The Semantics of Intensional Transitive Verbs in *Towards Non-Being**

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Abstract

In this paper, I point out the problems of the semantics of intensional transitive verbs (e.g.,"seek," "worship," and "imagine") proposed by Graham Priest in his book *Towards Non-Being* (TNB). On the basis of noneism, a version of Meinongian theory of nonexistent objects, TNB basically takes an intensional transitive as representing a relation between an ordinary individual object and a (possibly) *non*existent one; for example, in the sentence "Homer worshiped Zeus," the verb "worship" represents a first-order relation that holds between Homer and Zeus, which is a nonexistent object. However, TNB's semantics also involves some complications. In particular, to accommodate several puzzling cases, including those of "existence-entailing" predicates and of "indeterminate" readings of intensional transitives, Priest incorporates intentional operators, which represent propositional attitudes, into the semantic analysis of intensional transitives. The purpose of this paper is to show that these additional complications, together with TNB's semantics for intentional operators, conflict with certain inferential behaviors of intensional transitive verbs. Further I argue that these inferential behaviors and the fact that the complications in TNB make it difficult to explain them indicate the difficulty of analyzing intensional transitives by means of propositional attitudes, and tell in favor of a simple analysis that does not appeal to propositional attitudes. A Meinongian way of developing such an analysis is briefly considered in this paper. Focusing on the verb "seek", this paper gives an analysis which appeals to the distinction between complete and incomplete objects and the distinction between two kinds of seeking activities.

Keywords: intensional transitive verbs, nonexistent objects, Meinongianism, noneism, proposional attitudes

1 Introduction: a relational analysis of intensional transitives

It is well-known that an NP in the object position of a transitive verb like "seek," "want," "worship," or "imagine" lacks existential commitment, as can be seen in the examples below.

* *CAP* Vol. 6 (2014-2015) pp. 1-15. submitted: 2013.1.31 accepted: 2014.11.21 category: original article published 2014.12.5

(1) a. John imagines Holmes.
b. John seeks a unicorn.

In the above sentences, the truth of (1a) does not entail the existence of Holmes, and the truth of (1b) does not entail the existence of a unicorn. Transitive verbs of this kind are often called intensional transitive verbs, or, more simply, intensional transitives.*1

In *Towards Non-Being* (TNB, in what follows), Graham Priest proposes a semantic analysis of intensional transitives on the basis of *noneism*, a version of Meinongian theory of *non*existent objects.*2 According to noneism, some objects do not exist, but their lack of existence does *not* prevent them from having properties; for example, Sherlock Holmes does not exist, but he has many properties like *being a detective* or *being clever*. TNB (indeed, other works on contemporary Meinongian theories as well) formalizes this basic idea of Meinongianism by treating quantification in an anti-Quinian way; quantifiers range over both existent and nonexistent objects, and thus, being a value of a bound variable is not equal to being existent. In this sense, quantifiers are existence-neutral. Further, an individual constant can refer to a nonexistent object. The existence of an object is expressed by a first-order existence predicate. TNB uses "$\mathfrak{S}$" as a particular quantifier and "$\mathfrak{A}$" as a universal quantifier, both of which are existence-neutral, and "E" as the first-order existence predicate. We should thus carefully distinguish between, for example, (2a), which is formalized as (2b), and (3a), which is formalized as (3b); in particular, we should note that (2)s do *not* follow from (3)s.

(2) a. A unicorn exists.
b. $\mathfrak{S}x(unicorn'(x) \land Ex)$

(3) a. Something is a unicorn.
b. $\mathfrak{S}x(unicorn'(x))$

On the basis of noneism, Priest analyzes (4a) as (4b).

(4) a. Homer worshiped Zeus.
b. $worship'(h, z)$

In this analysis, worshipping is treated as a relation that holds between a subject (in this case Homer) and a possibly *non*existent object (in this case Zeus, a nonexistent god). Let us call this kind of analysis of intensional transitives a *relational analysis*. Since "Zeus" denotes a nonexistent object, the truth of (4a) does not entail the existence of the denotation of "Zeus." This

*1 In TNB, they are called intentional predicates.

*2 The term "noneism" was coined by Richard Routley. For his discussion and defense of noneism, see Routley (1980). Parsons (1980) and Zalta (1988) also give well-developed contemporary Meinongian theories of nonexistent objects.

relational analysis of intensional transitives is extended to cover sentences with quantificational NPs like (5a). On the basis of the relational analysis of "worship," TNB treats a quantificational NP in the object position of (5a) in an "extensional" manner, which is illustrated by (5b).

