

Chapter 1

A New Approach to the Semantics of Attitude Reports and Modal Sentences

Version August 25, 2023

1. The ontology of attitudinal and modal objects in the context of descriptive metaphysics

This book develops a novel semantics of attitude reports and modal sentences based on an ontology of what I call ‘attitudinal’ and ‘modal objects’. Attitudinal objects, intuitively, are the sorts of things we refer to as claims, judgments, beliefs, assumptions, hopes, requests, decisions, desires, intentions, ideas, and hypothesis. Modal objects are entities like obligations, permissions, laws, rules, offers, invitations, abilities, strategies, options, dispositions, and essences. Attitudinal and modal objects are sharply distinguished from the sorts of entities that play a central role in standard semantic analyses of attitude reports and modal sentences, namely propositions (or sets of worlds) on the one hand and events (including actions and states) on the other hand.

There is another type of object that belongs to the same category as attitudinal and modal objects, namely what I call ‘intensional objects’, entities like searches, debts, and purchases, entities, which generally correspond to intensional transitive verbs. I will call the more general category that comprises the three types of entities, attitudinal, modal, and intensional objects, the category of ‘satisfiable objects’, or ‘satisfiables’ for short. That is because the main characteristic of those objects is that of having satisfaction conditions (such as conditions of truth, fulfilment, or realization).

The project of this book is undertaken within a particular methodology, namely that of descriptive metaphysics. The point of departure is to make use of ontological categories that are reflected in our general intuitions and in natural language in particular, while setting aside philosophical or other preconceptions of what categories there are. Specifically, the ontology used in the semantic analysis of attitude reports and modal sentences will first of all match an ontology that is implicit in natural language itself, rather than being an ontology adopted primarily through philosophical consideration of what there is. The book pursues the view

that ontological intuitions anchored in natural language help us to understand key notions in the metaphysics of the mind and philosophy of language.

The standard view of attitude reports takes the technical notion of a proposition to be the central notion, without concern as to whether there are referential terms that describe propositions in the core of natural language, that is, the non-technical part of natural language (which excludes the term *proposition* itself). The absence of a noun for propositions in the core of natural language (as opposed to terms for attitudinal objects) has been noted already by Bolzano (1837). Bolzano, when trying to find terms for propositions, says: ‘No other words of German come to mind that are suited for this purpose than *sentence*, *judgment*, *statement*, and *assertion*. They all have the defect that they carry with them the secondary concept of something that became and that became in virtue of a thinking being ... When understanding the words *a judgment*, *a statement*, *an assertion* we think certainly of nothing else but something that has been produced by judging, stating, and asserting’ (Bolzano 1837, I, 81-82, translation by Mark Textor).¹ By contrast, the present approach is based on an ontological category of attitudinal and modal objects, or more generally satisfiables, that is extremely well-reflected in the core of natural language.² But not only do we generally have good intuitions about satisfiable objects reflected in language. We also have strong intuitions about some of them that are fairly independent of language, for example hypotheses, ideas, abilities, and dispositions, as well as specific kinds of artifacts like laws (which are modal objects) and reports (which are attitudinal objects of a more complex sort).

Attitudinal objects play an important role in our mental life and in communication, as concrete bearers of content, that is, as bearers of satisfaction conditions. We communicate by making assertions as well as hearing and understanding claims, and our mental life consists, in part, in having thoughts, remembering ideas, adopting beliefs, forming intentions, making decisions, making plans, remembering decisions, revising decisions, etc. Attitudinal objects are mind-dependent particulars that come with a content. At the same time, they display features of concreteness: they generally have a limited lifespan; they enter causal relations, and they can act as objects of perception.

¹ See Moltmann (2022a) for the core-periphery distinction in natural language ontology, the discipline whose subject matter is the ontology implicit in natural language.

² As the citation makes clear, Bolzano takes judgments, statements, and assertions to be products of acts making use of a distinction between actions and their non-enduring products later adopted by Twardowski (1911) (see below and Chapter 2, Sect. 4.4.).

Modal objects also come with a content (that is, satisfaction conditions), and they may display some features of concreteness as well, such as having a limited lifespan and triggering memories and fears. Modal objects sometimes bear a close connection to particular attitudinal objects. Someone makes a promise and hence is under an obligation to fulfill it; someone makes an assertion and puts herself under a commitment to maintaining its content. Modal objects play obvious roles in our social life, as laws, obligations, commitments, permissions, and options. Modal objects also play a role in the natural world as abilities, dispositions, and essences.

Satisfiable objects do not just form a list of various sorts of entities; rather they share characteristic properties that jointly distinguish them from other, related types of entities, in particular propositions and events (including actions and states). Satisfiables come with characteristic content-related properties: having satisfaction conditions, having a part structure strictly based on partial content, and entering similarity relations based on shared content. Moreover, satisfiables (generally) come with properties of concreteness that still relate to their content. Thus they enter not just relations of causation, but relations of content-based causation, content-based perception, and content-based memory, and they are generally evaluated based on their content and not just their potential physical aspects.

Satisfiable objects have not generally been recognized as an ontological category in philosophy or linguistics. Instead the categories of propositions and events (actions and states) are generally taken for granted in metaphysics, philosophy of mind, and the philosophy of language when theorizing about propositional attitudes. But satisfiables play an important role in our mental life and in social ontology. They are extremely well-reflected in natural language and thus our linguistically manifest intuitions. But, as already mentioned, we also have robust intuitions about at least some such objects that do not strictly depend on expressions in a particular language.

