

# Chapter 8

## Quantification with Intentional and with Intensional Verbs

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**Abstract** Whether natural language permits quantification over ‘nonexistent’, intentional objects is subject of a major controversy, as is the nature of such entities themselves. This paper argues that certain constructions in natural language involving ‘intentional verbs’ such as ‘*think of*’, ‘*describe*’, and ‘*imagine*’ cannot be analysed compositionally without positing intentional objects, as entities strictly dependent on intentional acts. The paper also argues that intentional verbs involve a distinctive semantics, which is fundamentally different from that of intensional transitive verbs, a difference reflected in a range of quantificational phenomena.

The questions whether natural language permits quantification over intentional objects as the ‘nonexistent’ objects of thought is the topic of major philosophical controversy, as is the status of intentional objects as such. Many philosophers deny the possibility of there being ‘nonexistent’ objects of thought. Others following Meinong [12], take ‘nonexistent’ objects of thought to be entities individuated only by a particular set of properties, and as having a weaker form of being than existence. Yes others, in the tradition of Brentano [1], admit the possibility of intentional, nonexistent objects, but take them to be dependent on an intentional act or state. This paper will argue that natural language does reflect a particular notion of intentional object and in particular that certain types of natural language constructions (generally disregarded in philosophical literature) cannot be analysed without positing intentional objects. At the same time, those intentional objects do not come for free; rather they are strictly dependent on intentional acts that generally need to be present, in one way or another, in the semantic structure of the sentence.

The constructions in question display a particular dependence of intentional objects on the event argument of an intentional verb in the same sentence, a verb like

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*think about, refer to, describe, or imagine.* Intentional verbs, I will argue, involve a semantics different from that of extensional verbs and their semantics needs to be sharply distinguished from that of intensional verbs, verbs like *need, look for* and *owe*. Intentional and intensional verbs differ in a range of semantic properties, in particular in regard to quantificational complements.

The intentional objects that natural language involves are part of the domain of quantifiers and act as semantic values of referential terms, but as entities they are mere projections of what I call *quasi-referential acts*, namely either unsuccessful intentional acts or pretend acts of reference. Intentional objects depend for existence on quasi-referential acts and can bear (ordinary) properties only relative to acts of attribution. Moreover, what matters for the identity of intentional objects are relations of coordination among quasi-referential acts: two intentional objects are identical if the acts on which they depend are coordinated, regardless of what properties the entities are attributed.

The paper will first discuss the relevant natural language constructions and outline the required notion of an intentional object, proposing a particular semantic analysis of intentional verb constructions. Second, it will then contrast the semantics of intentional verbs with that of intensional verbs and address a range of further issues regarding the use of intentional objects in the analysis of natural language.

## 8.1 Quantification over Intentional Objects in the Context of Intentional Verbs

### 8.1.1 *Intentional Objects in the Semantics of Natural Language*

There is hardly a general agreement among philosophers that intentional or fictional object need to be posited, for the semantics of natural language or other purposes. One common strategy for avoiding fictional or intentional objects consists of making just use of quasi-referential acts and the relation coordination among them.<sup>1</sup> There are, however, constructions in natural language for which intentional objects not only appear to provide a straightforwardly analysis, but that could hardly be analysed compositionally without them. These are not the usual constructions discussed in the philosophical literature, though. The philosophical literature focuses on simple negative existentials as in (1) (consisting of a proper name or definite NP and an existence predicate such as *exist*) and sentences with transitive intentional verbs of the sort in (2)<sup>2</sup>:

<sup>1</sup>For such a view see Everett [4], Walton [36], and Taylor [29].

<sup>2</sup>Throughout this paper I assume that *exist* is a predicate. See Miller [13, 14] and Salmon [27, 28] for a philosophical defense of that view as well as Moltmann [20] for further linguistic considerations.

1. (a) The golden mountain does not exist.  
(b) Vulcan does not exist.
2. (a) John thought of the golden mountain.  
(b) John imagines a beautiful castle in the sky.

While intentional objects may provide a straightforward account of (1) and (2) preserving the uniformity of the semantics of definite and indefinite NPs, such sentences have hardly convinced philosophers in general of the necessity of positing intentional objects. A prominent approach to negative existentials as in (1), defended by Salmon [27, 28] as well as Sainsbury [26], is to take the subject of a negative existential to have an empty denotation and negation to be external. On that view, (1a) is to be understood as ‘it is not true that the golden mountain exists’, denying the truth of the sentence *the golden mountain exists*, rather than asserting its falsehood. Also the sentences in (2) do not seem to require intentional objects. The complements of verbs like *think of* or *imagine* could be taken to be that of intensional verbs, not requiring an actual referent, or as acting ‘adverbially’, as on adverbial approaches to intentionality.<sup>3</sup>

However, there are natural language constructions whose compositional analysis can hardly do without intentional objects. The *there*-sentence below is an example:

3. (a) There is a woman John is thinking about that does not exist.

In (3a), the object of John’s thought belongs to the range of objects that the *there*-construction quantifies over, but it is an object that the existence predicate *exist* is not true of.

Here are further examples making the point ((3d) being a negative existential with the existence predicate *happen*):

- (b) There are several buildings described in the catalogue that do not exist.
- (c) There are two buildings mentioned on the map that do not exist.
- (d) There is an accident John was thinking about that did not happen.

What is crucial in those examples is the occurrence of the *intentional verb* in the relative clause, that is, a transitive verb describing a mental act or speech act directed toward something possibly nonexistent. Without it, the sentences can hardly be considered true:

4. (a) There is a woman that does not exist.  
(b) There are several buildings that do not exist.  
(c) There is an accident that did not happen.

Sentences of this sort pose problems for certain Meinongian views on which nonexistent objects are mind-independent objects constituted by a (noninstantiated) set of properties.<sup>4</sup>

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<sup>3</sup>See Tye [31].

<sup>4</sup>Such sentences are not a problem, though, for the Meinongian theory of Priest [24], who takes nonexistent objects to have ‘existence-entailing’ properties (such as the property of being a woman)

Quantification over intentional objects can also be achieved with two other sorts of constructions. One of them involves quantificational NPs, modified by relative clauses containing an intentional verb, as in (5a,b):

5. (a) Some women John mentioned do not exist.
- (b) Many buildings that John had planned never came into existence.

The other one involves quantificational NPs that are complements of intentional verbs:

6. (a) John mentioned some woman that does not exist.
- (b) Mary had described a building that never had come into existence.
- (c) Mary made reference to a poet that does not exist.
- (d) The book is about a detective that does not exist.

Intentional verbs allow for the introduction of intentional objects both as main verbs and in relative clauses. Intentional verbs are not the only linguistic means, though, of making intentional objects available for quantification. In addition adjectival modifiers such as *imaginary* enable quantification over intentional objects:

7. There are imaginary women that do not exist.

Of course, also the relational-noun construction *object of thought* itself can be used for that purpose<sup>5</sup>:

8. There are objects of thought/objects of imagination/objects of fantasy that do not exist.

Furthermore nouns like *topic* and *subject matter* enable quantification over intentional objects<sup>6</sup>:

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only in other possible worlds, the worlds that realize the content of the fiction or the relevant intentional acts or states. It seems that this account makes predictions about modal statements, though, that are unsupported by linguistic intuitions. Sentences such as (ia) below do not seem any better than (ib):

- (i) (a) There is something that could be a tree that does not exist.
- (b) There is a tree that does not exist.