(5) a. Homer worshipped a god.
b. $\mathfrak{S}x(god'(x) \wedge worship'(h,x))$

As described above, "$\mathfrak{S}$" is a particular quantifier that ranges over both existent and nonexistent objects. This ensures that the truth of (5b) does not entail the existence of a god. Note that in this logical form as well, worshipping is treated as a first-order relation.

The analysis is simple thus far. However, TNB's semantics of intensional transitives involves some complications. In particular, to accommodate two puzzling cases—those of "existence-entailing" predicates and of "indeterminate" readings of intensional transitives—Priest incorporates *intentional operators*, which correspond to propositional attitude verbs like "believe (that)" or "know (that)," into the semantics of intensional transitives. The purpose of this paper is to show that these additional complications conflict with certain inferential behaviors of intensional transitive verbs (Section 3). I will further argue that these difficulties tell in favor of a simple, relational analysis of intensional transitives without intentional operators, and briefly sketch how to deal with two puzzling cases Priest mentions without appealing to intentional operators (Section 4). Before proceeding to them, in the next section, I review how and why Priest incorporates intentional operators into his semantics of intensional transitives. First, we take a brief look at TNB's semantics of intentional operators and its features that are important for the purpose of this paper (Section 2.1). Then, I review why two cases mentioned above are puzzling for a simple relational analysis of intensional transitives and how Priest tries to treat them by appealing to intentional operators (Section 2.2, 2.3).

2 Details of TNB's semantics of intensional transitives

2.1 The world semantics of intentional operators

In this section I briefly review TNB's semantics of intentional operators, which is based on *world semantics*.

Suppose that Ψ is an intentional operator, t is a term, and A is a wff. Then, $t\Psi A$ is a wff. Intuitively, an intentional operator corresponds to some attitude verb. For example, when "Ψ" is a formal representation of believing, "$t\Psi A$" means that a subject t believes that A. In what follows, I term a sentence of the form $t\Psi A$ an "intentional sentence."

The truth condition of an intentional sentence is given by world semantics *à la* Hintikka. An intentional sentence $t\Psi A$ is true at a world w iff A is true at every world that realizes everything

t Ψs (for example, t believes) at w. ($t\Psi$ functions as a kind of necessity operator with an accessibility relation defined relative to t and Ψ.)

A distinctive feature of TNB's semantics is that the domain of the quantificational phrase "every world" in the truth condition of an intentional sentence contains *open worlds*. These are worlds that behave in a highly anarchic way; in particular, they have at least the following two abnormal features. First, they need not be logically closed. For example, at some open world, $A \wedge B$ is true but A is not true. Second, at open worlds, an individual may have an "identity" different from what it has at the actual world. For example, since Hesperus *is* Phosphorus, they have the same identity at the actual world, but at some open world (such as a world that realizes all the beliefs of one who believes that Hesperus is *not* Phosphorus), they have different identities. I must emphasize that these features of open worlds, together with the definition of the truth condition of an intentional sentence, give TNB's semantics the following two properties. (For details on how these properties were determined, see chapters 1 and 2 of TNB.) First, intentional operators need *not* be closed under logical entailment. From the statement that $t\Psi A$ and A logically entails B, it does not follow that $t\Psi B$ in general. Second, the substitutivity of identicals (henceforth SI) within the scope of an intentional operator does *not* hold. From $t\Psi A(a)$ and $a = b$, it does not follow that $t\Psi A(b)$.

2.2 Existence-entailing predicates

The first complication mentioned above concerns what is called an "existence-entailing predicate" appearing in the object NP of an intensional transitive (cf. TNB, pp. 64-65). Roughly speaking, a predicate is existence-entailing if everything that satisfies it at the actual world must exist there. More precisely, an n-place predicate P is existence-entailing with respect to its i-th place iff the following holds: if $\langle q_1, ..., q_i, ..., q_n \rangle$ is in the extension of P at the actual world, then q_i must be in the extension of the first-order existential predicate E at the actual world. Now, consider (6a). With reference to the basic account described above, (6a) is formalized as (6b).

(6) a. John seeks a golden mountain.
b. $\mathfrak{S}x(gold'(x) \wedge mountain'(x) \wedge seek'(j, x))$

Suppose here that the predicates "gold" and "mountain," and their formal counterparts $gold'$ and $mountain'$, are existence-entailing. Then, the truth of (6b) at the actual world entails the truth of (7b), which is the logical form of (7a), that is, the existence of a golden mountain at the actual world.