Attitudinal objects such as claims, judgments, and beliefs share with propositions their status of truth bearers. But unlike propositions attitudinal objects are mind-dependent concrete entities, rather than abstract entities in a ‘third realm’ (Frege 1922).³ Satisfiable objects, at first sight, look like events (as a category that includes acts and states). However, satisfiables are in fact sharply distinguished from events ontologically, which is manifest in the sorts of properties they can bear. Most importantly, unlike events, satisfiables come with satisfaction

³ The view that the ability to be true or false is limited to mental objects can be found in Russell (1910): « Thus there will be in the world entities, not dependent upon the existence of judgments, which can be described as objective falsehoods. This is in itself almost incredible: we feel that there could be no falsehood if there were no minds to make mistakes » (« On the nature of truth and falsehood », 1910).

conditions. There is no intuitive basis, linguistic or otherwise, for events (including acts and states) being bearers of such properties as truth, fulfilment or realization, at least on the ordinary understanding of the notion. Having a content (or satisfaction conditions) is also the basis for other differences between satisfiables and events. For example, satisfiables have a part structure based on the notion of partial content only, whereas events have a temporal part structure. Moreover, satisfiables are evaluated and enter causal relations on the basis of their content, but not so events.

There is one philosopher in the history of philosophy that in a way recognized attitudinal objects and attributed great importance to them, namely Kazimierz Twardowski (1911). Twardowski noticed various differences in the types of properties that entities such as claims and requests and entities such as (acts of) claiming and requesting can bear, including that of bearing satisfaction conditions. For him the distinction was that between actions (such as acts of claiming or requesting) and products (such as claims or requests), understood in a particular way (to be discussed in Chapter 2, Section 4.4.). For Twardowski only products are bearers of content, and only products, not actions are relevant for philosophy of language and logic. The present project shares the recognition of the importance of what Twardowski took to be products, that is, attitudinal objects. But it does not follow Twardowski's particular way of drawing and of conceiving of the distinction between actions and what Twardowski called products, an issue that will be discussed in detail in Chapter 2 (Section 4.4.).

By entering relations of content-based causation, attitudinal objects play a central role in our mental life and in communication, as concrete bearers of satisfaction conditions. Being mind-dependent particulars, attitudinal objects avoid notorious conceptual problems for propositions: the Problem of the Graspability, the Problem of Truthdirectedness, the Problem of the Unity of the Proposition, and the Problem of Arbitrary Identification, problems which I will come to shortly. However, as we will see, attitudinal objects will not play the same semantic roles as propositions on the standard, Relational Analysis of attitude reports, that is, the analysis on which attitude verbs denote two-place relations between agents and propositions and propositions act as referents of *that*-clauses. We will come to that shortly.

There is another major difference between attitudinal objects and propositions. Attitudinal objects, unlike propositions, bear an important connection to normativity, which underlies the application of the predicate *correct* as well as the choices of particular satisfaction predicates with different attitudinal objects. In particular, truth and correctness coincide for attitudinal objects of the sort of claims, beliefs, speculations, and guesses, but not so for propositions, which do not reflect a normative notion of truth.

Modal objects can be abstract artifacts of the sort of laws, commitments, offers, and invitations, entities that may endure past the act that has produced them. Being able to endure past the act of their creation may even hold for certain attitudinal objects, namely those that involve some form of commitment, for example claims and promises. Claims and promises may endure past the speech acts that produced them (even if their features of concreteness are limited to the period the act). We will turn to the issue in Chapter 2 (Section 1.5.1.).

2. Concurrences with recent research in philosophy and linguistics

The overall view pursued in this book concurs with recent directions of research on the semantics of attitude reports and modal sentences.

First of all, it concurs with a recent approach in the philosophy of language that replaces the notion of an abstract proposition by a cognitive notion of a truth bearer, allowing truth bearers to be cognitively graspable and causally efficacious. Various philosophers, most notably Soames (2010) and Hanks (2015), have recently proposed cognitive notions of a propositions based on cognitive, truth-directed acts of predication. While the present project concurs with a view that truth bearers should be cognitively graspable particulars capable of playing causal roles, it does not take acts to be truthbearers. Rather it takes attitudinal and modal objects to be bearers of truth or more generally satisfaction. Moreover, the view developed in this book assigns attitudinal and modal objects very different semantic roles than propositions whether conceived as cognitive or as abstract. Propositions by definition are entities that compositionally determined semantic values of sentences and arguments of attitudinal relations. Attitudinal and modal objects, by contrast, are the things that clauses embedded under attitude verbs or modal predicates are predicated of. This also holds for independent sentences; an independent sentence is taken to convey the satisfaction conditions of the illocutionary object (e.g. a claim) meant to be produced by uttering the sentence. Of course sentences will still have a propositional content, but that content does not have the status of an object, but only serves the attribution of satisfaction conditions to attitudinal and modal objects.

This relates to another convergence with recent research. The project concurs with recent developments in syntax and the syntax-semantics interface, on which *that*-clauses do not act as referential terms, at least not generally, but rather have a function on which they can serve as predicates of content bearers (for example by being relative clauses) (Moltmann 1989, 2014, 2017, 2020, Kayne 2005, Arsjenevic 2007, Harves and Kayne 2012, Elliott 2017,

Moulton, 2009, 2015). The present view takes clauses to express properties of attitudinal and modal objects specifying their satisfaction conditions, rather than denoting abstract propositions that serve as arguments of the embedding predicate.

The present project also concurs with recent directions of research on the semantics of modality, which do not start out with sets of possible worlds, but take a localized approach to the semantics of modals, tracing the source of modality to particular objects or features of objects. One such approach is Fine's (1994) theory of essence, which makes use of a primitive notion of object-dependent essential truth to account for metaphysical necessity, rather than universal quantification over possible worlds. Another such approach is Vetter's (2015) semantics of circumstantial modality based on the notion of potentiality as a property of objects. In linguistics, an event-centered approach to epistemic and circumstantial modality has been proposed by Hacquard (2010). On the present view, the semantics of modals (of any sort) is based on modal objects, which may be more or less independent of each other, depend on particular individuals, and may have been produced by particular acts.

