propositions. But whatever infinitival clauses may stand for, the Relational Analysis is just as problematic when applied to infinitival clauses as it is for *that*-clauses, and the same alternative analysis would account for infinitival clauses in just the same way.

² On Thomason's (1972) account, propositions taken as primitives are the basis for constructing properties (as functions from individuals to propositions). On Bealer's (1982) account, primitive propositions are algebraically related to properties and their arguments as well as to other propositions.

³ There are also variants of the relational analysis on which attitude verbs take natural language sentences or sentences of a language of thought as arguments. What follows more or less holds for these views as well, though I will restrict myself to the view on which *that*-clauses stand for propositions.

⁴ Note that these intuitions hold with whatever special meaning the speaker might have in mind when using the word *proposition*. They hold when *proposition* is used in what seems

to be the colloquial sense, describing a content that has been maintained by someone to be true; and they hold when *proposition* is used in a technical philosopher's or semanticist's sense, referring to whatever the semantic content of a *that*-clause is or is taken to be.

⁵ One might suggest that the reason why *the proposition that S* is sometimes unacceptable is that the occurrence of *proposition* influences the way in which the proposition referred to by *S* is presented and that certain predicates are sensitive not only to the proposition itself, but also its presentation. This would be a case familiar from verbs such as *like*, whose sensitivity to relevant respects of an object can be made explicit by the *as*-construction:

- (1) John likes Mary as a woman, but not as a teacher.

The problem is that it is unclear why this kind of presentation could not be implicitly present in the case of clausal complements, without the construction *the proposition that S*. For this is possible with NP complements of *like*, since (1) can be intended to mean just what (2) means:

- (2) John likes Mary.

⁶ *Possibility in the possibility that it might rain* seems to just be an indicator that the propositional content contains a modal of possibility (*might*). However, as we have seen, possibilities are not propositions. More plausibly, *might in the possibility that it might rain* will not contribute part of a proposition, but rather emphasize the modal aspect that makes a possibility different from a proposition.

⁷ For a the ontological distinction between facts and true propositions, see, for example, Vendler (1972), Fine (1982), and Asher (1993). That the distinction is an ontological one is clear from the fact that predicates such as *believe* which accept *the proposition that S* also accept *the true proposition that S*, but generally not *the fact that S*:

- (1)a. John believes the true proposition that *S*.
b. #John believes the fact that *S*.

A distinction between facts and true propositions is required also because predicates such as *be impressed by* which are able to apply to both *the fact that S* and *the proposition that S* generally say rather different things in the two cases:

- (2)a. John is impressed by the fact that Mary loves Bill.
b. John is impressed by the true proposition that Mary loves Bill.

When applying to *the fact that S*, *is impressed by* says something not about a proposition presupposed to be true, but of something like 'the truth of a proposition', that is, a fact. By contrast, when applying to *the proposition that S* (in a somewhat unnatural, but what feels like fully rule-governed use of language), *is impressed by* says something about a propositions as such (e.g., as a philosophers' or semanticists' construction).

⁸ The observations are not limited to the free relative clause construction. Other constructions with special quantifiers or pronouns expressing the sharing of attitudinal objects make the same point:

- (1)a. #John wants something that Mary believes, namely that *S*.
- c. #John saw something that Mary knows, namely that it is raining.
- d. #John saw something that Bill just learned, namely that it is raining.
- (2)a. ??There is something John believes and Mary remembered, namely that it will rain.
- b. #There is something that John saw and Mary knows, namely that it is raining.

⁹ Russell (1913) actually considered it necessary to include an additional element in the multiple belief relation which provides the form of the propositional part, specifying the number of arguments the relation expressed by the embedded verb takes and thus ensuring that the objects are understood as filling in the relevant argument positions in that relation. I could not quite see the necessity of this addition, though.

¹⁰ Russell in (Russell 1918) criticized his (Russell 1912) view on which *believe* would take *arrived* as an argument in the same way as *arrived* takes *Mary* as an argument in *Mary arrived*. Russell in (1913, 1918) left it open in what way exactly *believe* involves the propositional constituents.

¹¹ Russell sometimes also appeals to mere intuition to motivate his account of attitude reports: 'His [Meinong's] view is that there is an entity, namely the "proposition" . . . , to which we may have the dual relation of assumption or the dual relation of belief. Such a view is not, I think, strictly refutable, and until I had discovered the theory of incomplete symbols, I was myself willing to accept it, since it seemed unavoidable. Now, however, it appears to me to result from a certain logical naïvité, which compels us, from poverty of available hypotheses, to do violence to instincts which deserve respect' (Russell 1913, Part II, Chap. I, p. 108). And 'To me . . . it seems obvious, as a matter of inspection, that belief is a multiple relation, not a dual relation, so that belief does not involve a single object called a "proposition"' (Russell 1913, Part I, Chap. V, p. 153).

