



Needing to have BUT NOT needing: THE LIMITED MODAL POTENTIAL OF ITVs

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Expectations and Observations

Intentional Transitive Verbs (ITVs) are verbs like *want* and *need* that can combine directly with noun phrase complements and endow them with an intensional interpretation. Some ITVs also have infinitival paraphrases.

Received wisdom is that the infinitival and the nominal constructions of these verbs are semantically equivalent. Accordingly, a variety of mechanisms have been explored that make them equivalent either in the syntax or in the semantics (McCawley 1974, Fodor & Lepore 1998, and others).

An unexpected difference emerges between the two constructions when we look at modal ITVs and how **flexible** they are with respect to the **type of modality** they can express.

E.g. *I need (to take) a break*:

	need to ... DP	need DP	} Circumstantial Modalities
Teleological (goals)	✓	✓	
Bouletic (desires)	✓	✓	
Deontic (rules)	✓	✗	

The transitive construction is restricted to a subset of circumstantial (or root) modalities.

The Crucial Context

Contexts that bring out the difference are ones in which the rules (+external) conflict with internal circumstances (-internal).

Gina needs (to have) hot chocolate

Context: +external
-internal

Gina has had an aversion to chocolate since childhood. She **hates it** in her food, in her drinks, even as a garnish. Today **as part of her job** as a restaurant critic, she was sent by mistake to review a cafe that specializes in hot chocolate. She can't be assigned to a different restaurant, and the review is **due on the boss's desk** tomorrow morning.

- It is necessary to look at an ITV which is in general flexible in terms of type of modality (not *want*).
- Following the rules is often beneficial and a goal in itself ...
- "Anti-circumstantial" contexts uncover the difference between need-DP and need-IP constructions.

Two experiments tested the correlation between the syntactic configuration of *need* and its semantic interpretation in different discourse contexts.

Experiment 1: rating task in (+external, -internal) contexts

- a. Gina needs to have hot chocolate. (*IP condition*)
b. Gina needs hot chocolate. (*DP condition*)

Context: +external: boss's instructions AND
-internal: an aversion to chocolate

(The paragraph in The Crucial Context, above.)

Experiment 2: rating task in (+external, +internal) contexts

- a. Sarah needs to take a nap. (*IP condition*)
b. Sarah needs a nap. (*DP condition*)

Context: +external: a rule of the house requires napping AND
+internal: very tired after a sleepless night

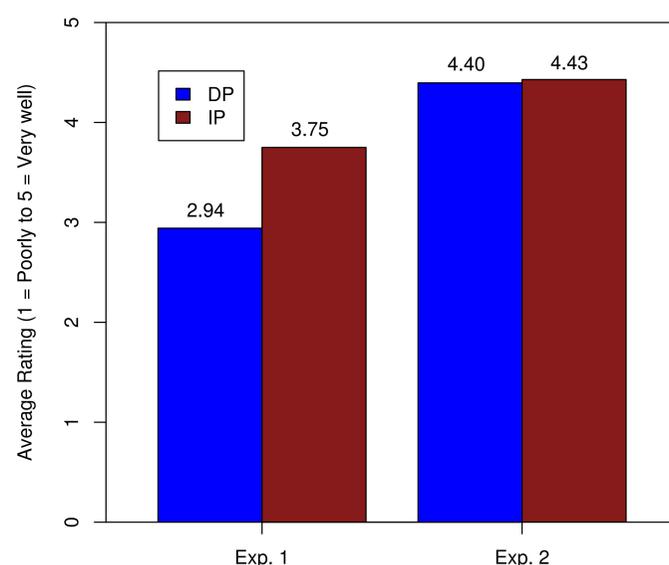
It is **a rule** at Sarah's house that everyone naps for at least one hour between 2 and 4 in the afternoon. It's 2pm, and Sarah just got back from a long day trip with her friends. She is **particularly tired** right now because she also **didn't get much sleep last night**.

Experiment 2': follow-up forced choice comprehension questions in context of Exp. 2

- Why does Sarah need (to take) a nap?

N = 40
Verbs tested: *have, take*
(possession/undergoing relations)

'How well does the sentence fit with the story?'



Results of Experiment 1 and 2: need-DP sentences received significantly lower ratings than need-IP sentences in Exp. 1 ($t = 7.155, p < 0.001$). In Exp. 2, the ratings in the two conditions did not differ ($t = 0.43, p = 0.66$). The models fitted were linear mixed models with crossed random effects for subjects and items. Between experiments, a *t*-test revealed that the difference among the need-IP sentences was significant as well ($t = 6.45, p < 0.001$).

Results of Experiment 2': a significant tendency for external-deontic interpretations to be paired with the IP configuration of the verb (2.16 times higher odds than in the transitive configuration, $p < 0.001$) was found in a mixed logit model.

	Deontic response	Teleological response
IP condition	133	107
DP condition	99	141
	232	248

Conclusions

Overall, these findings establish a clear difference between *need* and *need to* in terms of the type of modality they can express.

- Transitive *need* can express only a proper subset of the root modalities.
 - It is naturally used to express internal-teleological modality.
 - It cannot readily acquire deontic interpretations, even with supporting context.
- *Need to* is open to both teleological and deontic interpretations.

Attitude verbs that express only one type of modality across the board, like *want* (Heim 1992), have obscured the different modal potential of the two syntactic configurations.

Theoretical Implications

A new look at the syntax-semantics mapping of modal verbs and their context dependency.

- Deontic and teleological modalities are usually taken to be subtypes of circumstantial modality (Kratzer 1981), distinguished only by features of the *contexts* in which they are uttered. However, we have seen that in fact *the grammar* keeps them apart in at least one environment.
- This is not evidence against a covert relation in the syntax or semantics of need-DP constructions. As far as modal meanings are concerned, explaining the ban on deontics is difficult either way.
- It seems instead that an investigation into the grammatical limitations on the context dependency of modals is the place to look. This approach also has much precedence in the literature.

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