<sup>5</sup>The noun *object* in the construction ‘object of thought’ is in fact a relational noun since it cannot be replaced by a noun like *entity* or *thing*. *Object of thought* describes whatever entities may stand in the object-of-relation to a thought or other intentional state or act, be it a real object of some type or a ‘nonexistent’ object. See also Crane [3].

<sup>6</sup>Also the non-sortal noun *thing* allows for quantification over intentional objects in *there-sentences*:

- (i) There are things that John imagined/thought about/made reference to that do not exist.

In this function, it need not match gender features of the intentional object:

- (ii) There is something John was thinking about, a son who would one day take over his company.

9. (a) There are many topics John talked about, the woman Bill had mentioned, the pet Joe dreamt about etc.
- (b) There is a subject matter we did not discuss, namely the house John plans to build.

While the construction *object of thought* involves generic reference to intentional acts, nouns like *topic* and *subject matter* don't involve reference to intentional acts, at least not overtly.

### 8.1.2 *The Notion of an Intentional Object*

Constructions with intentional verbs display a particular notion of an intentional object as an object strictly dependent on an intentional act. Here a terminological distinction is needed between 'object of thought' and 'intentional object'. The object of a thought is what the thought is directed toward, which may be a real object or an object that does not exist, that is, a merely intentional object. In case a thought is not directed toward a real object but a merely intentional one, I will call the latter simply an 'intentional object', thus distinguishing—in a nonstandard way—the term 'object of thought' (which expresses a function that objects, real or nonexistent, may have) from the term 'intentional object' (as a term for a certain sort of nonexistent entity). Thus, for any object-directed attitude that is not directed towards a real object, there will be a corresponding intentional object.

Even though real and intentional objects may both play the role of objects of thought, they are not on a par otherwise. A merely intentional object is one that does not 'exist', and it may be an indeterminate or an impossible object.<sup>7</sup> Positing intentional objects thus does not mean taking unsuccessful acts of reference to in fact be successful, referring to intentional objects. Rather intentional objects are 'pseudo-objects' entirely constituted by unsuccessful or pretend acts of reference itself (and acts they are coordinated with). The non-existence of intentional objects thus is 'essentially and constitutively failed intentionality', as McGinn puts it (McGinn [11, p. 43]). Intentional objects are not part of the ontology; they are mere projections of intentional acts, which is why they have the status of nonexistents. Intentional objects thus are not peculiar types of objects that are by nature nonexistent.<sup>8</sup>

Intentional objects are dependent on intentional acts in a particularly strict way. An intentional object *o* dependent on an intentional act *a* does not have an (ordinary)

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<sup>7</sup>One might posit the same type of intentional object for the two cases of attitudes and, in the case of an attitude being directed toward a real object, allow an intentional act to be related to two sorts of objects simultaneously: an intentional object and a real one. However, such a move is notoriously problematic: an intentional act just cannot relate to two such objects at once: it has a single object. This is a common objection raised against Brentano, see Voltolini [34] for discussion.

<sup>8</sup>For a critique of intentional objects in that sense see van Inwagen [33].

property  $P$  as such, but only relative to an act  $a'$  coordinated with  $a$  such that  $a$  involves the attribution of  $P$  to  $o$ . Whether two intentional objects are the same does not depend on whether they are attributed the same properties in intentional acts but whether the acts they depend on are coordinated. I will return to the relevant notion of coordination among intentional acts later.

### 8.1.3 *Intentional Objects and Fictional Objects*

Intentional objects as nonexistent objects need to be distinguished from fictional objects as objects that come into being by an act of creation. Intentional objects are the objects of certain object-related attitudes and linguistic acts that fail to be successful or were not meant to be successful. A fictional object is an entity that is created by producing a piece of fiction, and as a creation it exists. A fictional object is an object that an author creates as something going along with the story he is writing. A fictional object as a created object in that sense is an existent object, not a nonexistent one. It is an abstract artifact, to use Thomasson's [30] term.<sup>9</sup>

Intentional objects and fictional otherwise share important features. Both may be underspecified for a range of properties and be attributed contradictory properties in different acts (and even in a single act).<sup>10</sup> Both depend on intentional acts, in particular coordinated acts. But whereas fictional objects as abstract artifacts are true objects, intentional objects are quasi-objects: they are mere projections from unsuccessful or pretend referential acts. They in general can bear a property only relative to an act involving the attribution of that property, namely the object an associated referential act is meant to refer to.<sup>11</sup>

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<sup>9</sup>The particular conditions that may distinguish a fictional object from an intentional object are further discussed in Thomasson [30] and Voltolini [35].

<sup>10</sup>The underspecification of intentional objects should not be confused with the nonspecificity of the complement of intensional transitive verbs, a point that will be discussed later.

<sup>11</sup>It is customary in the philosophical literature on fiction to distinguish between 'internal predication' and 'external predication'. *Sherlock Holmes lives on Baker Street* is true because the property of living on Baker Street is predicated of Holmes internally, whereas *Sherlock Holmes is a fictional character* is true because the property of being a fictional character is predicated of Sherlock Holmes externally. This suggests that intentional objects are predicated properties only internally, whereas fictional objects can be predicated properties both externally and internally. However, I think this distinction is not helpful. Intentional objects simply do not have properties as such, internally or externally predicated, rather they have properties only relative to an intentional act (including the intentional acts that make up a context of fiction).

A related distinction is Meinong's distinction between nuclear predicates and extranuclear predicates (see also Parsons [23]). However, the distinction between two ways of predicating is a better one, since one and the same predicate may be both internally and externally predicated. Another related distinction is the one van Inwagen [32] draws between having a property and holding a property. Having a property corresponds to a property externally predicated, whereas holding a property corresponds to a property internally predicated.

Intentional objects, as projections of quasi-referential acts, can bear certain properties, such as the property of being a topic of conversation, the property of being the object of an object-directed attitude, and of course the property of not existing. But intentional objects are not in space or time, whereas fictional objects as abstract artifacts have a temporal lifespan (Thomasson [30]).<sup>12</sup>

Given the distinction between fictional and intentional objects, a fictional name can be used in three different ways: for pretend reference (the referential use within a pretend context), as standing for an intentional object; and as standing for a fictional object. Only the fictional object can be the referent of a more complex term, of the sort the *fictional character Hamlet*, with its specific sortal *fictional character*.

The basis for intuitions about fictional objects is different from that for intuitions about intentional objects. Intuitions about fictional objects are based on our talk about fiction. By contrast, for at least the present purposes, intuitions about intentional objects will involve natural language constructions, in particular those with intentional verbs.