The present project also goes along with recent hyperintensional approaches to semantic content, that is, on which content is not identified with a set of possible worlds (which fails to distinguish logically equivalent propositional contents), but either with a set of situations or a else a structured complex (structured proposition). In particular, the present project adopts a version of truthmaker semantics as developed by Kit Fine (2017a, b, c, 2018a, b). Truthmaker semantics was originally developed for sentences, identifying the content of a sentence not with a set of worlds, but rather with a pair consisting of a set of situations that are the verifiers of the sentence and a set of situations that are its falsifiers. This semantics naturally extends to attitudinal and modal objects, yielding what I call object-based truthmaker semantics, which is developed in Chap. 3 - 4. On this semantics, an attitudinal or modal object is assigned as its content a pair consisting of a set of satisfiers and set of violators (if it has violators). Not only does this provide a sufficiently fine-grained notion of content; there are also specific reasons to adopt truthmaker semantics for satisfiable objects, as we will see (Chap. 3).

3. Responses to recent challenges to the notion of a proposition

3.1. Propositions and their problems

The project of this book responds to a range of challenges that have been at the center of recent philosophical and linguistic debates about propositional attitudes and modality.

One range of such challenges concerns the standard view of propositional attitudes as two-place relations between agents and propositions, that is, the Relational Analysis of attitude reports. This includes the more recent variant that replaces abstract propositions by types of acts of predication.

3.1.1. The standard view of propositional attitude reports and its motivations

The view of propositional attitudes that this project develops differs fundamentally from the standard views in philosophy and formal semantics, which centers on the notion of a proposition. Propositions, since Frege (1922) (and Bolzano 1837), have been taken to be mind- and language-independent objects that are functionally defined by at least three roles they are to play: they serve the roles of shareable contents of attitudes and illocutionary acts, of truth bearers, of the meanings of sentences (relative to a context), and of the denotations of (apparent) propositional anaphora and (apparent) propositional quantifiers.⁴ Propositions, as entities characterized in terms of those roles, are generally identified either with sets of circumstances (possible worlds) or structured propositions. The standard analysis of attitude reports is the Relational Analysis, on which (1a) has the logical form in (1b), where [*Mary is awake*] stands for the proposition denoted by *Mary is awake*:

(1) a. John claims that Mary is a genius.

b. $\text{claim}(\text{John}, [\textit{Mary is a genius}])$

The availability of apparent propositional anaphora and quantifiers such as *that*, *something*, and *everything* as well as free relatives like *what Mary claims* in place of *that*-clauses seems to confirm the status of *that*-clauses as referential terms and thus the objectual status of propositions:

(2) a. John claimed *something*, that Mary is a genius.

b. John claims *what* Bill claims, that Mary is a genius.

c. John claims that Mary is awake. Bill claims *that* too.

⁴ For the standard view of propositions see also Stalnaker (1979), Schiffer (2003), Richard (1990), Bealer (1998), King (2007), Merricks (2015). Frege uses the noun *thought*, which is actually a noun for attitudinal objects (or kinds of them). Thoughts for Frege are abstract, sharable contents of sentences and propositional attitudes.

Propositions are standardly taken to be separate from force: different illocutionary act types involving different forces can have the same propositional content, as can different propositional attitudes involving different attitudinal modes. The illocutionary verbs *assert* and *request* both take *that*-clauses in English and thus appear to be able to take the same propositional argument while conveying different forces. The attitude verbs *believe* and *hope* both take *that*-clauses in English and thus appear to be able to take the same propositional argument while conveying different attitudinal modes.

There are serious problems, however, for propositions as entities fulfilling the various roles at once. Moreover, there are difficulties treating propositional attitude verbs as denoting two-place relations between agents and propositions. Finally, the view that quantifiers like *something*, pronouns like *that*, and free relatives like *what John claims* stand for propositions does not accord with their actual semantic behavior.

3.1.2. Conceptual for propositions

In the following, I will very briefly review the philosophical and linguistic problems for propositions as abstract objects, problems which for the most part have been discussed in the literature in greater detail.

The philosophical critique of propositions concerns the following issues:⁵

[1] The Problem of the Graspability of Propositions

How can propositions as abstract objects be grasped, and thus act as the contents of mental attitudes?

[2] The Problem of the Truth-Directedness of Propositions

How can propositions, as abstract objects of any sort, be true or false?

[3] The Problem of the Unity of the Proposition

How can propositions have the particular truth conditions they are meant to have, if they are identified with structured propositions (n-tuples consisting of a property and n-1 objects, say).

[4] The Problem of the Content-Object Distinction

Propositions make up the contents of attitudes, rather than the objects of attitudes. But how does this come out when propositional attitudes are taken to be relations between agents and propositions?

⁵ See Jubien (2001) for problems [1]-[3] and [5], Soames (2010), Hanks (2007), Moltmann (2003a, 2013a). Devitt (1994, 2013) for problems [1]-[3] and [6]. Problem [4], the content-object distinction, goes back to Brentano, but made more clearly in Twardowski (1977)

[5] The Problem of Arbitrary Identification

How can proposition be considered identical to one particular formal object rather than another, e.g. a set of worlds rather than a set of singleton sets of worlds, or a particular n-tuple rather than an n-tuple in reverse order? ⁶

[6] The Problem of Content-Based Causation

Propositional content appears to be causally efficacious (*John's claim that he is poor may shock Bill, Mary's thought that she might become poor may frighten her*). But how mental and linguistic contents take part in causal relations when they are identified with propositions as abstract objects?