(7) a. A golden mountain exists.
b. $\mathfrak{S}x(Ex \wedge gold'(x) \wedge mountain'(x))$

As this consequence is clearly absurd, TNB proposes analyzing (6a) as follows to avoid this consequence:

(8) $\mathfrak{S}x(j\Psi(gold'(x) \wedge mountain'(x)) \wedge seek'(j,x))$

where Ψ is an appropriate intentional operator, for example, "believe that." Intuitively, (8) says that John seeks something about which he believes that it is a golden mountain. In this logical form, $gold'$ and $mountain'$ appear within the scope of the intentional operator Ψ. As described above, in the semantics of TNB, an intentional sentence $t\Psi A$ is true at a world w iff A is true at every world that realizes everything t Ψs (in this case, t believes) at w. Now, worlds that realize everything t believes at the actual world need not include the actual world itself. This means that the truth of $\mathfrak{S}x(j\Psi(gold'(x) \wedge mountain'(x)))$ at the actual world does not entail that $\mathfrak{S}x(gold'(x) \wedge mountain'(x))$ holds at the actual world. Therefore, the truth of (8), the logical form of (6a), does not entail the existence of a golden mountain at the actual world, even if $gold'$ and $mountain'$ are existence-entailing.

2.3 Indeterminate readings

Some intensional transitives make sentences that can receive a special reading. For example, (9a) has a reading the truth of which is compatible with the truth of "John does not seek any particular hotel." This kind of reading is called an "indeterminate" reading in TNB.[*3] TNB analyzes this reading of (9a) as (9c), depending on a Quinean paraphrase of (9a) into (9b) (here "$a\Psi P$" is intended to mean that a tries to bring it about that P) (cf. TNB, pp. 65-67).

(9) a. John seeks a hotel.
b. John tries to bring it about that he finds a hotel.
c. $j\Psi\mathfrak{S}x(hotel'(x) \wedge find'(j,x))$
d. $\mathfrak{A}x(hotel'(x) \supset \neg j\Psi(find'(j,x)))$

(9c) is clearly compatible with (9d), which says that John does not seek any particular hotel (as is already mentioned, $\mathfrak{A}$ is a universal quantifier that ranges over both existent and nonexistent objects).

So far, I have reviewed the semantic treatment of intensional transitives in TNB. In the next section, I wish to point out some problems with this treatment. I suspect that incorporating intentional operators into a semantic analysis of intensional transitives in this way, together with TNB's semantics of intentional operators, leads to conflicts with regard to certain inferential behaviors of intensional transitives.

[*3] This kind of reading is often called a "nonspecific" reading. Quine (1956) calls it a "notional" reading.

3 Problems in TNB's semantics of intensional transitives

3.1 Opacity in the subject position

Consider the inference (10).

(10) John seeks a hotel, and John is Mary's father. Therefore, Mary's father seeks a hotel.

This inference seems valid even when the sentences "John seeks a hotel" and "Mary's father seeks a hotel" receive their indeterminate interpretations. According to TNB, the indeterminate reading of the former is formalized as (11a), and that of the latter, as (11b). Then, the inference in question is formalized as (11c). (For simplicity, I treat the definite description "Mary's father" as a name.)

(11) a. $j\Psi\mathfrak{S}x(hotel'(x) \wedge find'(j,x))$
b. $mf\Psi\mathfrak{S}x(hotel'(x) \wedge find'(mf,x))$
c. $\frac{j\Psi\mathfrak{S}x(hotel'(x)\wedge find'(j,x)),\ j=mf}{mf\Psi\mathfrak{S}x(hotel'(x)\wedge find'(mf,x))}$

However, in the semantics of intentional operators in TNB, the inference (11c) is *in*valid. As described in Section 2.1, the semantics of TNB *invalidate* SI within the scope of an intentional operator, implying that when a sentence receives its indeterminate interpretation, it is opaque with respect to its *subject* position. However, the validity of (10) on indeterminate readings shows that this is not the case.

To avoid opacity with respect to subject positions, one may analyze the indeterminate reading of "John seeks a hotel" as (12) (Priest, pers. comm.).

(12) $\mathfrak{S}y(y = j \wedge j\Psi\mathfrak{S}x(hotel'(x) \wedge find'(y,x)))$

An apparent problem of this proposal is that it seems to be unjustifiably complicated. Without any other reason than that it be a means of avoiding opacity with respect to subject position, this proposal seems *ad hoc*.