### 8.1.4 *Intentional Objects and the Relation of Coordination Among Referential Acts*

Intentional objects can be shared by different agents and by different acts of the same agent. Whether different acts or states share an intentional object depends not so much on whether the acts attribute the same properties to the object, but whether they are coordinated, that is, when the one act is meant to refer to or pretends to refer to the same object as the other act. Coordination among referential acts is an asymmetric relation among acts and to be understood roughly as follows: an act  $a$  is coordinated with an act  $a'$  iff  $a$  is meant to refer (or to pretend to refer) to the same object as  $a'$ .<sup>13</sup> Intentional acts of the same agent and of different agents may be coordinated.

The possibility of the same intentional objects to be shared by different, coordinated intentional acts is well-reflected in natural language. Different intentional objects can be the arguments of several intentional predicates, as long as the described intentional acts are coordinated, as in the examples below:

10. (a) John mentioned the woman the book is about.
- (b) John is thinking about the woman Mary told him about.

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<sup>12</sup>What is described in a piece of fiction can also be viewed as an intentional object rather than a fictional object, namely as the intentional object that corresponds to the coordinated intentional acts that make up the writing of the fiction. It is the object the fiction is about, but it is not the object the author intended to create. The same pretend acts of reference thus give rise to two distinct objects: nonexistent intentional objects and fictional objects. The two kinds of objects may share the same internally predicated properties, but they differ in ontological status: one of them is a quasi-object, the other one is an abstract artifact.

<sup>13</sup>The relation of coordination as a relation among intentional acts thus differs from that of Fine [7], which is viewed primarily a relation among occurrences of expressions.

- (c) John described the palace he had imagined.
- (d) Jane told me about the woman John had described.

Intentional objects cannot be shared when there is no coordination among the relevant intentional acts, even if the respective acts involve the attribution of the same properties. Moreover, intentional objects can be the same even if they depend on acts attributing incompatible properties to them. Thus, (10a) would be true even if what John says about the woman contradicts what the book says about her.

Coordination among intentional acts is also reflected in the applicability of *the same N*. For two intentional acts to share ‘the same N’, it does not suffice that they involve intentional objects to which the same properties have been attributed (which is not even a necessary condition); rather the intentional acts (with respect to the relevant property attributions) have to have been coordinated—unless of course the objects of the acts are real objects. Consider the inference from (11a) and (11b) to (11c) and from (12a) and (12b) to (12c):

- 11. (a) John imagined a blue circle.
- (b) Bill imagined a blue circle.
- (c) John and Bill imagined the same circle.
- 12. (a) John thought of a tall woman with red hair.
- (b) Bill thought of a tall woman with red hair.
- (c) John and Bill thought of the same woman.

The inference in (11) is invalid, unless ‘the same circle’ is understood as ‘the same type of circle’, and similarly for (12) (assuming that the women in question do not exist), unless of course the intentional acts are coordinated.

The noun phrase *the same N*, for an ordinary noun N, needs to be sharply distinguished from the noun phrase *the same thing*, which gives rise to very different intuitions. The inference from (11a) and (11b) to (11c) is in fact valid, as is the inference from (12a) and (12b) to (12c):

- 13. (a) John and Bill imagined the same thing.
- (b) John and Bill thought of the same thing.

However we will see that *the same thing* involves an entirely different semantics than *the same N*, for an ordinary noun N: with *the same thing* in (13a,b), *imagine* and *think of* are used as intensional verbs, not intentional verbs, and *the same thing* in such sentences does not serve to express the sharing of an intentional object, but rather the sharing of a different, more abstract kind of entity.

The use of anaphora also reflects the importance of coordination for the identity of intentional objects:

- 14. (a) John described a castle. Bill described it too.
- (b) John dreamt about an extraordinary country. Bill dreamt about it too

As long as no real objects are involved, (14a) and (14b) imply that John’s and Bill’s acts of describing and dreaming are coordinated (which includes being related to a common source, for example a representation John and Bill both saw).

Thus, the identity of intentional objects does not so much depend on what properties they are attributed, but on the acts they depend on and on relations of coordination those acts enter with other acts. If John describes the woman he read about, John's description shares its intentional object with the one the book is about, as well as the act of writing the book. But John's description need not ascribe the very same property to that intentional object. John may remember the woman described incorrectly and the author may not be able to present the intended character well. Similarly, several acts of imagination may be about the same intentional object, involving the attribution of different properties. Of course, also different kinds of intentional acts may be coordinated. An act of describing may be coordinated with an act of imagination. We can then state the following conditions on intentional objects:

### Conditions on intentional objects

15. (a) For any quasi-referential act  $e$ , there is an intentional object  $f(e)$  of  $e$ .
- (b) For quasi-referential acts  $e$  and  $e'$ , the intentional object of  $e =$  the intentional object of  $e'$  iff  $e$  and  $e'$  are coordinated.
- (c) For a quasi-referential act  $e$ , for an existence predicate  $E$  suited for the sortal that some act coordinated with  $e$  attributes to  $f(e)$ ,  $E$  is false of  $f(e)$ .

The condition that the existence predicate be suited for the sortal property attributed to an intentional object accounts for the observation that, for example, *exist* can apply only to material and abstract objects and not events, whether actual or intentional, whereas an existence predicate like *happen* can apply to events only, whether actual or intentional (Moltmann [20]).

## 8.2 The Semantics of Intentional Verbs

### 8.2.1 *The Interpretation of the Complement of Intentional Verbs*

We have seen that the object position of transitive intentional verbs may involve intentional objects that are not generally available for quantification otherwise. The availability of intentional objects as entities in the domain of a quantifier obviously is tied to the intentional act described by the intentional verb. Given Davidsonian event semantics, this intentional act will be the Davidsonian event argument of the intentional verb.

The availability of intentional objects should not be made dependent directly, though, on the presence of an intentional event in the semantic structure of the sentence. This is because intentional objects can also be the semantic values of NPs like *subject matter* or *topic*. What is special about transitive intentional verbs is in fact not so much the described event making available an intentional object, but rather the ability of the complement to attribute a property constitutive of an intentional object, which is not the ordinary way of attributing a property to an object. This attribution of a property need not be part of the event described by the

intentional verb though. If John thought of a detective, namely Sherlock Holmes, he need not know that Sherlock Holmes according to the fiction is a detective. But some coordinated act, at least that of the speaker uttering the sentence, attributes the property of being a detective to the object of John's thought.

The complement of an intentional verb is thus not evaluated in isolation, but relative to the event described by the verb. For present purposes, I will capture this dependence by simply taking nouns and adjectives to be polysemous, displaying an additional lexical variant involving an argument position for acts of attribution. Thus, for a 'non-relational' noun N, 'N(x, e)' is to be understood as 'some act coordinated with e attributes the property expressed by N to x'.

Note that the very same interpretation of the intentional verb—complement relation applies if the object of the intentional act or state turns out to be an actual object. This is important because the semantic interpretation of sentences with intentional verbs should stay neutral as to whether the described intentional act or state is successful or not. The semantics should not distinguish the case in which the complement of the intentional verb stands for an actual object from the one in which it stands for a merely intentional one. The complement can in both cases, for example, act as antecedent of anaphora in subsequent sentences.