How do these problems arise? They arise because propositions are assumed to play at least three roles at once and clausal complements are assumed to act as singular terms providing an argument of the relation expressed by verb. Being shareable contents of attitudes that are denoted by sentences (or *that*-clauses) requires propositions to be abstract, or so Frege thought. Being semantic values of clausal complements of attitude verbs requires propositions to be arguments of a relation expressed by the attitude verb.

3.1.3. Empirical problems for the Relational Analysis of attitude reports

There are also linguistic difficulties for the standard view, in particular the Problem of Substitution and the related issue of the Objectivization Effect as well as the failure to reflect the actual semantic behavior of special quantifiers.

[1] The Substitution Problem and the Objectivization Effect

The Substitution Problem consists in the unacceptability of replacing a clausal complement of an attitude verb by an ordinary proposition-referring noun phrase, as in (3b) or (3c) as an inference from (3a):⁷

- (3) a. John claimed that Mary is a genius.
- b. * John claimed the proposition that Mary is a genius.
- c. * John claimed some entity / some content / some thing.

⁶ Propositions as such need not be identified with particular abstract objects. An alternative that would avoid problem [5] is to take propositions to be primitives, in their roles as contents of attitudes and truthbearers, and to be just represented by the particular mathematical objects that are compositionally determined meanings of sentences. See Schiffer (2016) for such an approach.

⁷ For the Substitution Problem and Objectivization Effect see Moltmann (2003a, b, 2013), as well as already Vendler (1967), Prior (1971), Bach (1997), among others.

There are only few verbs that permit such an inference, *believe*, *reject*, *deny*, *accept* and *prove* among them. On the Relational Analysis, however, the inference should go through with all attitude verbs.

The Objectivization Effect consists in the change in the reading of the complement with certain verbs like *fear*: whereas the *that*-clause complement provides the content of the attitude, as in (4a); an ordinary NP-complement denotes the object of the attitude or what the attitude is directed toward, as in (4b):

- (4) a. John fears that Mary is awake.
 b. John fears the proposition that Mary is awake / some proposition / some thing.

[2] The Semantics of Special Quantifiers

Quantifiers like *something* and pronouns like *what* and *that* do not lead to the Substitution Problem or the Objectivization Effect:

- (5) a. John claimed / feared something.
 b. Mary claimed / feared that too.
 c. What did John claim / fear?

Such quantifiers (and pronouns) can thus be called ‘special quantifiers’ (Moltmann 2013a). Philosophers generally assume that special quantifiers in place of *that*-clauses range over propositions and that pronouns like *that* and *what* in place of *that*-clauses stand for propositions.⁸ However, this cannot be right.

One argument concerns the sorts of restrictions that special quantifiers can take, which are not generally predicates applicable to propositions (Moltmann 2013a, b, 2013a):

- (6) a. John claimed something that caused consternation.
 b. John thought something daring.

⁸ See Horwich (1990), Schiffer (2003), Bealer (1998) and many others for that view. The critique holds both for the view on which special quantifiers are first-order quantifiers and on which they are higher-order quantifiers ranging over propositions. The view that special quantifiers are higher-order quantifiers goes back to Prior (1971).

Claims and thoughts, that is attitudinal objects, can cause consternation or be daring, but not propositions.

A second argument for special quantifiers not ranging over propositions is that special free relatives like *what John claimed* and *what Mary thinks* can be arguments of (first-order) predicates that are not applicable to propositions:

- (7) a. Mary likes what John's claim / John's claim / ??? the proposition John asserted.
 b. What Mary thinks / Mary's thought / ??? That proposition is disturbing.

The only reading of (7a) is one on which Mary likes John's claim, not a proposition, and (7b) only has a reading on which what is said to be disturbing is Mary's thought, not a proposition.

A third argument is restrictions on reports of the sharing of contents of different attitudes (Moltmann 2003a, b, 2013a), illustrated below:

- (8) a. ?? John claimed what Mary thought, that Bill is awake.
 b. ?? John claimed everything Bill hoped, that Mary is a genius.
 c. ?? John believes what Bill suspects, that Joe is a thief.

Such restrictions are entirely unexpected if such reports were about the sharing of a proposition. They present a serious problem for the proposition-based Relational Analysis, which takes special quantifiers and free relative clauses to range over propositions.

The restrictions, however, are explained straightforwardly if reports about content sharing are about the sharing of attitudinal objects or, better, kinds of them: (8a) is unacceptable because a claim is not a thought, (8b) because a claim is not a hope, and (8c) because a belief is not a suspicion.

There are exceptions to such restrictions on reports of content sharing. For example, (8c) becomes tolerable if *what Bill claimed* in (8b) is replaced by *what Bill merely suggested* (John claimed what Bill only suggested); likewise (8c) becomes better when *what Bill suspects* is replaced by *what Bill only suspects* (with focus on *suspects*). Such exceptions are discussed and analysed in detail in Moltmann (2003a, 2013a) on the basis of a lexical re-analysis of attitude verbs (in terms of a more general constative verb or verb of acceptance+ modifier).

Special quantifiers thus do not provide arguments in favor of propositions at all. Rather, the predicates and restrictions that apply to them indicate that special quantifiers range over attitudinal objects or kinds of them.

