Property-type objects and modal embedding

Recent semantic work on a variety of languages has produced evidence for "non-specific" objects of a predicative or property type, \( <e,t> \) (e.g. on Eskimo languages, Bittner 1987, 1994, van Geenhoven 1998, Wharram 2003; on Hindi, Dayal 2003; on Hungarian, Farkas and de Swart 2003; on Maori and Chamorro, Chung and Ladusaw 2004). Such objects have obligatory narrow scope and cannot refer to entities in the discourse. This paper takes up the interaction of property-type objects with intensional object positions in Eskimo languages, Hindi and Nez Perce (Penutian). In all of these languages, the morphosyntax of property-type object constructions is not sensitive to whether a verb’s object is extensional (as with ‘find’) or intensional (as with ‘seek’). This suggests a unified syntax and semantics for property-type objects, regardless of verbal intensionality. I offer a unified theory of property-type objects in accordance with which a modalized functional head mediates the composition of verb and object.

Property type object constructions are morphosyntactically distinguished in Nez Perce by case marking and agreement. For both intensional and extensional predicates, property-type objects lack case and cannot agree (b examples); both types of predicates also take canonical objects which require case and agreement (a examples).

(1) Extensional verb: properties versus individuals

a. Caan-nim pe-’yaq-ne iníi-ne
John-SUBJ 3/3-find-ASP house-OBJ
John found a house
Comment: "That sounds like a particular house that he was looking for"

b. Caan hi-’yaq-ne iníit
John 3SUBJ-find-ASP house
John found a house

(2) Intensional verb: properties versus individuals

a. ’e-’péew’i-se cícyle pépic-ne
3OBJ-seek-INC purple cat-OBJ
I’m looking for a purple cat
Comment: (surprised) "There’s a cat out there that is purple and you’re looking for it!"

b. ’ipéew’i-se cícyle pépic
seek-INC purple cat
I’m looking for a purple cat [non-specific]

That property-type objects are treated identically across verbs is a non-trivial finding in light of proposals such as Zimmermann (1992), according to which the distinguishing feature of intensional predicates is a property-type object position. As van Geenhoven and McNally (2005) note, it does not seem plausible in light of data such as (1)-(2) that the major difference between ‘seek’ and ‘find’ is that only the former can take a property-type object. Rather, the difference must be that only the intensional predicate introduces modality, and can thus locate the object with respect to merely possible worlds.

The interpretation of property-type objects of intensional verbs places an important constraint on how we interpret property-type objects more generally. On the common assumption that the open predicate introduced by a property-type object must be existentially closed at some point in interpretation, we will be required in our analysis of intensional predicates to embed the existential closure operator within the scope of the verb’s modality. For a case like (2b), we do not want to say that there is some certain \( x \), a purple cat, that is found in all successful-search worlds (\( \exists x > \forall w \)). Rather, we want to say that there may be different purple cats in different successful-search worlds (\( \forall w > \exists x \)), and furthermore, that there need be no purple cats in the actual world at all. The existential closure over the variable \( x \) must occur in the scope of a modalizing operator. This poses a problem for theories of property-type objects where they are existentially closed above the level of the verb by whatever mechanism (e.g. an event-level saturation requirement for Chung and Ladusaw 2004, a verification requirement for DRSs for Farkas and de Swart 2003).

The theory I develop seeks to account for the insensitivity of property-type object constructions to the intensionality of predicates by requiring all property-type objects to compose with their verbs with the syntactic mediation of a modalizing functional head. This head, which I call ANTIP, plays two roles: it introduces modality based on the intentions associated with an event, and it existentially closes the object property within the scope of that modality. Syntactically, I assume a model where only theme arguments are introduced by verb roots (Kratzer 2003). The composition of the verb with ANTIP therefore affects only the theme argument, in keeping with the restriction of the alternation in (1)-(2) to theme objects.

(3) Semantics of the ANTIP head

\[
\lambda P_{<e,t,w,t>} \lambda Q_{<e,w,t>} \lambda e \cdot \forall w' \text{ compatible with intent}(e) : [\exists x, Q(x)(w) \& P(x)(e)(w)]
\]
The structure of the vP in (1b) is schematized below.

(4) \[
\lambda e \cdot Agent(John)(e) & \forall w \text{ compatible with intent}(e) : [\exists x. house(x)(w) & finding(x)(e)(w)]
\]

In the resulting denotation for (1b), the finding event is located with respect to a set of possible worlds, not necessarily the actual one. Nevertheless, property-type object constructions with extensional verbs may require an actual event of (in this case) finding, not just a possible one. I analyze this consequence as an actuality entailment of the sort noted for other modal elements by Bhatt (1999). Following Hacquard (2006), I derive the actuality effect via the contribution of perfective viewpoint aspect, which locates an event with respect to the evaluation world. If a sentence like (1b) must describe an actual world event, and the event is a finding event in some world, we can conclude that its essence transfers over to the actual world as well (though interesting questions are raised regarding essence and culmination). In this way, higher functional structure partly obscures the modal semantics of the property-type object construction.

For intensional verbs, I assume a semantic type exactly parallel to their extensional cousins: \(<e < s, wt >>\). This similarity allows both kinds of verbs to combine with the same head ANTIP, providing a unified source for property-type objects. Intensional verbs locate individuals within situations compatible with a given accessibility relation; I propose, therefore, that intensional verbs are in essence names for accessibility relations. They differ only in the relation they name.

(5) \[\sqrt{\text{WANT}} : \lambda x \lambda e \lambda w. \forall s' \text{ satisfying desires of } e \text{ in } w : x \leq s'
\]

(6) \[\sqrt{\text{SEEK}} : \lambda x \lambda e \lambda w. \forall s' \text{ containing goal of } e \text{ in } w : x \leq s'
\]

References