The interpretation of the construction 'intentional verb-complement' will be based on coindexing of the nominal with the verb as below:

16. (a)  $V_i DN'_i$

This syntactic relation then is interpreted by making use of the event argument of the verb for the interpretation of the nominal. The interpretation of a sentence like (16b) will thus be as in (16c):

(b) John mentioned<sub>i</sub> [a woman<sub>i</sub>]

(c)  $\exists e \exists x(\text{mention}(e, \text{John}, x) \ \& \ \text{woman}(x, e))$

(16c) is to be understood as 'There is an event of mentioning an object on the part of John coordinated with an event of attributing the property of being a woman to that object'.

### 8.2.2 *Relative Clauses with Intentional Verbs, with Past Tense and with Modals*

The semantic analysis of intentional verbs cannot as yet apply to constructions with relative clauses containing an intentional verb as below:

17. (a) The woman John has described

The problem is that the standard compositional semantics of relative clause constructions cannot apply to this construction: the head noun would have to take as one of its arguments the event described by the intentional verb inside the relative clause, which is impossible. However, there is a syntactic view according to which the head of the relative clause originates from the lower position inside the relative clause. More specifically, it has been argued that the head noun of a relative-clause

construction may originate from inside the relative clause.<sup>14</sup> If moreover movement of an expression is in fact copying, then an unpronounced copy of the expression moved will be left behind which will then be the one taken into account by semantic interpretation. This means that the construction can be interpreted as if the head noun was in the lower position, either by having left a copy in that position (on the copy theory of movement) or by being reconstructed into the lower position. The copy left behind should have the status of a restricted variable, bound by a silent operator that stands for the relative pronoun. The syntactic issues need not concern us in detail. Rather it suffices to take advantage of the general syntactic view that permits *the woman John described* be interpreted as below:

- (b) The  $e$  [that John described  $e$  woman]
- (c)  $\lambda x[\exists e(\text{mention}(e, \text{John}, x) \ \& \ \text{woman}(x, e))]$

Quantification over nonexistent objects can also be made available with modals and past tense which extend the range of a quantifier to past and possible objects. Modals and past tense pattern exactly the same as intentional verbs in relative-clause constructions:

- 18. (a) There are buildings that John could have built that do not exist.
- (b) There are many buildings built in the eighteenth century that do not exist anymore.
- (c) There are buildings that do not exist.

The relative clauses in (18a) and (18b) permit *there*-sentences to range over possible and past objects of which the existence predicate is not true, which is not the case for (18c), which can hardly be considered true. While the denotation of the noun *buildings* as such can contain only actual buildings, the denotations of *building that I could have built* and *buildings built in the eighteenth century* contain possible and past objects as well.<sup>15</sup> The reason why (18c) cannot be true must be that nouns are existence-entailing, unless they are modified by a suitable intensional modifier.<sup>16</sup>

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<sup>14</sup>See Carlson [2] and Grosu and Landman [9].

<sup>15</sup>Other kinds of intensional modifiers that extend the domain of quantification of a *there*-sentence are those in the sentences below:

- (i) (a) There are possible buildings that do not exist.
- (b) There are philosophers of the past who hold the same view.

<sup>16</sup>Past objects may allow for other predicates that do not entail existence besides psychological predicates, namely predicates describing the causal effects or historical influence of an object, such as *influential* or *important*. Even sortal predicates may in certain cases not be existence-entailing, namely in the case of individuals whose influence endures beyond their life span or whose achievements are meant to endure. Thus if A and B are two people that lived in the past, (1a) is acceptable in the present tense if A was a philosopher whose work is still known. By contrast, (1b) is not likely to be acceptable, unless B, let us say, initiated a tradition or created a lasting recipe:

- 1. (a) A is a philosopher.
- (b) B is a baker.

Not only *there*-sentences may range over nonexistent (past or possible) objects, also quantificational NPs by themselves can, provided they are modified by the same sorts of modifiers:

19. (a) Some buildings John could have built will never exist.  
 (b) Some houses built in the eighteenth century do not exist anymore.

The semantics of intensional modifiers of existence-entailing nouns is straightforward: they act as modal operators in the definition of the property expressed by the complex nominal, as in (20):

20.  $\lambda x[\diamond \text{building}(x)]$

The relative-clause constructions in (18a,b; 19a,b) require, as in the case of intentional verbs, that the head noun be interpreted in the lower position inside the relative clause. This permits the noun to be interpreted in the scope of the modal or temporal operator, as below:

21. (a) [that John could have built *e* buildings]  
 (b)  $\lambda x[\diamond(\text{building}(x) \ \& \ \text{build}(\text{John}, x))]$

There are various syntactic criteria for when a relative clause will involve an internal head and when not (Carlson [2]). One of those criteria is the impossibility of stacking of relative clauses. More precisely, the same type of relative clause, with the same head-internal interpretation, cannot be stacked. The example below, which does not sound very good, illustrates the constraint:

22. ?? the buildings that I could have built that could have been financed

Example (22) contrasts with the examples below, which are fine:

23. (a) the buildings that I could have built that never came into existence  
 (b) the buildings that were built in the eighteenth century that do not exist anymore

The reason for the acceptability of (23a) and (23b) is straightforward. In these examples, the second relative clause, on a head-external interpretation, simply expresses a restriction on the set specified by the first relative clause. By contrast, a head-external interpretation of the second relative clause in (22) is impossible for semantic reasons, and a head-internal interpretation is unavailable for syntactic reasons: the head of the entire construction is already used for the head-internal interpretation of the first relative clause.

### 8.3 Intentional Verbs and Intensional Verbs

The complements of intentional verbs share some similarities with the complement of intensional transitive verbs, such as *need* and *look for*, in particular a lack of specificity and the lack of a requirement that the complement stand for an actual

objects in order for the sentence to be true or false. However, intensional verbs need to be sharply distinguished from intentional verbs.<sup>17</sup> The complement of intentional verbs behaves just like an ordinary referential or quantificational NP, though it sets up a ‘new’ domain of intentional objects, objects that depend just on the intentional act described by the verb. By contrast, the complement of intensional transitive verbs, on all of the existing analyses, contributes a semantic value of a different type from that of the complement of an intentional or extensional verb. On one view, the complement contributes a quantifier (Montague [22], Moltmann [15], [19, ch. 5]), on another a property (Zimmermann [37]).

### 8.3.1 *Nonspecificity and Underspecification*

One criterion for intensional verbs is nonspecificity. For a subclass of intensional verbs, that of verbs of absence such as *need* or *look for*, the relevant notion of nonspecificity manifests itself in the possibility of adding ‘any will do’ to the sentence (Moltmann [15, 17], Zimmermann [38])<sup>18</sup>:

24. John needs a horse, any will do.

The nonspecificity of the complement of intensional verbs needs to be sharply distinguished from the indeterminateness of intentional objects as arguments of intentional verbs. The indeterminateness of intentional objects consists in their underspecification with respect to properties, whereas the nonspecific reading of intensional verbs like *need* has to do with the semantic type of their complement, as an intensional quantifier or a property. This also means that quantificational complements such as *at least two* N display the very same nonspecific reading:

25. John needs at least two assistants.

*Need* is a modal verb of absence, and the semantic contribution of the complement is best understood by paraphrasing (25) as ‘For any minimal situation *s* satisfying John’s needs, there are at least two assistants John has in *s*’ (Moltmann [15, 17], [19, ch. 5]).