3.1.4. Cognitive propositions and their problems

Problems [1] – [3] for propositions have been addressed by recent proposals on which abstract propositions are replaced by types of cognitive acts, more precisely types of acts of predication (Soames 2010, Hanks 2015, 2018). Acts of predicating a property of an individual are taken to be constitutive of the unity and truth-directedness of the proposition. Grasping a proposition, on that view, means performing a mental act of predication of the type of that proposition. One crucial premise of that view is that acts are truthbearers, with propositions as types of acts inheriting their truth conditions from the acts that are their instances.

Attitudinal-objects theory shares some similarities with Soames' and Hanks's views. First, it also makes use of types (or kinds) of cognitive particulars for the role of propositions as truthbearers and shareable content bearers. This accounts for one problem for the standard view of propositions as abstract objects, the Problem of the Graspability of Propositions. Second, it shares Hanks' view that truth bearers come with forces and thus with different kinds of satisfaction conditions (such as conditions of truth, of fulfillment, and answerhood). However, attitudinal-objects theory differs from Hanks' and Soames' views in two important respects.

First of all, attitudinal objects are not acts. Acts do not have truth or satisfaction conditions, but attitudinal objects do.⁹ Moreover, attitudinal objects belong to a larger category of satisfiables that includes modal objects, but modal objects play no role in Hanks' or Soames theories. In fact, it is very unclear how their view could extend to sentences embedded under modal predicates.

Second, attitudinal-object theory does not share Soames's and Hanks' assumption that truth bearers are compositionally determined meaning objects which sentences, in particular embedded clauses, stand for. The Problem of the Truth-directedness and the Problem of the Unity of the Proposition arise only under that assumption. The problem of how propositions as abstract meaning objects can be truth bearers comes about only on the assumption that there such things as propositions, objects that are both essential bearers of truth conditions and compositionally obtained meanings of sentences. On the approach developed in this book, sentences embedded under attitude verbs act as predicates of mind-dependent objects,

⁹ See also Davis (2021) for a critique of propositions as types of acts and for an alternative cognitive conception of propositions. Ostertag (2014) gives a further argument against act-based conceptions, pointing out that predication act cannot provide truth conditions, since they fail to coordinate objects with argument positions.

attitudinal objects, which by nature are bearers of satisfaction conditions. The Unity of the Proposition Problem arises when propositions are taken to be structured propositions (say sequences of an $(n-1)$ -place property and individuals). Only then does the question come up how such a sequence can be true or false and have the particular truth conditions it is meant to have. On Soames' and Hank's theories, it is predicative acts that provide the unity of the propositions and its truth or satisfaction conditions. However, acts, on any intuitive understanding, just do not come with truth conditions and are unsuited to provide the 'glue' that unifies a structured proposition.¹⁰

Finally, the act-based view still endorses the Relational Analysis of attitude reports, which means it still faces the Problem of the Object-Content Distinction and the Substitution Problem and Objectivization, and it won't be able to account for the actual semantics of special quantifiers and pronouns, which does not involve propositions, as abstract or as cognitive entities.

3.2. Attitudinal-objects semantics

3.2.1. The semantics of attitude reports based on attitudinal objects

The semantics of attitude reports this book develops does away with propositions and makes use instead of attitudinal objects. It can thus be called 'attitudinal-objects semantics'. Attitudinal objects share with propositions the role of being truth bearers; but unlike propositions they are not also meanings of sentences. Rather they are entities that can just bear the satisfaction conditions given by sentences. While attitudinal objects unlike propositions are not shareable contents, they come in kinds whose instances are the same in content.

Given attitudinal-objects semantics, attitude reports are about attitudinal objects, but without attitudinal objects being the semantic values of *that*-clauses. Clausal complements of attitude verbs instead act semantically as predicates of the reported attitudinal object, specifying its satisfaction conditions.

Attitudinal-objects semantics does not take as its point of departure simple attitude reports like (9a, b), which seem to bear the Relational Analysis as in (9b) on its sleeve:

¹⁰ The structured-propositions view has also been motivated by the need to have a more fine-grained notion of content than a set of possible worlds. On a truthmaker-based view of content, content is fine-grained and a structured notion of content is not needed, see Chapters 3 and 4.

(9) a. John claimed that Mary is a genius.

b. $\text{claim}(\text{John}, [\text{Mary is a genius}])$

Rather it focuses on attitude reports with complex predicates, consisting of a light verb (such as *have* or *make*) and a noun taking a clausal modifier:

(10) a. John made the claim that Mary is a genius.

b. John has the belief that Mary is a genius.

Such complex attitude reports display attitudinal-objects semantics rather transparently. The noun in complex attitude reports generally describes an attitudinal object (or kind of attitudinal object) and the *that*-clause following it acts as a predicate modifier of the noun, giving the satisfaction conditions of the attitudinal object. In (10a, b), *have* and *make* express relations that hold between an agent and an attitudinal object (or kind of attitudinal object). The compositional semantics of complex attitude reports such as (11a) and (11b) is straightforward:

(11) a. $\exists d(\text{make}(\text{John}, d) \ \& \ \text{claim}(d) \ \& \ \text{prop}([\text{that Mary is a genius}])(d))$

b. $\exists d(\text{have}(\text{John}, d) \ \& \ \text{belief}(d) \ \& \ \text{prop}([\text{that Mary is a genius}])(d))$

Here the property denoted by the clausal modifier is predicated of an attitudinal object that the sentence existentially quantifies over. More precisely, $\text{prop}([\text{that } S])$ stands for the property (of attitudinal and modal objects) of having the particular satisfaction conditions conveyed by *that S*. This property (which will be spelled out in Chapter 3) consists in a truthmaker-based content, which, when predicated of an attitudinal or modal object, tells what the satisfaction conditions of that object are.

