

Hamburg Summer School *Truthmaker Semantics*

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Handout 3

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Intensional Definite Descriptions

1. Intensional noun phrases (INPs) (Moltmann 2013, to appear):

(1) a. The book John needs to write must have impact.

b. the book John promised he would write

c. the report John asked Bill to write

(2) b. It must be widely read.

Trope-referring INPs:

(3) a. The length of the application John needs to write is five pages.

b. The impact of the book John needs to write needs to be significant.

2. The sorts of things INPs stand for

Traditional approach

INPs stand for individual concepts: semantic values of type $\langle\langle e, t \rangle, t \rangle$ (or higher) (cf.

Krifka/Grosu 2007)

Implausible:

- INPs stand for bearers of tropes and of first order properties.
- Individual-concept approach formally requires lifting all predicates and terms to individual-concept level (Grosu/Krifka 2007)

Present approach

INPs stand for *variable objects* whose manifestations are entities in particular truthmaking situations.

Variable objects / variable embodiments

Variable embodiments (Fine (1999): entities associated with functions from times to manifestations

Variable objects: functions from circumstances i to manifestations in i .

Conditions on variable objects (variable embodiments):

- (4) a. Existence: A variable object o exists in a circumstance i iff o has a manifestation in i .
- b. Location: If a variable object o exists in a circumstance i , then o 's location in i is that of its manifestation in i if its manifestation in i has a location in i .
- c. Property Inheritance 1: If a variable object o exists in a circumstance i , then o has a (world- or time-relative) property P in i if o 's manifestation in i has P in i .
- d. Property Inheritance 2: A variable object o has a property P (circumstance-independently) if all of o 's manifestations have P in all the circumstances in which they exist.

The *Modal Compatibility Requirement* (MCR):

- (5) a. The book John needs to write must / may have a greater impact than the book he has already written
- b.??? The book John needs to write has a greater impact than the book he has already written

MCR not always in place, e.g. not in (3a) (see Moltmann to appear for an explanation)!

Support for the objectual status of the semantic value of INPs:

Anaphora support:

- (6) a. The president of the US is elected every four years. He has enormous responsibilities.
- b. The temperature has increased. It won't increase further.
- c. The book John needs to write must have impact. It must be widely read.

Predicates of objects:

- (7) a. John counted the screws that were missing.
- b. John described the personnel that the company needed to hire.
- c. John enumerated the things that he needed to buy.
- (8) a. What did John count?
- b. John counted the legs of the chair and the screws that were missing.

3. What sorts of variable objects do INPs stand for?

Independent support for situation-based / truthmaker-based semantics of conditionals and modals

Adnominal conditionals, semantically closely related to INPs (Lasnik 1996):

- (9) a. The price if you pay now is predictable, the price if you wait a year is not.
 b. The outcome if John gets his way is sure to be unpleasant for us.

Intuitive description of the variable object ‘the book John needs to write’

Is associated with a function mapping a situation satisfying John’s need to the book John has written in that situation

The need may impose more specific conditions that the book needs to meet, which the speaker need not know about.

There may be different situations as part of the same world that contain different books and that meet the need.

→ The variable object involves situations that are exact truthmakers/satisfiers of the need.

The denotation of the relative clause *book John needs to write* in (1a) (Moltmann, to appear)

(10) a. $\lambda v[\exists d(\text{need}(d) \ \& \ \forall i(i \Vdash d \rightarrow (\text{write}_i(\text{John}, v) \ \& \ \text{book}_i(v))))]$

- b. The property of being a variable object d such that for some need of John’s, in any satisfaction situation of that need, d is a book John writes.

Not quite correct:

Irrelevant disjuncts could be added to the complement. The content of *John writes a book* should be a partial content of John’s need!

How to get (10a) compositionally

Head noun has a syntactic representation inside the relative clause (Vergnaud, Kayne, ...), and is interpreted in the lower position, in the scope of the attitude verb or modal:

(11) a. book that John needs to write

- b. [that John needs to write $[[e]_D$ [book] $_{NP}$] $_{DP}$] $_{CP}$

[e book] interpreted as a restricted variable, with the empty determiner e contributing the variable and *book* the restriction

But no unique variable object yet to serve as the denotation of the INP

To get uniqueness: make use of ordering among variable objects and minimality operator with respect to that ordering.

Part-whole relation \leq among variable objects

F the function mapping a variable object onto the function from circumstances to manifestations of the variable object in those circumstances:

(12) a. For variable objects d and d' , $d \leq d'$ iff $F(d) \subseteq F(d')$.

b. $\min_{\leq} d[\exists e(\text{promise}(e, \text{John}) \ \& \ \forall i(i \Vdash \text{product}(e) \rightarrow \text{write}_i(\text{John}, d) \ \& \ \text{book}_i(d)))]$

4. Further support for truthmakers being involved in INPs

- Intentions, decisions, promises, and requests do not have as satisfiers actions as such, but rather actions 'by way of' satisfying the intention, decision, promise, or request (Searle 1983) Variable objects 'generated' by intentions, decisions, promises, requests will involve such satisfiers.
- Some variable objects require a causal relation between satisfiers and modal object (in a broader sense): purchases, searches

Variable objects 'generated' by a purchase

(13) the bottle of wine John bought over the internet

Purchases as modal objects:

The purchase described in (13) is realized only by situations of John's 'having' a bottle wine that are caused by the purchase.

The variable object that is 'the bottle of wine John bought' will be realized only by bottles of wine in such situations, not by bottles of wine in other (actual) situations.

Variable objects 'generated' by a search

(14) the house John is looking for

John's search is satisfied only by situations in which John comes across a suitable house as a result of his search, not just situations meeting relevant descriptive conditions.

(15) the assistant John is looking for

(15) can only have manifestations that are assistants hired by John as a result of his search, not assistants John would have hired anyway.

Situations of finding (which may involve events of coming across, of nomination, or recognition, cf. Moltmann 1997) can satisfy a search only if they are caused by the search, not if just if they are of the right sort.

Sharing of variable objects

(16) a. John found what he was looking for, a house. (finding as ‘coming across’)

b. John found what he was looking for, an assistant. (finding as ‘hiring’)

c. John found what he was looking for, a role model. (finding as ‘recognizing’)

Situations of finding are satisfaction situations of the research.

Sharing impossible

Two intensional verbs:

(17)?? John found what Mary mentioned, a large suitcase.

Extensional and intensional verb:

(18) ?? John weighed what he was looking for, a suitcase.

Condition on sharing

Sharing requires satisfaction situations relating to the same modal object or connected modal objects

Other examples of the sharing of variable objects described with different intensional transitive verbs:

(19) a. Mary needs what she is looking for.

b. John needs the money Bill owes him

c. Mary has what she needed, an assistant.

- Independent evidence for the involvement of situations in the semantics of intensional transitive verbs from downward monotone quantifiers (Moltmann 1997):

(20) a. John promised at most two papers.

b. John promised to write at most two papers.

In (20a), *at most two* counts the papers John has written in a situation exactly satisfying John’s need; in (20b) *at most two* gives part of the content of John’s promise.

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