There are other intensional verbs besides modal verbs of absence that take quantificational complements, but to which the ‘any will do’-test will not apply. They include *owe*, *buy*, *sell*, *recognize*, and *find* (Moltmann [15], Zimmermann [38]).

Some intensional verbs may be intentional verbs at the same time. The psychological verb *want* is an example. *Want* can clearly take intentional objects as arguments in examples like (26), assuming that the book does not describe an actual house:

<sup>17</sup>The distinction is often ignored both in the philosophical and in the linguistic literature.

<sup>18</sup>For arguments that nonspecificity, rather than failure of substitutivity or existential quantification, is characteristic of intensional transitive verbs see Moltmann [15] and Zimmermann [38].

26. John wants the house described in the book.

But *want* also takes quantificational complements with the relevant nonspecific reading:

27. John wants at least three assistants, any will do.

*Want* thus is polysemous: it has an interpretation as an intensional verb, involving a property or intensional quantifier, and as an intentional verb, taking an intentional object as its argument.

### 8.3.2 *The Choice of Neutral Proforms*

Besides nonspecificity, there are two other linguistic characteristics of intensional verbs that distinguish them from extensional and intentional ones (Moltmann [15]). First, intensional verbs generally require impersonal proforms, regardless of the gender and content of the NP they replace:

28. John needs something/?/? someone, namely an assistant.

29. (a) There is something/?/? someone John needs, namely an assistant who speaks French.

(b) There is something John made reference to, namely a person who speaks French fluently.

By contrast, intentional verbs generally go with proforms that match the features of the NP they replace:

30. John mentioned someone/? something, a woman (in fact, a woman that does not exist).

A related difference between the two sorts of verbs consists in the ‘identity conditions’ concerning what is shared by two occurrences of intensional or intentional verbs. Two distinct occurrences of intensional verbs share the same object (‘the same thing’) in case they would involve the same property or quantifier:

31. John needs an assistant and Mary needs an assistant, and thus John and Mary need the same thing.

32. (a) John needs the same thing as Bill, namely an assistant that speaks French.

(b) John is looking for the same thing as Bill, a house with a garden.

By contrast, for two occurrences of intentional verbs to share the same object, they either need to share actual objects as arguments or else the intentional acts they describe need to be coordinated and thus yield the same intentional object, as illustrated by the two readings of the sentences below:

33. (a) John and Mary mentioned the same book.

(b) John and Mary were thinking about the same woman.

The proforms that can take the position of NP-complements of transitive intensional verbs belong to a particular class of *special quantifiers*, which include *everything*, *nothing*, *the same thing*, but also the proform *that* and the relative pronoun *what*. On a common view, such quantifiers range over higher-order semantic objects, intensional quantifiers or properties (Moltmann [15], Zimmermann [37]). On an alternative view, the Nominalization Theory developed in Moltmann [16, 17], [19, ch. 5], special quantifiers are *nominalizing quantifiers* that introduce ‘new’ entities into the semantic structure of the sentence, entities that could also be the semantic values of corresponding nominalizations. According to that view, what is shared in (31) is ‘the need for an assistant and what is shared in (32b) is ‘the search for a house with a garden’.

Special quantifiers and the associated identity conditions are characteristic of intensional verbs, but not intentional verbs. The identity conditions associated with intentional verbs crucially involve the coordination of intentional acts: no two intentional objects may be ‘the same N’ that depend on different, uncoordinated acts. Thus, an argument such as the following is invalid, in a circumstance in which the women John and Bill mentioned do not exist and John’s and Bill’s acts of mentioning are not coordinated:

34. John mentioned a woman with red hair.  
     Bill mentioned a woman with red hair.  
     John and Bill mentioned the same woman.

The same holds for predicates describing nonlinguistic intentional acts, such as acts of imagination or (nonveridical) perception. Thus the inferences below are invalid if John’s and Bill’s imaginations and perceptions are not coordinated:

35. John imagined a woman with blue hair.  
     Bill imagined a woman with blue hair.  
     John and Bill imagined the same woman.

36. John saw a red spot.  
     Bill saw a red spot.  
     John saw the same spot as Bill.

If instead of *the same N* special quantifiers or pronouns occur in the conclusion, the arguments become valid, as when replacing the conclusions in (34)–(36) by (37a), (37b), and (37c) respectively<sup>19</sup>:

37. (a) John mentioned what Bill mentioned (a woman with red hair).

<sup>19</sup>The same contrast can be observed with verbs of creation, which themselves are in fact intensional verbs (Moltmann [15]):

- (i) (a) John is writing a poem. Mary is writing the same thing.  
     (b) John is writing a poem. ?? Mary is writing the same poem.

(ib) has only a reading on which John’s literary creation miraculously coincides exactly with that of Mary, which is not something implied by (ia).

- (b) John imagined the same thing as Bill (a woman with blue hair).
- (c) John saw the same thing as Bill (a red spot).

But what (37a,b,c) report is the sharing of a type of object, not a single intentional object. The reason why special quantifiers and pronouns are tolerated in (37) is that the intentional verbs are interpreted as intensional verbs. Such a reinterpretation is available for at least some intentional verbs, by a form of ‘type-shifting’. Just as Montague Grammar allows extensional verbs to be ‘type-shifted’ to intensional verbs, intentional verbs can be ‘type-shifted’ to intensional ones, as roughly below (adopting, for the sake of simplicity, the view that intensional verbs take properties as arguments):

38. For an intentional verb  $V$ , an event  $e$ , an object  $x$ , a property  $P$ , and an intentional object  $y$ ,  $V_{intens}(e, x, P)$  iff  $V(e, x, y)$ , where for some event  $e'$  coordinated with  $e$ ,  $e'$  attributes  $P$  to  $y$ .

The same difference in identity conditions displayed by *the same N* and *the same thing* are displayed by two types of anaphoric pronouns. Anaphoric *that* classifies with *the same thing* whereas *it* classifies with *the same N*. *That* cares about the identity of a type, whereas *it* requires the identity of an intentional object. This is why (39a) and (40a) below are acceptable, whereas (39b) and (40b) are not, on a natural reading on which the mental states described are not coordinated:

- 39. (a) John imagined a circle. Mary imagined that too.
- (b) John imagined a circle. ?? Mary imagined it too.
- 40. (a) John wants a nice book. Mary wants that too.
- (b) John wants a nice book. ?? Mary wants it too.

The second sentence in (40b) is unacceptable unless there is a particular book, existent or intentional, that both John and Mary want.