Complex attitude reports involve explicit reference to attitudinal objects and no reference to propositions. Complex attitude reports are rather common in natural language. Sometimes, complex attitude reports are variants of simple attitude reports, as in the case for (12a, b): sometimes they are the only options (*have the impression that S*, *have the premonition that S*). Not only should a semantics of attitude reports be able to also handle complex attitude reports such (10a, b). I will pursue the view that complex attitude reports display the semantics of simple attitude reports overtly and that simple attitude reports are in fact derived

syntactically from complex attitude reports. This means that simple attitude reports can be interpreted on the basis of the complex version with its explicit reference to attitudinal objects.

Attitudinal-objects semantics also applies to independent sentences. An independent sentence such as *Mary is a genius* will act as a predicate of utterances by giving the satisfaction conditions of the assertion meant to be produced by a particular utterance of the sentence. Such a predication view of the function of sentences also applies to a sentences' phonological and morpho-syntactic structures, which can likewise be conceived as properties of utterances. Thus, on an ordinary use of the sentence *Mary is a genius*, a speaker intends to produce an utterance *u* that realizes the phonological structure of *Mary is a genius*, and by producing *u* she intends to produce a realization of the morpho-syntactic structure of *Mary is a genius*. Furthermore, by producing that, she intends to produce an attitudinal object with the satisfaction condition given by *Mary is a genius* (and meeting further conditions such as direction of fit that matches the clause type of the sentence).

3.2.2. Attitudinal-objects semantics and the conceptual problems for propositions

Attitudinal-object semantics avoids the various conceptual problems for propositions. To an extent that is due to the fact that attitudinal objects are not considered the meanings of sentences (and *that*-clauses in particular). Only if propositions are conceived as abstract objects that are both meanings of sentences and truthbearers does the Problem of the Truth-Directedness of Propositions arise and, if propositions are conceived as structured, the Problem of the Unity of the Proposition. Only abstract-meaning objects give rise to those problems. Attitudinal objects are mind-dependent particulars. This means that their ability to represent (the fact that they come with truth- or satisfaction conditions) can be attributed to the intentionality of the mind itself. Attitudinal-objects semantics endorses the priority of the intentional (Chisholm 1984), the view that the ability to represent is due to the intentionality of the mind.¹¹ Specifically, it endorses the view the view that it is not abstract meaning

¹¹ Chisholm took the ability of linguistic expressions to be derived from the intentionality of the mental. This view also applies to the approach to sentence meaning pursued in this book, namely on which sentences have a truthmaking conditions and derivatively express properties of mind-dependent truth bearers. Thus, both attitudinal objects and sentences are considered truth bearers (or bearers of truthmaking conditions).

objects that are truth bearers (propositions), but rather mind-dependent objects, attitudinal objects,¹²

It is not the job of the semanticist or philosopher of language to account for the intentionality of mental objects. Rather it is the task for the philosopher of mind to account for the intentionality of the mental. The descriptive metaphysician and the semanticist only identify categories such as that of an attitudinal object on the basis of linguistically reflected and language-independent intuitions; the philosopher of mind can then take such categories as a point of departure and account for their properties within her discipline. If the content bearers involved in attitude reports are mind-dependent, it will be the task of the philosopher of mind to account for their ability to represent; it is not a task for a semanticist or philosopher of language to take on. The source of the Problem of the Truthdirectedness and the Problem of the Unity of the Propositions resides in the view that propositions are entities that are both the meanings of sentences and truth bearers, a view that is problematic both philosophically and linguistically.

The view developed in this book does away with propositions as entities. Sentences still have a truth-conditional content, but that content does not have the status of an entity in the semantics of natural language (at least not in the ‘core of language’, which excludes philosopher’s technical usage of *proposition*). The propositional content of a sentence does not serve the role of a referent of a *that*-clause, of an argument of an attitudinal relation, or as an entity in the domain that special quantifiers like *something* range. There are no entities fulfilling the various roles of propositions at once, on that view.

Also the Problem of the Content-Object Distinction is avoided. Truth bearers are no longer treated as the objects of attitudes. Rather having a propositional attitude means engaging (as an agent or experiencer) with an attitudinal object. The clausal complement will just give the satisfaction conditions of the attitudinal object. Having a propositional attitude thus does not mean standing in an attitudinal relation to something that is both a meaning object and a bearer of truth conditions.

Finally, the Substitution Problem does not arise since clauses embedded under attitudes are treated as semantic predicates rather than referential terms, an account that will be developed for simple attitude reports in Chapter 5.

3.3. Attitudinal objects and special quantifiers

¹² Such a view has also been endorsed explicitly by Russell (1910). See also, more recently, Boghossian (2010).

The semantics of special quantifiers such as *something* and free relatives like *what John claims* give significant empirical support for attitudinal-objects semantics. The relevant examples are repeated below:

- (12) a. John claimed something that caused consternation.
 b. John thought something daring.
- (13) a. I like what John claimed / John's claim / ??? the proposition John asserted.
 b. What Mary thinks / Mary's thought / ??? That proposition is disturbing.
- (14) a. ?? John claimed what Mary thought, that Bill is awake.
 b. ?? John claimed what Bill suspected, that Mary is awake.

Special quantifiers will be analysed as 'nominalizing' quantifiers ranging over the same attitudinal objects (or kinds of them) that the noun corresponding to the attitude verb would stand for (Chapter 5, Section 2.2.). Thus *something* in (12a) will range over claims and in (12b) over thoughts. (13a) is unproblematic if *what John claimed* stands for John's claim and (13b) if *what Mary thought* stands for Mary's thought. (14a) and (14b) are impossible because claims are not thoughts or suspicions, reports of content sharing requiring a shared kind of attitudinal object. The semantic analysis of special quantifiers will make use of the fact that special quantifiers syntactically involve (pronounced or silent) light nouns such as *-thing* (Kayne 2005, Moltmann 2022b), a crucial feature distinguishing them from ordinary quantifiers syntactically and semantically.