One might think that the following consideration gives some justification for this proposal. As described above, TNB's analysis of indeterminate readings is based on a paraphrase *à la* Quine. Note that the underlying paraphrase is the one that is illustrated by (13b) (=(9b)), rather than (13c).

(13) a. John seeks a hotel.
b. John tries to bring it about that he finds a hotel.
c. John tries to bring it about that John finds a hotel.

Now, we should note that (13b), into which the original sentence (13a) (=(9a)) is paraphrased, contains an anaphoric "he" in its intentional context. In this sense, (13b) differs from (13c), which has an occurrence of "John," rather than "he," in its intentional context. It is not so unnatural to think that their logical forms reflect this difference. (11a) may be suitable for (13c), but not for (13b), and therefore, not for (13a). Further, the complication in (12) might be justified from the following point of view: the construction $\mathfrak{S}y(y = j \wedge ...y...)$ might be the one to deal with the anaphoric "he" in (13b), which does not appear in (13c).

However, this proposal leads to a wrong prediction. Consider the following sentences.

(14) a. John tries to bring it about that Mary's father finds a hotel.
b. Mary's father tries to bring it about that Mary's father finds a hotel.
c. Mary's father tries to bring it about that he finds a hotel.
d. John tries to bring it about that he finds a hotel.

According to the present proposal, they are analyzed as follows.

(15) a. $j\Psi\mathfrak{S}x(hotel'(x) \wedge find'(mf, x))$
b. $mf\Psi\mathfrak{S}x(hotel'(x) \wedge find'(mf, x))$
c. $\mathfrak{S}y(y = mf \wedge mf\Psi\mathfrak{S}x(hotel'(x) \wedge find'(y, x)))$
d. $\mathfrak{S}y(y = j \wedge j\Psi\mathfrak{S}x(hotel'(x) \wedge find'(y, x)))$

Then, given that John is Mary's father, the semantics of TNB validates the inference from (14a) to (14b), from (14b) to (14c), from (14c) to (14d), and thus from (14a) to (13a). However, the inference from (14a) to (13a) is invalid. Indeed, we can imagine a context where (14a) is true but (13a) is false. Consider the following scenario: John is Mary's father but he doesn't know this fact. Somehow a man, who doesn't know the identity either, wrongly believes that Mary's father is looking for a hotel and tells John that Mary's father is looking for a hotel. John is busy and doesn't have time to seek a hotel by himself for Mary's father. However, John is kind enough to want to help Mary's father, so tells the man information about a reliable agent and asks him to pass the information to Mary's father. In this context, John tries to bring it about that Mary's father finds a hotel, but he doesn't seek a hotel.

3.2 Weakening inferences under indeterminate readings

Consider the inference (16).

(16) John seeks a hotel near the airport. Therefore, John seeks a hotel.

(16) is valid even when its premise and conclusion receive their indeterminate readings as well (cf. Forbes, 2006, Richard, 2001, Zimmerman, 2007). More generally, if an indefinite NP ϕ is

weaker than an indefinite NP ψ (that is, the extension of the latter is a subset of the one of the former), then the inference from a sentence of the form "s seeks ψ" to a sentence of the form "s seeks ϕ" seems valid when they receive their indeterminate readings.[*4] Following Forbes (2006), let us call an inference of this kind Weakening. In TNB's proposal, (16), a case of Weakening, is formalized as (17b), based on paraphrases like (17a).

(17) a. John tries to bring it about that he finds a hotel near the airport. Therefore, John tries to bring it about that he finds a hotel.

b. $\dfrac{j\Psi\mathfrak{S}x(\mathit{hotel}'(x)\wedge \mathit{near\text{-}the\text{-}airport}'(x)\wedge \mathit{find}'(j,x))}{j\Psi\mathfrak{S}x(\mathit{hotel}'(x)\wedge \mathit{find}'(j,x))}$

A problem is that (17b) is *in*valid. As we saw in Section 2.1, in the semantics of intentional operators in TNB, they need not be closed under logical entailment. Of course, this does not mean that no intentional operator is logically closed, but there is a reason to think that the intentional operator in question, Ψ (i.e., the phrase "try to bring it about that"), is not logically closed, as is explicitly noted in TNB (p. 66, n. 14). Suppose Ψ is logically closed. Then, the inference from (18a) to (19a) becomes valid because of the validity of the inference from (18b) to (19b).