### 8.3.3 *The Semantics of Special Quantifiers with Intensional Verbs*

On the ‘Nominalization Theory’, special quantifiers have a ‘nominalizing’ function, ranging over entities that would be semantic values of a corresponding nominalization. Thus, *what Mary needs* below would stand for ‘the need for a house’, which is said to be something John shares with Mary:

41. John needs what Mary needs, a house

Part of the motivation for the Nominalization Theory comes from the predicates that can apply to special quantifiers. Such predicates generally cannot be understood as predicates of higher-order semantic objects such as intensional quantifiers or properties. For example, in (42a,b) *count* and *unusual* can hardly be understood as predicates of semantic objects such as quantifiers or properties:

42. (a) John counted what he needs.  
 (b) John needs something unusual.

Rather *count* and *unusual* in (42a,b) apply to entities of the sort of John's needs.

Whereas (42a,b) involves quantification over particular entities of the sort 'John's needs', (41) involves quantification over kinds, entities of the sort 'the need for a house' (which has both 'John's need for a house' and 'Mary's need for a house' as instances).

There are cases which at first sight present problems for the Nominalization Theory, namely acceptable examples such as those below (Moltmann [17], [19, ch. 5]):

43. Mary has what she needs, a house.

Such cases however, are not a counterexamples to the Nominalization Theory, but simply require a modification of it. What is special about (43) is that the situation described in the main clause, Mary owning a house, is a situation satisfying her need. *What she needs* in (43) does not stand for Mary's need, but rather for the satisfier of Mary's need's, or rather a variable satisfier of her need. (Moltmann [19, ch. 5]). A variable satisfier of a need is a variable object that has manifestations as ordinary objects in different circumstances and may lack a manifestation in the actual circumstances. In general, special quantifiers and pronouns with transitive intensional verbs stand for such variable objects, rather than what the nominalizations of the verbs would stand for, entities like needs.

### 8.3.4 *Relative Clause Constructions with Intensional and with Intentional Verbs*

NPs formed with relative clauses with intensional verbs and with intentional verbs form referential NPs, NPs that are arguments of ordinary predicates and that can act as antecedents of anaphora, as below:

44. (a) The woman John described is American. She is fluent in French and German.  
 (b) The assistant John needs must speak French. He should also be fluent in English.

Whether or not the woman John described exists does not bear on the acceptability of (44a), and John's not having an actual assistant does not bear on the acceptability of (44b). NPs modified by relative clauses with intentional verbs and with intensional verbs differ, though, in what they stand for. There are two semantic reflections of that.

First of all, it is reflected in the applicability of the predicate *exist*. NPs with intentional verbs can stand for intentional objects of which *exist* is false, as in (45a), but those with intensional verbs cannot, as seen in (45b):

45. (a) There is a book John mentioned that does not exist.  
 (b) ?? There is an assistant John needs that does not exist.

(45b) is acceptable only on a reading on which the indefinite characterizes a type of object, rather than a particular actual or intentional object—unless of course the verb has in fact the extensional rather than the intensional reading. (45b) contrast with (45c) with a psychological verb of absence, which better tolerates *exist*:

- (c) There is a book John wants that does not exist.

Similarly, (46b) is not really worse than (46a):

46. (a) There is a woman John is thinking about that does not exist.  
 (b) There is a woman John is looking for that does not exist.

The reason is that psychological verbs generally have a variant as intentional verbs, leading to a domain of intentional objects.

There is another semantic difference between NPs with intentional verbs and with intensional verbs. Definite NPs modified by a relative clause with an intensional verb generally are subject to the Modal Compatibility Requirement, the obligatory presence of a modal in the main clause (Moltmann [18, 21])<sup>20</sup>:

47. (a) The assistant John needs must speak/may speak/??? speaks English.  
 (b) The woman John is looking for must be/may be/??? is tall and blond.

By contrast, definite descriptions with a relative clause containing an intentional verb are subject to no such requirement:

48. (a) The woman John is dreaming about is tall and blond.  
 (b) The building John described is made almost entirely of glass.

While definite NPs modified by relative clauses with intentional verbs describe intentional objects, definite NPs with intensional verbs describe *variable objects* of a certain sort (Moltmann [18], [19, ch. 5], [21]). Variable objects are entities that have different manifestations as ordinary objects in different circumstance and may lack a manifestation in the actual circumstance. For example, ‘the president of the US’ viewed as a variable object will be an entity that has as its manifestation at a time and a world whoever is president of the US at that time in that world. ‘The assistant John needs’ viewed as a variable object is a *variable satisfier* of ‘John’s need’, which means it is a variable object that has manifestations in exactly those situations (exactly) satisfying John’s need and that has as its manifestation in a situation exactly satisfying John’s need the assistant that John ‘has’ in that situation (which means that John stands in a contextually relevant relation *R* to):

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<sup>20</sup>The Modal Compatibility Requirement has been noted first for the related construction *the gifted mathematician John claims to be* by Grosu and Krifka [8]. See also Moltmann [21].

49. [*the assistant John needs e*] = the variable object *o* such that *o* has manifestations in exactly those situations *s* such that for some *e*, *need*(*e*, John), *s* (exactly) satisfies *e*, and for some *e*, *need*(*e*, John), for any situation *s* satisfying *e*, *manif*(*o*, *s*) =  $\iota x[\text{assistant}_s(x) \ \& \ R_s(x, \text{John})]$ , for a relevant contextually given relation *R*.

The modal is required because it allows accessing nonactual manifestations of the variable object for the purpose of applying the predicate, by the condition below (Moltmann [18]):

50. A variable object has a (circumstance-relative) property *P* in a circumstance *s* iff if the manifestation of *o* in *s* has *P* in *s* ( $P_s(\text{manif}(o, s))$ )

(50) is a general condition on applying a property to variable objects.

## 8.4 Actual Objects Acting as Intentional Objects?

The present account sharply distinguishes between intentional objects and actual objects as denotations of the complements of intentional verbs. There are examples, however, where actual objects appear to qualify as intentional objects:

51. (a) John now lives in the house he had dreamt of.  
 (b) John finally bought the house he had always longed for.  
 (c) John now owns the car he had always been fantasizing about.

(51a) suggests that the actual house John lives in qualifies as the house John dreamt of, which means that the latter is in fact an actual object (though of course, John did not dream of all the aspects of the house he now lives in). This would mean that at the time of his dreaming John's dream is directed toward an actual object not an intentional one, unbeknownst to him. But this is not plausible: a different house than the one John lives in could have fulfilled John's dreams just as well. There are constraints on when actual objects may qualify as the objects of thought or imagination: there needs to be a causal connection to the intentional act or state; having certain properties is not enough. The examples in (51) in fact turn out to be special. In many cases, an actual object meeting the conditions on the object of thought does not make the construction in question acceptable:

52. (a) ?? Yesterday John saw the castle he had imagined.  
 (b) ?? John noticed the car he had always been fantasizing about.  
 (c) ?? John now lives in the house Mary once thought about.

Problematic are also cases where there are in fact several actual objects that meet the conditions on the object of thought, for example (53), in a context in which John dreamt of a 'generic' castle and then saw several that match the one he had dreamt of:

53. ?? John saw several castles he had dreamt of.