3.3. Attitudinal-objects semantics for specificational sentences

Attitudinal object nouns appear not only in complex attitude reports as in (10a, b), but also in specificational sentences as below:

- (15) a. John's belief is that he will win.
 b. John's claim is that he will win.

In specificational sentences such as (15a, b), the *that*-clause following *be* gives the content of the attitudinal object and *is* conveys the relation that holds between a content bearer and its content. Specificational sentences are a standard criterion for entities that are content bearers.

The criterion distinguishes beliefs and claims from emotional states such as happiness and anger, which also go with clausal modifiers, but which do not permit specificational sentences:

- (16) a. ??? John's happiness is that he won.
 b. ??? John's anger is that he did not win.

The reason is that emotional states like happiness and anger are not themselves bearers of satisfaction conditions; rather, they are relations toward facts (or possibilities). This means that in (16a, b) the *that*-clause gives the object, not the content of the mental state being described, as well be discussed in Chapter 7.

3.5. The semantics of modals with modal objects

The semantics of attitude reports as in (11a, b) can be carried over to modals. However, modals less often come with a complex-predicate version, at least in English and related languages. One modal verb that does have a complex-predicate version is the verb *need*, as in (17a), which alternates with *have (a) need*, as in (17b) (and which Harves and Kayne (2012) argue underlies syntactically the simple verb *need*):

- (17) a. John needs to sleep.
 b. John has (a) need to sleep.

Based on (17b), the semantics of (17a) can be given as in (18), where the clausal modifier of *need* (*John to sleep*) serves as a predicate of the modal object the sentence existentially quantifies over, giving its satisfaction conditions:

- (18). $\exists d(\text{have}(\text{John}, d) \ \& \ \text{need}(d) \ \& \ \text{prop}([\text{John to sleep}])(d))$

The main idea for the semantics of modals is that the prejacent, complement clause, or clausal subject of a modal acts as a predicate of the modal object. Such a clausal predicate applies with the same meaning to modal objects of the various flavors and forces. In particular, this means that sentences with modals of necessity and with modals of possibility will have the

very same logical form. Thus the logical form of (19a) will be the same as that of (17b), namely as in (19b):

(19) a. Mary has permission to work.

b. $\exists d(\text{have}(\text{Mary}, d) \ \& \ \text{permission}(d) \ \& \ \text{prop}([\text{Mary to walk}])(d))$

The difference in modal force will then be entirely a matter of the nature of the modal object. More precisely the difference resides in whether the modal object has not only satisfiers but also violators.

While specificational sentences and complex predicates involve explicit reference to attitudinal and modal objects and thus make their semantic involvement indispensable, there are also good reasons to posit them for the semantics of simple attitude reports and modal sentences; as will be discussed in further detail in Chapters 4 and 5.

3.6. The semantics of attitudinal nouns

On the present view, attitudinal nouns like *belief* and *claim* denote attitudinal objects, entities distinct from both acts and propositions. This view differs from the standard view on which such nouns are polysemous, denoting either events or propositions. The standard view about attitudinal nouns is related to a standard assumption in both philosophy and natural language semantics that there are two sorts of objects associated with propositional attitudes and illocutionary acts: [1] acts or states and speech acts and [2] propositions as the objects or contents of propositional attitudes or illocutionary acts.

Standardly, beliefs, desires, hopes, and intentions are considered mental states, belonging to the same ontological category as mental acts or events. Actions, events, and states are generally taken for granted ontologically or at least not in further need of explanation. They are equally well-accepted in linguistic semantics and in particular posited as implicit arguments of verbs, following the influential Davidsonian analysis of action sentences (Davidson 1967).

The standard, proposition-based view takes nouns like *judgment* and *claim* to either stand for mental events or speech acts or for propositions.¹³ That is to account for the observation

¹³ See, for example, Pustejovsky (1995) and Thomson (2008) for the standard view.

that such predicates allow on the one hand for content-related predicates such as *true* (which could apply to propositions) and on the other hand for predicates of concreteness, specifying, for example, a temporal duration or causal relations. However, there are good reasons to consider such nouns univocal, standing for entities of a third kind, namely attitudinal objects. One reason is that they permit at once predicates of concrete objects and truth predicates:¹⁴

- (20) a. John remembered his false judgment that S.
 b. Mary overheard John's true claim that S.
 c. John's obviously false claim yesterday caused astonishment.

Another, more important reason is the applicability of various predicates that could not apply in the same way to either propositions or events. In fact, beliefs, judgments, and claims belong to a category of objects -- the category of attitudinal objects -- which have a range of linguistically well-reflected characteristics that together distinguish them both from propositions and from actions. In particular, predicates of satisfaction can apply to a request, a piece of advice, or a promise, but neither to an action nor a proposition (Ulrich 1976, Moltmann 2014, 2017c):

- (21) a. John fulfilled the request.
 b. ??? John fulfilled the act of requesting / a proposition.
 (22) a. Joe followed the advice.
 b. ??? Joe followed the act of advising / a proposition.
 (23) a. John broke the promise.
 b. ??? John broke the act of promising.

The applicability of predicates of satisfaction makes particularly clear that nouns like *request*, *advice*, or *promise* can stand neither for acts nor propositions: neither acts nor propositions can be 'fulfilled', 'followed', or 'broken', a point emphasized by Ulrich (1976).