(18) a. John tries to bring it about that he finds a hotel.

b. $j\Psi\mathfrak{S}x(\mathit{hotel}'(x) \wedge \mathit{find}'(j,x))$

(19) a. John tries to bring it about that something is a hotel.

b. $j\Psi\mathfrak{S}x(\mathit{hotel}'(x))$

This is clearly an undesirable consequence. Obviously, one can seek a hotel without trying to bring it about that something is a hotel. Therefore, Ψ does not seem to be logically closed.

One apparent way to avoid this difficulty is to deny the validity of the inference in question (Priest, pers. comm.). Suppose that John is in a muddle and denies that a hotel near the airport is a hotel. In this case, even if John agrees that he seeks a hotel near the airport, he may not agree that he seeks a hotel.

In my opinion, the possibility of such a situation does not establish the invalidity of the inference (16) on indeterminate readings. What it establishes, at most, is the invalidity of the following inference.

[*4] There is a significant exception; cases involving an disjunctive NP like "a dog or a cat." For instance, "Mary seeks a dog or a cat" has an indeterminate reading that does not follows from the indeterminate reading of "Mary seeks a dog," although " a dog or a cat" seems to be weaker than "a dog." How to treat this kind of reading of a sentence with an intensional transitive followed by a disjunctive NP is quite complicated matter, and we cannot take a closer look at it here. For some attempts to give semantics of them, see Forbes (2006) and Zimmermann (2007).

(20) John believes that he seeks a hotel near the airport. Therefore, John believes that he seeks a hotel.

The invalidity of (20) is quite compatible with the validity of the inference (16) on indeterminate readings, given that beliefs are not logically closed.

Finally, a similar problem can be pointed out with respect to the treatment of existence-entailing predicates in object NPs. Consider the inference (21a).

(21) a. John promises Mary a penny that Sherlock Holmes used. Therefore, John promises Mary a penny.

b. $$\frac{\mathfrak{S}x(j\Psi(\mathit{penny}'(x)\wedge \mathit{use}'(sh,x))\wedge \mathit{promise}'(j,m,x))}{\mathfrak{S}x(j\Psi(\mathit{penny}'(x))\wedge \mathit{promise}'(j,m,x))}$$

This inference seems valid when its premise and conclusion receive their determinate readings (that is, when both sentences receive a reading entailing that John promises Mary a *particular* (possibly nonexistent) penny). Now, suppose that *being a penny* and *using* are existence-entailing. Then, according to TNB's proposal described in Section 2.2, (21a) is formalized as (21b). However, (21b) does not hold, given that Ψ ("believe that" in this case) is not logically closed.

4 Back to a relational analysis of intensional transitives

So far, I have pointed out the difficulties of explaining several inferential behaviors of intensional transitives on the basis of TNB's semantics of them. It is worth emphasizing here that these difficulties do *not* stem from the Meinongian character of TNB's semantics, especially its relational analysis, according to which an intensional transitive (basically) represents a relation between two individual objects, one of which may be a nonexistent one. Rather, as we have seen, they stem from some conflicts between the inferential properties of intensional transitives and ones of intentional operators that are incorporated into the semantics of intensional transitives. What is crucial to the argument in Section 3.1 is the difference between an intensional transitive and an intentional operator with respect to the validity of the SI: on the one hand, the SI holds with respect to the subject position of an intensional transitive (that is, the position is transparent); on the other hand, it does not hold within the scope of an intentional operator (that is, it makes an opaque context). With respect to the examples in Section 3.2, a crucial point is this: as Weakening says, replacing the NP in the object position of a simple sentence whose main verb is an intensional transitive by a weaker NP is truth-preserving; on the other hand, replacement of an NP by a weaker NP within the scope of an intentional operator is not, because an intentional operator (at least, one that is relevant to the examples) is not logically closed.

Thus, at this point, we seem to have at least two options to deal with these difficulties. The first one is to revise the semantics of intentional operators so as to remove these logical properties from them. The second one is to analyze intensional transitives without incorporating intentional operators into the logical forms of (sentences containing) intensional transitives. In my opinion, the first option is inappropriate because the logical properties of intentional operators in question are *desirable* properties of them: a propositional-attitude report typically makes a context in which neither of the SI nor the logical closure holds. Indeed, the semantics of TNB is designed to establish these characteristics. One of the distinctive achievements of the semantics of TNB is that it gives a formal analysis of the *in*validity of these inferences in intentional contexts.