¹² There are other analyses in the literature on which attitude verbs do not take propositions as arguments. On Lewis (1979)'s view, attitude verbs with a *de se* reading of the pronoun take properties as arguments, rather than propositions, so that *believe* would express self-ascription of a property (see also Chierchia 1982). For *de re* belief, the verb *believe* has been taken to not express a dyadic relation between agents and propositions, but a triadic one that holds among agents, objects and properties (cf. Quine 1960). But the motivation for this was simply to distinguish *de re* belief contents from *de dicto* contents. With structured propositions, the dyadic and triadic account of *believe*, for the purpose of construing *de re* contents, amount to the same (cf. Schiffer 1978, 1987).

¹³ One might also pursue the view that the relata of the attitudinal relation are in fact just modes of presentation or concepts, rather than objects referred to (or even properties expressed by predicates). An attitudinal state would then consist in a number of concepts standing in some attitudinal relation to each other (as well as to the agent). Direct reference (as a semantic phenomenon) would be taken care of by existentially quantifying over modes of presentation that stand for the same objects or the same properties. As Schiffer (1978) argues, this is a plausible view of the relation between *that*-clauses and mental content that does not require objects themselves to be part of mental contents.

Note, however, that for the individuation of attitudinal objects it is not the actual modes of presentation that matter, but only the objects themselves. This can be seen from (1), where John and his son will certainly have different modes of presentation of the numbers five and ten (cf. Schiffer 1990):

- (1) John believes what his five-year old son believes, namely that five plus five is ten.

¹⁴ The construal of *or* as a predicate of two propositional objects might be seen as leading to the same problems as the construal of attitude verbs as relational. Certainly, *John believes the consideration that S or the consideration that S'* is nonsense. But in the case of *or*, problems of substitution are avoided straightforwardly. *Or* need not be assigned a relation between two proposition-like objects as its lexical meaning, but can be treated as such syncategorematically: in a particular syntactic context, the occurrence of *or* will determine a relation between attitudinal objects, and this relation will be predicated of two attitudinal objects specified by the two embedded sentences in their syntactic context.

¹⁵ Russell (1913) calls this attitude 'understanding'.

¹⁶ Note that attitudinal objects may be true relative to a context (a time or world) regardless of the circumstances of the attitudinal relation holding among the propositional constituents. For example John's claim that gold is expensive (which he made today) was true already a hundred years ago.

¹⁷ Russell (1913), though, took epistemic verbs of perception to express relations taking facts as arguments – as did Vendler (1972).

¹⁸ This also conforms with Dummett's (1978) view according to which truth values are not considered objects assigned to propositions, but rather the outcome of successful intentional acts or states such as successful assertions or beliefs. As a consequence, on Dummett's view, conditions on truth should go along with conditions on assertion, namely verification conditions.

¹⁹ The present account of attitude reports without using propositions, for example, does not solve the mode of presentation problem of Schiffer (1987). But it makes clear that the mode of presentation problem is not one of compositionality. The impossibility of identifying modes of presentations (or types of them) does not show any impossibility of determining the semantic value of *that*-clauses in a compositional way. The mode of presentation problem is, if anything, not a problem about propositions, but about the propositional elements that enter the attitudinal predication relation.

²⁰ This also is the analysis Bach (1997) seems to be proposing as a solution to the Substitution Problem. On his view, all the clausal complement does is state a necessary condition on the truth of the implicit argument (the object of the attitude). On his account, the actual object of the attitude may include modes of presentation not conveyed by the meaning of the *that*-clause (which gives only the truth conditions of the propositional object). Bach takes the possibility of additional contextual elements playing a role in the content of an attitude report to show that *that*-clauses do not stand for the true object of the attitude. I could not see, however, how his proposed semantics of attitude reports provides for contextual elements playing a role in the overall truth conditions of attitude reports.

²¹ A further way of developing the account would be by associating clausal complements of different types of predicates with different ways of characterizing the content of the belief state. In this way different kinds of propositional attitude verbs, for example, *disbelief*, *wonder* and *want*, could apply to one and the same event argument. If the content of the

belief state is a set of worlds, then *disbelief* requires that the clausal complement be false in all alternatives, *wonder* that it be true in some and false in other alternatives, and *want* that those alternatives in which the clausal complement is true be preferred over those that minimally differ from them, but in which the clausal complement is false (cf. Stalnaker 1984; Heim 1992). This has been taken to be a way of deriving presuppositional, anaphoric, and inferential properties of different attitude verbs (cf. Heim 1992; Asher 1987). The problem with such an account, however, is that it would involve a commitment to a lexical analysis of different attitude verbs in terms of belief that is rather problematic (that is, an analysis of attitude verbs that amounts to their lexical decomposition in sentence meaning). Besides that, the existing developments of the view are based on a problematic commitment to a possible-worlds construal of belief states.

²² This option, though, was pursued by Prior (1971).

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