The reason for the acceptability of (51a–c) thus cannot be an actual object meeting the conditions on an object of thought. In (51a), the main clause describes an actual situation that satisfies John's dream, which is not just directed toward an object: John's dream is not just a dream about a house, but a dream about a house to live in. On the shared reading, the complement of *dream* does not in fact describe an intentional object, but rather it acts as the complement of an intensional verb, specifying a variable satisfier of the event of dreaming. That is, *the house John had dreamt of* stands for a variable object that in each situation satisfying John's dreams has a manifestation that is a house John lives in. Intensional verbs of absence can share their 'object' with extensional verbs in case the intensional verb describes a situation that is a satisfaction situation for the intensional verb as in the case of (43) repeated below:

54. Mary has what she needs, namely a house.

In such case a case, more precisely, the extensional and the intensional share a variable satisfier. This means that the acceptability of (51a–c) is due to an intensional interpretation or rather reinterpretation of the intentional verb.

## 8.5 Generic and Intentional Objects

There are certain predicates that take objects similar to intentional objects, but that in fact should be viewed as generic objects rather than intentional objects. These are predicates of comparison, which include verbs of resemblance as well as comparatives.

The arguments of those predicates are generally given by indefinites:

55. (a) This animal resembles a unicorn.

Predicates of comparison, on the intensional reading, do not permit quantificational complements:

(b) This animal resembles at least one unicorn.

Predicates of comparison differ in that respect from intensional verbs of absence, such as *need*, which allow for quantificational complements.

Predicates of comparison may also take as arguments intentional objects, introduced by intentional verbs:

56. (a) Mary resembles the woman John talked about.

(b) Mary is more intelligent than the woman the novel describes.

(c) The building is taller than the building John had described.

In fact, intentional objects can fill the two argument positions of a comparative, just like generic objects<sup>21</sup>:

57. (a) The woman John described is more attractive than the woman Bill described.  
 (b) A unicorn is smaller than a dragon.

The indefinite complements of predicates of comparison do not seem to have a predicative function. More plausibly, they stand for generic objects, just as plausibly in (58):

58. (a) the example of a unicorn  
 (b) the description of a unicorn

Like intentional objects, there is nothing more to generic objects than their partial qualitative nature. Unlike intentional objects, however, generic objects are intuitively not ‘nonexistent’ objects. Rather they appear to be neutral as to existence or nonexistence: the existence predicate seems neither true nor false of them:

59. (a) ?? Charlie resembles a unicorn, which does not exist.  
 (b) ?? Charlie resembles a pony, which exists.  
 (c) Charlie resembles the man Bill described who does not exist.

Instead of being existent or nonexistent, generic objects are instantiated, exemplified, or manifested in particular objects. Comparative predicates, it appears, are able to apply to entities on the basis of their qualitative specification only, regardless of their existential status.

It is interesting to note that intentional verbs can also take generic objects, as on a generic reading of the verbal complement in (60a,b):

60. (a) When asked about examples of mythical beasts, John mentioned a unicorn.  
 (b) John described a unicorn.

Intentional verbs such as *imagine* naturally take generic objects as arguments, allowing for co-predication with a predicate of comparison:

61. Charlie resembles the animal John imagined.

Such generic objects need to be sharply distinguished from intentional objects. If an existence predicate is applied to a generic object, it can state only the existence of a particular instance, not the existence of the generic object as such:

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<sup>21</sup>The acceptability of (57b) is quite surprising in fact, since the positive would not allow for a singular generic indefinite, as is familiar from the linguistic literature on generics:

- (i) ?? A unicorn is small.

The difference obtains whether or not the NPs range over existent or nonexistent objects. Thus, it also obtains for the examples below:

- (ii) (a) A mouse is smaller than an elephant.  
 (b) ?? A mouse is small.

I do not know of an explanation of this difference.

62. The animal John imagined exists: there are ponies.

Predicates of comparison take generic objects for just the same reason, it appears, that they take intentional objects: they care about the properties of objects only, not whether or not the objects exist.

## 8.6 Negative Existentials

Negative existentials with descriptions of intentional objects based on intentional verbs have hardly received attention in the philosophical literature. The more familiar negative existentials involve a proper name or ordinary definite description in subject position:

63. (a) The king of France does not exist.  
 (b) Vulcan does not exist.

Such negative existentials arguably involve intentional objects as well. In fact, McGinn [11] argued that apparently empty terms in negative existentials stand for intentional, nonexistent objects, in roughly the present sense, as entity constituted by failed intentionality. Obviously in that context, intentional objects would not depend on a described intentional act or state. Rather, they would depend on a contextually given quasi-referential act. Thus in (63a), the subject presumably relates to a pretend act of reference, or better a simulated unsuccessful act of reference, by a recent or contemporary philosopher; in (63b) the subject presumably relates to an attempted act of reference on the part of astrophysicists in the past. More precisely, the utterance of the subject will be a pretend act of reference coordinated with a contextually given quasi-referential act involving the same name or description.

There is a range of evidence (not considered by McGinn) that the subject of a negative existential stands for an intentional object, an object dependent on a quasi-referential act. First, not any ordinary definite description is acceptable as the subject of a negative existential. The definite descriptions in the following examples are appropriate only insofar as their use is coordinated with a relevant previous quasi-referential use of the same description<sup>22</sup>:

64. (a) Mary's child does not exist.  
 (b) The tree in the garden does not exist.

(64a) cannot just be used to state that Mary does not have a child and (64b) cannot be used to state that the garden does not have a tree. Rather someone must have tried to refer to Mary's child or the tree in the garden before.

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<sup>22</sup>The philosophical literature also discusses the following sentence:

- (i) The largest natural number does not exist.

This sentence seems to me to be subject to the same condition involving a previous quasi-referential act, pace Russell's [25] account of definite descriptions acting as quantifiers in such sentences.

Furthermore, not just any name that fails to have a referent can act as the subject of a negative existential. Newly created names cannot act in that function, and neither can names whose use does not relate to a preceding quasi-referential act. For example, an expression that could be a proper name, but has not been used as such, let's say *Barkab*, cannot felicitously occur in the subject position of a negative existential:

65. ??? Barkab does not exist.

Such intuitions are unaccounted for on a view on which the subject of negative existentials such as (64a,b) is empty and negation is understood as external negation (Salmon [27, 28]), unless it is supplemented by conditions on previous name-using practices (Sainsbury [26]) (this, though, would not carry over to definite descriptions).

The view that the subject of a true negative existential stands for an intentional object also accounts for the intuition that with non-referring singular terms negative existentials are false rather than just not true: *the golden mountain exists* is simply false, rather than neither true nor false, unlike a sentence such as *the present king of France is bald*, where there is a good intuition that the sentence is truth-valueless.

In addition, Salmon's view that negation in negative existentials is external negation is problematic. On that view, *not* in a negative existential would be the same kind of negation as in (66), which is naturally followed by a *because*-clause:

66. The king of France is not bald, because there is no king of France.

But (66) involves a particular intonation, namely a focus on *not*, rather than, as with ordinary negation, the predicate. By contrast, in a sentence with *exist* it is the predicate that is focused. That is, negative existentials do not appear to be cases of 'metalinguistic negation' in the sense of Horn [10]. Another problem for the view that negation in negative existentials is external is that negation as 'external negation' should be negation taking wide scope over the subject. However, with a quantificational subject, no wide-scope can be attested, unless *not* is strongly focused:

67. (a) Every one we talked about does not exist.