How about the second option? Specifically, on the basis of a Meinongian view of nonexistent objects, one may try to give a version of relational analysis of intensional transitives, illustrated by (22).

(22) a. John seeks a hotel near the airport.
b. $\mathfrak{S}x(\mathit{hotel}'(x) \wedge \mathit{near\text{-}the\text{-}airport}'(x) \wedge \mathit{seek}'(j, x))$

As we have seen in Section 1, the analysis of this type is a basic part of TNB's semantics of intensional transitives, but TNB eventually gives up this type of simple analysis and instead appeals to intentional operators with respect to cases involving existence-entailing predicates and cases of indeterminate readings. However, *at least for Meinongians*, it seems worthwhile to attempt to explain these cases in terms of the relational analysis of intensional transitives, for the following two reasons.

First, the inferential behaviors of intensional transitives we have discussed are immediately explained if we can explain cases involving existence-entailing predicates and cases of indeterminate readings while retaining the relational analysis of intensional transitives. In (22b), no intentional operator appears and the expression in the subject position appears in an extensional context. There is thus nothing to block the SI in the subject position. Furthermore, on the basis of these logical forms, the validity of Weakening in the case of indeterminate readings discussed in Section 3.2 is explained in exactly the same way as the validity of Weakening in the case of determinate readings is explained. Indeed, the rules of the standard first-order logic will ensure their validity. Second, only Meinongianism can provide the metaphysical basis that allows us to treat the existential neutrality of intensional transitives without abandoning their relational analysis. As is stated in Section 1, the object position of an intensional transitive lacks existential commitment. On the other hand, according to a relational analysis, for example, (22a) entails $\mathfrak{S}x(\mathit{hotel}'(x))$. These two facts seem to force any relational analysis to treat quantifiers as ranging over not only existent objects but also nonexistent objects, and Meinongianism gives metaphysical basis of such a reading of quantification.

It seems thus worthwhile to try to explain cases involving existence-entailing predicates and ones of indeterminate readings on the basis of logical forms like (22b). It goes beyond the purpose of the present paper to give a fully developed account in this line, and thus I just give some basic ideas of such an account. It is a subject of further research to propose a more precise semantics of intensional transitives on the basis of these ideas.

With regard to cases involving existence-entailing predicates, one might be inclined to simply deny that there are such predicates (other than "exist," "existent," etc.). For any predicate other than explicitly existential predicates, something's satisfying it does not entail the existence of that thing. Indeed, this is a standard assumption of Meinongianism: the principle of independence of *Sosein* from *Sein*. This principle states that an object can have properties regardless of whether it exists or not. If we adopt this principle, then neither *being gold* nor *being a mountain* are existence-entailing. Thus, the truth of "John seeks a golden mountain" does not entail the truth of "a golden mountain exists." The problem disappears.

With respect to indeterminate readings, the following observation is helpful. Consider contexts in which the indeterminate reading of (9a) (= "John seeks a hotel") is true. It seems to make some sense to say that in such contexts, the object of his seeking lacks many details. What he seeks is a hotel, and it may be a hotel located near JFK airport. However, it is likely that he has no idea or preference about how many floors and rooms it may have, when it might be built, what brand of the bathtub may be used there, and so on. Now, suppose that he has no preference about the number of rooms. Then, is what John seeks a hotel having 30 rooms? Or is what he seeks a hotel *not* having 30 rooms? The answer to these questions seems to be "no," and the same seems to hold with respect any other number of rooms. In other words, the object of John's seeking seems indeterminate about these matters.[*5]

Given this feature of indeterminate readings, we may hold that an *incomplete* object, which is thought to be a typical example of a Meinongian nonexistent object, plays a crucial role in such readings. Roughly speaking, an object is complete iff for any property P, it has either P or *non-*P. An object is incomplete iff it is not complete; for some property P, it has neither P nor *non-*P.[*6] In the context supposed above, the object of John's seeking is indeterminate at least with respect to the number of rooms. We may treat this indeterminacy in a metaphysical manner: that is, the object of his seeking is a hotel that is incomplete, at least with respect to the number of rooms it has.

A simple way to accommodate these considerations to semantics of "seek" is to take the

[*5] For the idea that intentional "objects" lack details and are thus indeterminate, see Anscombe (1965). Note, however, that she does not "reify" intentional objects as nonexistent objects in the way described in the present paper.

