Title: Nominalizations, sortal ambiguity and ontological commitment

Topic (B): Nominalization and Ontological Commitment

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This paper discusses the status of ontological commitment with respect to sortally ambiguous nominalizations, arguing that ambiguity constitutes a serious challenge to the ontological underpinnings of the semantic analysis of nominalization. I discuss two exemplary modelling strategies for sortal ambiguity - disjunction [Hamm and Kamp, 2009] and dot-types [Pustejovsky, 1998, Asher, 2011] - with respect to their potential in the design of an appropriate ontology for ambiguous nominalizations. The paper delineates possible answers to the question for what it is that one ontologically commits to when it comes to the type of disambiguation and reambiguation mechanisms involved in the semantics of ambiguous nominalizations and proposes to explore the use of underspecified representations as proposed by [Reyle, 1993].

In german, a productive way to build referential expressions out of non-referential ones is -ung nominalization, which is comparable both to -tion and -ing nominalization in English. [Hamm and Kamp, 2009] claim that many german -ung nominals are ambiguous between an event-, a state- and an entity-denoting reading. Consider the german -ung nominalization "Absperrung" ('cordon') in examples (1)-(3).

(1) Die Absperrung der   Botschaft wurde angestrichen.
     The barricade   of the embassy   was   painted.

(2) Die Absperrung der   Botschaft wurde behindert.
     The blocking-off of the embassy   was   obstructed.

(3) Die Absperrrung der   Botschaft wurde aufgehoben.
     The blocking-off of the embassy   was   lifted.

In each of the examples (1)-(3), the denotation of the noun "Absperrung" is of a different ontological sort; entity in (1), event in (2) and state in (3). This *sortal ambiguity* of "Absperrung" is represented by [Hamm and Solstad, 2009] in the framework of Discourse Representation Theory [Kamp et al., 2011] as in (4). The sortal ambiguity of "Absperrung" at the NP-level is captured in (4) by a representation involving the disjunction operator $\overset{!}{\vee}$ [Hamm and Kamp, 2009], where α is kept in a 'store' in front of the Discourse Representation Structure (DRS) until it is bound at the VP-level.

(4) $\langle \alpha \begin{array}{|l} \hline \alpha = e \overset{!}{\vee} \alpha = s \overset{!}{\vee} \alpha = y \\ Absperrung(\alpha) \\ e \text{ CAUSE } s \\ s : block(y, z) \\ Agent(e) = x \\ \hline \end{array} \rangle$

A naive approach to the disambiguation of "Absperrung" involves the assumption that the selection restriction of the container verb deletes those disjuncts of the underspecified representation which do not match the sortal requirements on possible arguments of the container verb. But [Hamm and Solstad, 2009] argue that the naive deletion approach to disambiguation makes wrong predictions with respect to certain cases of anaphora resolution as presented in (5). In the first sentence of (5) "behindern" ('disturb') selects the event-reading of "Absperrung" but in the second sentence, "aufrecht erhalten" ('sustain') selects (via the pronoun "sie" ('it')) for the state-reading of "Absperrung".

(5) Die Absperrung des   Rathauses wurde vorgestern   von Demonstranten behindert.
     The cordoning-off of the town hall was   the day before yesterday by   protesters   disturbed.
     Wegen anhaltender Unruhen wird sie auch   heute aufrecht erhalten.
     Due to continuing   unrest, is   it as well today sustained .

     The cordoning-off of the town hall was disturbed by protesters the day before yesterday. Due to continuing unrest, it is sustained as well today.

[Hamm and Solstad, 2009] argue that the monotonic deletion of the state and entity reading of "Absperrung" through the interpretation of the first sentence does not allow for the 'reambiguation' of "Absperrung" in the second sentence, where "aufrecht erhalten" selects for the state reading of "Absperrung". Consequently,

[Hamm and Solstad, 2009] propose a process of non-monotonic inference from the event of cordoning-off to its result state and suppose such principles to underlie the ontology of german -ung nominalization.

Taking these linguistic observations as a starting point, the paper investigates the status of the "dummy" discourse referent α and its representation in (4). In the light of the need for reambiguation of nominalizations exemplified by (5), a naive interpretation of α as a metavariable ranging over different sorts of discourse referents (and consequent instantiation with a referent by the deletion of disjuncts from the representation at the VP level) is doomed to fail. But what else could the ontological status of α be then? Does α have a denotation and if yes of what kind is its denotation? The paper discusses the question for the ontological status of ambiguous nominalizations by comparing two paradigmatic, yet different approaches to sortal ambiguity proposed by [Hamm and Solstad, 2009] and [Pustejovsky, 1998]: in a disjunctive approach of sortal ambiguity, "Absperrung" does not denote a single object, whereas in a dot-type analysis, "Absperrung" denotes a single object, namely an object of the complex dot-type $\tau = event \otimes entity \otimes state$. Despite their fundamentally different answer to the denotation of ambiguous nominalizations, both the Aristotelian, substance-based ontology involved in the dot-type analysis and the disjunction-based theory of ambiguity have unwanted implications with respect to the involved metaphysical stipulations behind dot-types - which go beyond the scope of linguistic investigation - resp. the functionality of the disjunctive approach to meaning - where the mapping from the linguistic surface to meaning is in fact not only non-functional but non-monotonic. The paper comes up with a proposal to overcome with the drawbacks of both the disjunctive and the dot-type position on sortal ambiguity by reviving basic insights of Underspecified Discourse Representation Theory (UDRT, [Reyle, 1993]) and presents first results on the application of the principles of UDRT to ontological structures, thereby dealing with ambiguities in a non-disjunctive way and without commitments to a certain conception of metaphysics. The underspecified account of the ontology of -ung nominalizations proposed in this paper considers the selection restriction of verbs as constraints on lattice structures of DRS conditions and discourse referents and claims that it is the scope and type of these *ontological* constraints that can be modelled in a way similar to the way UDRT derives scopeless representations of quantified sentences. By keeping meaning and ontology separate, reambiguation of an -ung nominalization can be modelled as a formal operation on the ontological structure of the underspecified representation through which the ontological scope relation for the nominalization changes and in turn different constraints over the possible sorts of the denotation of the nominalization are imposed. The paper concludes with a reflection of the impact of underspecified ontology on the philosophical notion of ontological commitment, arguing that commitment should pertain to underspecified semantic representations in the sense of UDRSs rather than metaphysical stipulations or disjunctive sets of meanings.

References

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