4. A Davidsonian event-based alternative semantics of attitude reports?

¹⁴ These are not the ordinary cases of co-predication dealt with in the pertinent literature (Pustejovsky 1985, Asher 2010). This literature focuses on conjunction of predicates of different sorts, allowing conjuncts to apply to different developments of an underspecified entity referred to by the subject term. Compositionally such an account would not be available in (9a, b), which requires a modifier to apply to the semantic value of the noun and then the predicate to apply to that.

On Davidson's (1967) semantics of adverbials, events are implicit arguments of verbs so that adverbials can be considered predicates of events, as in (24b) for (24a):

- (24) a. John walked slowly.
 b. $\exists e(\text{walk}(e, \text{John}) \ \& \ \text{slowly}(e))$

Events should also be implicit arguments of attitude verbs, which allow, for example, for temporal adverbials and manner adverbials:¹⁵

- (25) a. John finally realized that Mary was not interested in the project.
 b. John with little effort concluded that the problem was unsolvable.

Davidsonian event semantics was originally motivated by explaining the possibility of adverb drop, the validity of the inference from (24a) to *John walked*. Davidson's semantics of events has been immensely influential in linguistic semantics, with a great range of applications being pursued beyond the semantics of adverbials. This makes it tempting to use it also for a semantics of attitude reports when clausal complements are not considered referential terms standing for propositions, but rather predicates of concrete content bearers. Clausal complements would then be predicates of the Davidsonian event argument of the attitude verb, a view that has been pursued by a number of researchers (Moltmann 1989, Elliott 2017, Bondarenko 2022). On such an event-based analysis of attitude reports, the logical form of (26a) would be as in (26b), where for a sentence *S*, $\text{cont}([S]) = \lambda e[\text{content}(e, [S])]$, that is the property of events of having the content of *S* as their content (however sentential content is to be construed):

¹⁵ The same adverbials apply to complex attitude predicates, which means that the same event occupies an implicit argument position of the light verb:

- (i) a. John finally made the assumption that the problem is solvable.
 b. John with little effort reached the conclusion that the problem is unsolvable.

By contrast, nominal attitudinal constructions do not generally permit the same predicates as noun modifiers, at least on the same event-related reading:

- (ii) a. ?? John's final assumption that the problem is solvable.
 b. ?? John's conclusion with effort that the problem is unsolvable.

- (26) a. John thinks that Mary is happy.
 b. $\exists e(\text{think}(e, \text{John}) \ \& \ \text{cont}([\text{that Mary is happy}])(e))$

However, taking clausal complement to be predicates of Davidsonian event arguments is in error. First of all, events are not content bearers, as was already discussed.¹⁶ Events fail to have truth or satisfaction conditions and other content-related properties. In addition, the Davidsonian semantics of attitude reports would wrongly predict that clausal complements can modify nouns that describe speech acts or mental acts:

- (27) a. * John's speech act that he will come to the party.
 b. * John's belief state that the problem is solvable
 c. * The event /act / state that the problem is unsolvable.

Davidsonian events do not come with satisfaction conditions and thus cannot bear the content that a clausal modifier would attribute to them. Only nouns for attitudinal objects permit clausal modifiers that attribute content:

- (28) John's hypothesis / idea / thesis that the problem is unsolvable.

While there are the same motivations from adverbials for using Davidsonian semantics for attitude verbs as for verbs in general, it is a mistake to consider Davidsonian events themselves to be bearers of content and targets of predication for clausal modifiers. Since the semantics of adverbials are not of interest in the present context, I will largely disregard Davidsonian event arguments for attitude verbs in this work.

5. The question of the priority of attitudinal objects and the corresponding act

There is one important question, though, that arises with respect to the category of events for the present project. This how act-related attitudinal objects relate to the corresponding acts, e.g. how claims relate to acts of claiming and judgments to acts of judging. The question in particular arises, should attitudinal objects that are related to acts, such as claims and

¹⁶ Another researcher pursuing an account of clausal complements based on Davidsonian event semantics is Pietroski (2005). Pietroski, however, makes use of a more general relation than that of content between an event and the content of the clause, namely what he calls 'import'.

judgements be taken to be dependent on the corresponding acts (of claiming and judging), as products of those acts? This is in fact suggested by Twardowski (2011), who distinguished acts of claiming and judging from claims and judgments as their products. As products of those acts, they may be conceived as abstract artifacts produced by them (see Chapter 2, Section 4.4.). However, it appears that attitudinal objects actually take priority over the acts described by the corresponding attitude verbs, rather than the other way around.¹⁷ A claim is not produced by an act of claiming; it is produced rather by acts below the act of claiming, such as acts of uttering a sentence with a particular meaning. A particular act of claiming that the world is round rather is individuated in terms of the claim that the world is round, the attitudinal object. An act of claiming that the world is round is in fact just the making of the claim that the world is round, which means the complex predicate *make the claim that S* reflects the nature of act more transparently. Likewise, an act of judging does not produce a judgment; rather an act of judging is the making of a judgment. The decompositional analysis of attitude verbs, on which simple attitude reports are interpreted on the basis of complex attitude reports is thus well-motivated also conceptually.

6. Summary

To sum up, the starting point of this project is a novel ontology, pursued within a version of metaphysics that attributes particular importance to linguistically reflected intuitions. Together with a semantic analysis of attitude reports based on complex predicates rather than simple attitude verbs, the ontology of attitudinal objects avoids serious problems facing the Relational Analysis whether based on the traditional notion of an abstract proposition or the more recent one of a cognitive proposition. The ontology of modal objects together with a new analysis of modal sentences moreover will open up new, ‘localized’ perspectives on the semantics of modals that is not based on quantification over worlds.

¹⁷ See also Davis (2020) on this point, a justified critique of my earlier work on attitudinal objects as products of the corresponding acts (Moltmann 2014, 2017a).