[*6] For a more precise treatment of incomplete objects, see Parsons (1980, p. 20; p. 106). Note that for brevity, I ignore the distinction between *nuclear* properties and *extranuclear* properties, a distinction which is crucial to his theory. However, to develop the idea described in the remainder of the present paper, we must take the distinction into consideration. See footnote *9 below.

indeterminate reading of (9a) as saying that the first-order relation *seeking* holds between John and an incomplete hotel.[*7] The indeterminate reading of (9a) is true iff for some incomplete hotel (an incomplete object which has at least the property *being a hotel*), John seeks it.[*8] On the basis of this idea, taking quantifiers as ranging over not only complete objects but also incomplete objects, we can give a relational analysis like (22b) to indeterminate readings of "seek."[*9] On the other hand, the determinate reading of (9a) is true iff for some complete hotel, John seeks it.

However, this version of relational analysis has the following problems, which arise from the fact that incomplete objects are particular objects. First, if the indeterminate reading of (9a) reports that the *seeking* relation holds between John and an incomplete hotel, then it follows that John seeks a particular hotel from its indeterminate reading. However, the indeterminate reading of (9a) is characterized as a reading which is compatible with the truth of "John does not seek any particular hotel" (cf. Section 2.3). Secondly, an indeterminate reading may be false even if a subject seeks an incomplete object (cf. Parsons, 1995, p. 160). Suppose that surprisingly, Mary seriously believes that there exists exactly one dog that has only two properties, that is *being a dog* and *being a long-tailed* and seeks this particular incomplete dog. In this situation, the determinate reading of "Mary seeks a dog" seems true, but its indeterminate reading seems false.

[*7] This viewpoint is proposed and examined by Parsons (1995). He takes as examples "think about," "owe," and "promise." See also footnote *8 below.

[*8] I don't claim that in contexts in which the indeterminate reading of (9a) is true, what John seeks must be the incomplete object that has the property *being a hotel* and does not have any other properties. Rather, I claim that in such contexts the object of John's seeking may have properties other than *being a hotel*, even though it must be incomplete. Thus in contexts in which what he seeks is an incomplete hotel that located near JFK airport, not only "John seeks a hotel near the airport" but also "John seeks a hotel" are true. In this way, an NP in the object position of "seek" (or other intensional transitives) may not exhaustively describe all the properties of what a subject seeks (or other activities/states described by intensional transitives), even when (a sentence containing) "seek" (or other intensional transitives) receives its indeterminate reading. This, together with a relational analysis, explains the validity of the Weakening inferences we discussed in Section 3.2. Compare this consideration with Parsons' analysis of the indeterminate reading of "promise."

> For example, if I promise you (non-specifically) a grey horse, then the object of the promise is that incomplete object whose nuclear properties are *exactly* greyness and horsehood. (Parsons, 1995, p. 157, emphasis mine.)

[*9] An apparent objection against this view goes as follows. According to this view, the indeterminate reading of (9a) seems to entail the followings.

(23) a. John seeks a nonexistent hotel.
     b. John seeks an incomplete hotel.

But, of course, in almost all contexts where the indeterminate reading of (9a) is true, what John seeks is an existent and complete hotel. With respect to this objection, see Parsons' treatment of the indeterminate reading of "I promise to give you some horse that exists," which appeals to the distinction between nuclear and extranuclear properties (Parsons, 1995, p. 159).

The relational analysis under consideration, however, predicts that its indeterminate reading is true and its determinate reading is false.

To find a solution to these problems, it is helpful to seek a more accurate characterization of indeterminate readings and determinate readings. We characterized the indeterminate reading of (9a) as a reading which is compatible with the truth of "John does not seek any particular hotel." This is because in contexts where the indeterminate reading of (9a) is true, John seeks a hotel and *any hotel (which satisfies John's preference) would do.*[*10] In other words, in such contexts, there is no particular hotel such that John's finding it is necessary and sufficient for the seeking to be successfully achieved. On the other hand, in contexts where the determinate reading of (9a) is true, there is such a particular hotel. The indeterminate reading of (9a) is now characterized as a reading which does not entail that there is a particular object such that finding it is necessary and sufficient for his seeking to be successfully achieved.