(b) At least two people we talked about do not exist.

The treatment of negation as external negation also has difficulties with the sentence below:

68. Every one we talked about except Anna Karenina exists.

*Except* also involves negation, but negation here could hardly end up as external negation in the logical form of the sentence.

Thus, the subject of a negative existential does not appear to have a special semantics, involving an empty denotation that triggers an external interpretation

of negation. Rather it is on a par semantically with referential NPs, and negation in negative existentials is just ordinary negation.<sup>23</sup>

Turning to the semantics of negative existentials, the entire subject NP will be coindexed with a quasi-referential act given by the linguistic or nonlinguistic context. For proper names, I will, for the present purposes, make the same assumption as for common nouns when used to possibly describe intentional objects: proper names have a two-place variant with an additional event argument place for an act of attribution. Simplifying, the interpretation of a proper name coindexed with a contextually given quasi-referential act will then be as below:

69. (a) [*Anna Karenina*<sub>*i*</sub>]<sup>*e<sub>i</sub>*</sup> =  $\iota x[x = f(e_i) \ \& \ Anna \ Karenina(x, e_i)]$

That is, the referent of the name *Anna Karenina*, co-indexed with some event *e* is the intentional object projected from *e* that involves the attribution of the name in an act coordinated with *e*.

Similarly, a definite description coindexed with a quasi-referential act given by the context will be interpreted as follows:

(b) [*the king of France*<sub>*i*</sub>]<sup>*e<sub>i</sub>*</sup> =  $\iota x[x = f(e_i) \ \& \ king \ of \ France(x, e_i)]$

That is, the referent of *the king of France* coindexed with an intentional event *e* stands for the intentional object dependent on *e*, which is coordinated with an act of the attribution of the property of being king of France.

One question that arises with negative existentials is, why could the subject not stand for a fictional character, so that (63a,b) would in fact come out false? Fictional characters obviously can be referents of terms making explicit reference to them such as *the fictional character Anna Karenina*. The question then is, under what circumstances can ‘nonreferring’ names and descriptions stand for fictional characters, rather than intentional objects? I will restrict myself to just a few observations and generalizations. First of all, there clearly are contexts in which empty names and definite descriptions can stand for fictional characters rather than intentional objects<sup>24</sup>:

70. (a) *Anna Karenina* was created by Tolstoy.

(b) *Anna Karenina* serves as a model for an unhappily married, intelligent woman.

<sup>23</sup>Another option one might think of would be to take *the king of France* to stand for a merely possible object and say that it does not exist. But see Kripke [5] for a critique of that view.

<sup>24</sup>Another apparent case of reference to a fictional character is (i) below:

(i) *Anna Karenina* is an interesting fictional character.

However, *fictional character* has a ‘reifying’ function in this context, mapping a presentation of a name (a non-referential use of the name) onto a fictional character of which *interesting* is then predicated. It is the same function that *fictional character* has in *the fictional character Anna Karenina*, where it guarantees reference to a fictional character on the basis of a non-referential use of the name *Anna Karenina*. See Moltmann [19, ch. 6], for a discussion of the reifying function of certain sortals in predicate position.

In negative existentials, as in (63a, b) and below, an empty name or definite description cannot refer to a fictional character:

71. Anna Karenina does not exist.

It is impossible to get a reading of (71a) on which the sentence come out false.<sup>25</sup> This is in contrast to a negative existential with a subject making explicit reference to a fictional character:

72. The fictional character Anna Karenina does not exist.

The reason why the subject in (71) and (63a, b) *has* to stand for an intentional object and cannot stand for fictional characters may be the following. A term can stand for an intentional object in only those contexts in which it could have been used to refer in the ordinary way (as in the case of *exist*), and it can be used to refer to a fictional character only in those contexts that exclude ordinary reference (as in the case of the verb *create*).

## 8.7 Restrictions on Predication of Intentional Objects

Only certain predicates, we have seen, can be predicated of intentional objects, such as intentional verbs and (negated) existence predicates, as well as predicates of evaluation and comparison. To this generalization the observation needs to be added that when a subject stands for an intentional object, then any sort of predicate can follow:

73. (a) The person John described is a woman who knows many people.  
 (b) The woman the book is about is someone that likes everyone.

The restriction to the subjects is crucial, though, for applying an ordinary predicate. The sentences below are impossible if there is no actual woman the book is about:

74. (a) Many people know the woman the book is about.  
 (b) Everyone met the woman the book is about.

The restriction to subjects indicates that for ordinary properties to be predicated of intentional objects, the intentional act on which the intentional object depends needs to be accessible for the predicate to be predicated of the intentional object. Given standard syntactic views, the intentional act involved in the interpretation of the subject is accessible for the predicate (the subject c-commands the predicate), but not so for the intentional act involved in the interpretation of the object (the

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<sup>25</sup>See Thomasson [30]. In some of the literature, the intuition is not quite recognized as such, for example in Salmon [27].

object does not c-command the predicate). Let us first take the case of proper names in subject position as in (75a):

75. (a) Anna Karenina is a woman.  
 (b) [Anna Karenina]<sup>i</sup> is [a woman]<sub>i</sub><sup>i</sup>  
 (c) woman( $\iota x[x = f(e_i) \ \& \ Anna \ Karenina(x, e_i)]$ ,  $e_i$ )

The syntactic configuration of (75a) allows sharing of an index of the subject and the predicate, as in (75b), which can be interpreted as the relativization of the interpretation of the subject and the predicate to the same contextually given intentional act as roughly in (75c).

Definite descriptions with intentional verbs as in (73a,b) are more difficult to handle. On the analysis employed so far, the intentional act on which the intentional object depends is introduced by an existential quantifier inside the definite description operator. In order for that event to be accessible for the interpretation of the predicate, the existential quantifier would have to be understood dynamically, allowing it to bind variables outside its scope. Note that an ordinary predicate when predicated of an intentional object may at the same time combine with a negative existential:

76. The person the book is about is a woman that does not exist.

This means that not all of the predicate will be interpreted relative to the intentional act on which the subject depends, namely not the relative clause.

## 8.8 Conclusions

This paper has argued that transitive intentional verbs go along with a special semantic interpretation of their complement, involving intentional objects in a particular, event-dependent sense. This semantics is quite different from the semantics of the complement of transitive intensional verbs, which has long been recognized as being special. The difference in semantic interpretation of constructions with intentional and with intensional verbs accounts for a range of linguistic differences, in particular with quantificational complements.

Intentional objects, I have argued, do play a role in the semantic structure of natural language and are reflected in particular linguistic constructions. But the role of intentional objects is strictly limited: intentional objects in general can be made available only by the presence, in the semantic structure of the sentence, of intentional acts on which the intentional objects depend. This view of the involvement of intentional objects in the semantics of natural language is thus significantly different from the standard Meinongian view, whose ontology is much harder to accept.

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