**Abstract accepted for the 6th Workshop on Nominalizations (Jenom6),**

**Verona, June 29 – July 1, 2015**

**Modals, Nominalizations, and Modal Objects**

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This talk will address three questions regarding the semantics of modals:

[1] What sorts of entities do nominalizations of modal verbs describe?

[2] What, if any, is the Davidsonian argument of modal verbs?

[3] How do the answers to [1] and [2] bear on the semantics of modals?

I will argue that a particular type of entity of what I will call ‘modal objects’ is what nominalizations of modal verbs describe and what plays the role of Davidsonian event arguments of modal verbs. Furthermore, I will outline a novel semantics of modals on which modal objects take center stage (rather than possible worlds). These entities are of the sort of needs, options, obligations and offers and have characteristic properties distinguishing them both from events and states.

 The question of what nominalizations of modals stand for has hardly been addressed in the semantic literature. The reason appears that modals to a great extent are modal auxiliaries and as such do not come with nominalizations. However, there are modals verbs that do have nominalizations, and moreover there are complex modal predicates involving nouns that should have the very same semantics as nominalizations of modal verbs. *Need* is a modal verb that comes with a nominalization, namely *need*. The verb *need* also alternates with the complex predicate *have the need*, and in fact some languages have only the complex for (French *avoir besoin,* Italian *avere bisogno)*). It may in fact be that English *need* is derived from *have need* (Kayne / Harves 2012). In any case, the noun *need* describes entities that match the content of the verb *need*.

 Nominalizations are also generally available with modal adjectives, thus we have:

*possible – possibility, necessary – necessity, obligatory – obligation, optional – option,*

and the clausal complement or quasi-complement plays the same role in the two cases:

(1) a. John needs to work. B. John’s need to work

On the view I will pursue the clausal complement (or prejacent) of a modal verb or modal noun will be predicated of the modal object in question, by specifying the situations or actions that satisfy or possibly violate the modal object, making use of Fine’s recent truthmaker semantics (2012, 2014, to appear):

(1) a’. ∃d(need(d) & [*John to work*](d)) b’. ιd[need(d) & [*John to work*](d)]

 Modal objects may also be closely related to certain propositional attitudes and illocutionary acts and as such act as the non-spatio-temporal parts of the cognitive products of those acts. Thus, if John promises to help, he produces both a promise and an obligation to help. The obligation is part of the promise but generally endures beyond the promise. The obligation and the promise share exactly the same satisfiers, actions of John helping.

 Modal objects differ from events in that they are generally the non-material products of events, not the events themselves. They differ from events most importantly in that they have satisfaction conditions: John’s obligation that is part of his promise may be satisfied, but not John’s act of promising. Modal objects also differ from states, in the sense of Maienborn’s (2007) Kimian (or abstract) states. Kimian states are what gerunds such as *John’s needing to help* stand for. Modal objects again differ from such states in having satisfaction conditions: John’s need can be satisfied, but not John’s needing. Similarly, obligations can be complied with, but not states of being obliged.

 Modal objects of the deontic sort are in fact on a par with laws – the abstract artifacts that result from acts of declaring or passing them. Laws share with modal products their ability of having satisfaction conditions and of enduring past the act of establishing them.

 A regards, [2], there is one view found in the literature, namely Hacquard’s (2010) view, on which root modals take the VP event as Davidsonian argument and epistemic modals the speech event or, in case of embedded epistemic modals, the reported attitudinal or illocutionary event. This analysis is to explain the dependency of modals on a time and an agent: in the case of epistemic modals, the time is that of the speech event or the reported attitude; in the case of root modals it is that specified by tense and the agent is that of the VP event. However, there is a serious problem with Hacquard’s proposal and that is that it makes the wrong prediction as regards adverbials. The original motivation for Davidson’s semantics for events was to account of adverbials as predicates of the event described by the verb, so that in (2a, b) *with effort* acts as a predicates of the moving event. But if that same event is an argument of *might* as in (2b), *with effort* should be able to modify the root modal as in (2c), but it cannot:

(2) a. John moved with effort b. John might move with effort.

 c. ??? John with effort might move.

Similarly the adverbials in (3a, b) are predicted to act as predicates of the speech event, which they cannot, given the unacceptability of the examples :

(3) a. ??? Quickly John might be at home. b. ??? Hesitatingly John might be at home.

I will thus argue, against Hacquard (2010), that the event argument of modals should be the modal object, the very same object that nominalizations of modals describe.

 I furthermore consider the clausal prejacent as predicate of modal object, using Kit Fine’s (2012, 2014, to appear) truthmaker semantics. On that view, sentences denote sets of (exact) truthmakers (situations or actions wholly relevant for the truth of the sentence) and sets of falsemakers (or violators). The denotation of a *that*-clause (or prejacent) can then be given as a property of ( modal) objects as below, where pos(S) is the set of verifiers of S and neg(S) the set of falsifiers of S, and ╟ is the truthmaking relation and ╢ the false-making relation (a truthmaker of the negation of S is a falsemaker of S)::

(5) [*that* S] = λd[∀s(s ╟ d 🡪 s ∈ pos(S)) & ∀s(s ╢ d 🡪 s ∈ neg(S))]

I will assume that modal objects of necessity have both satisfiers and violators (obligations can be complied with or contravened), whereas modal products of possibility have only satisfiers (offers, options can only be accepted, not violated). In both cases, then, the clausal complement specifies whatever the satisfiers and violators are.

This account explains various sorts of ‘modal concord’ (Anand/Brosveanu 2010):

(6) a. John could possibly be at home. b. John demanded that Bill must leave.

In (6a), the modal auxiliary and the modal adverbials take the very same modal objects as arguments, as in the analysis below:

(6) a’. ∃e(could(e) & possibly(e) & [*John be at home*](e))

The analysis below accounts for the apparent redundant occurrence of *must* in (5b):

(6) b’. ∃e (demand(e, John) & λd[must(d) & [*Bill leave*] (d)](modal-product(e)))