On the basis of this consideration, I propose to distinguish two different types of seeking activities: *specific* and *nonspecific* seekings. They are distinguished in terms of differences in their *success conditions.*[*11] A seeking is specific iff there is a particular object such that finding it by the subject of the seeking is necessary and sufficient for the seeking in question to be successfully achieved. A seeking is nonspecific iff there is a set of conditions that the subject of the seeking has in mind and her finding whatever object satisfies all of these conditions suffices for the achievement of the seeking. Let us call an object *the object of a specific seeking* iff finding it by the subject of the specific seeking is necessary and sufficient for the seeking to be achieved. On the other hand, we call an object *the object of a nonspecific seeking* iff it has all and only properties that constitute the set of conditions that the subject of the nonspecific seeking has in mind. The determinate reading of, say, (9a) is true iff for some hotel, it is the object of a specific seeking by John. Its indeterminate reading is true iff for some hotel, it is the object of a nonspecific seeking by John. According to this proposal, the difference between the determinate and indeterminate readings of (9a) corresponds to the difference in the kinds of seeking activities that John engages, not to the difference in the kinds of objects of John's seeking.[*12] Note that this proposal still gives us a version of relational analysis, given that the two-place relation x *is the object of a specific/nonspecific seeking by* y is a first-order relation between two objects.

It is now easy to see that the indeterminate reading of (9a) does not entail that there is a

[*10] Cf. Lewis (1970, pp. 48-9); Moltmann (2013, p. 171).

[*11] Moltmann proposes that the object NP of an intensional transitive verb (at least, of a certain kind) represents a condition of satisfaction or realization of the event/state described by the verb. (Moltmann, 2013, chap. 5). The version of relational analysis which I will propose below can be seen as stating that an incomplete object can serve as a representation of such a condition. See also Forbes (2006, pp. 98-102) for discussion about the success condition of seekings and its relation to semantics of "seek".

[*12] The object of a nonspecific seeking is always incomplete, because no one can have the complete description of any complete object. But, as we will see, the object of a specific seeking can be incomplete as well.

particular hotel such that finding it is necessary and sufficient for his seeking to be successfully achieved. When a subject engages only a nonspecific seeking of a hotel, there can be many hotels such that her finding one of them is sufficient for her seeking to be achieved, and thus there can be no particular hotel such that her finding it is necessary and sufficient for the seeking to be achieved.

This new version of relational analysis also properly treats the case of Mary's bizarre seeking of an incomplete dog described above. In the situation in question, her seeking successfully ends only if she finds that particular incomplete dog. (This is witnessed by our natural judgement that in the situation Mary's seeking never be achieved. I think the reason of this judgement is that we think we can not find nonexistent objects—for example, we can not find the hypothetical planet Vulcan—at least in a sense relevant here.[*13]) Given this, the seeking that Mary engages in the situation is not a nonspecific seeking whose object is the incomplete dog, since if it was, her finding a real, and thus complete dog which has a long-tail would be sufficient for her seeking to be successfully achieved. Therefore, the indeterminate reading of "Mary seeks a dog" is false in the situation in question.

In this section, I have sketched how a relational analysis can treat cases involving existence-entailing predicates and cases of indeterminate readings, focusing on sentences of the form "s seeks an F." To give a full-fledged account of intensional transitive verbs, we have to consider cases involving an intensional transitive verb other than "seek" and an NP complement which is not an NP with the determiner "a." It is a subject of further research to consider such cases.

5 Conclusion

On the basis of a version of Meinongianism, TNB basically treats an intensional transitive as representing a relation between two individual objects, that is, a subject and a possibly nonexistent object. However, to accommodate certain puzzling cases—ones involving existence-entailing predicates and ones of indeterminate readings—TNB incorporates intentional operators (propositional attitudes) into the relational analysis.

In this essay, I have shown that given the logical characters of intentional operators, this incorporation conflicts with several inferential behaviors of intensional transitives. This difficulty, along with the fact that a relational analysis gives a straightforward account of the inferential behaviors in question, motivates one to give a simple, relational analysis to the cases that make TNB appeal to intentional operators.[*14]

[*13] I admit that there is some sense to say that we can find a nonexistent object. For example, at some point of history a man found the number 0—some Meinongians regard abstract objects like numbers as nonexistent—in some sense. But I don't think that this sense of "finding" is relevant to the present context.

[*14] This work has been supported by JSPS Research Fellowships for Young Scientists and JSPS Young Re-

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searcher Overseas Visits Program for Accelerating Brain Circulation. An early version of this paper is presentated by the author at the 2nd "Ron-Suu-Tetsu" (PhilLogMath) workshop in Tokyo. I would like to thank the audiences of the workshop, Graham Priest, the two anonymous referees and the editor in charge for their helpful and valuable comments.