

Variation and processing of modal doubling in English

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Introduction: ‘Modal concord’ refers to the phenomenon where the co-occurrence of a modal verb and a modal adverb with the same flavor and force (e.g., *may possibly*, *must certainly*) gives rise to the interpretation of single modality [1, 9]. An alternative analysis is proposed as ‘modal spread’ [2], in which modal verbs make semantic contributions in weakening or strengthening the degree of speaker commitment. Recent experimental work shows that *may possibly* and *must certainly* constructions in English differ from single modal verbs in linguistic interpretations as well as in social meanings [6], i.e., the pragmatic inference drawn from linguistic material in terms of the speaker’s persona, attitude, and background [3]. These results provide partial evidence for the - more flexible - modal spread approach [2]. However, the experiments did not test modal adverbs in isolation, whose role remains to be further investigated. In the planned studies, we aim to investigate the variation and processing of modal verb + adverb constructions in English. We will focus on the contrast between *might* vs. the multiply ambiguous *may*, as well as between their co-occurring adverbs of different strength and use (e.g., possibility adverb *possibly/perhaps/maybe* vs. *certainly*). Our working **hypothesis** is that due to the more flexible interpretation of *may*, the possibility adverb helps to reinforce its weak possibility reading and accordingly gives rise to the weakening effect found in [6] (but see [4]).

Methods: Participants. 150 gender-balanced sample of native American English speakers per study. **Design.** A small-scale corpus analysis will identify the most frequently used combination of the modal verbs *may/might* and possibility adverbs *possibly*, *maybe*, or *perhaps*, as well as the most common syntactic position. **Exp1.** with a focus on single modality uses 2×4 design with the factors REGISTER (formal vs. informal interlocutor relation) and MODALITY (*may* vs. *might* vs. adverb_{possibility} vs. *certainly*). **Exp2.** uses 2×2×2 design with the factors REGISTER (formal vs. informal interlocutor relation, [cf. 7]), MODAL VERB (*may* vs. *might*), MODAL ADVERB (matching_{possibility} vs. mismatching_{necessity}). **Material.** We will construct 24 items using a between-item design for further planned cross-experimental comparison. A context sentence (S1) manipulates the REGISTER via social relation labels, see (1). (S2) includes the manipulations MODALITY for Exp1 (see (2)), and MODAL VERB and MODAL ADVERB for Exp2 (see (3)). (Q1) measures the speaker commitment, see (1). (Q2) asks about the appropriateness of the sentence. Participants will provide their answers on a 7-point Likert scale (1: *certainly not*/ 7: *certainly yes*).

Approach for statistical analysis. The factors will be sum coded. The analysis comprises separate models for (Q1) and (Q2), including main effects and their interactions. Each experiment will be analyzed separately in a within-participant design. Furthermore, certain conditions will be compared in a between-participant design to tease apart the effects of modal adverbs in speaker commitments. The analyses will be conducted using ordinal mixed-effects models in the Bayesian framework [cf. 5, 8].

- (1) General structure
- (S1) A woman says to the landlord_{distant}/boyfriend_{close}:
- (S2) Exp1/2
- (Q1) Does the person believe they have lost their keys?
- (Q2) Is the phrasing appropriate within the given context?
- (2) (S2) for Exp1
- a. I *may* have lost my key.
- b. I *might* have lost my key.
- c. I have *adverb*_{possibility} lost my key.
- d. I have *certainly* lost my key.
- (3) (S2) for Exp2
- a. I *may* *adverb*_{possibility} have lost my key.
- b. I *may* *certainly* have lost my key.
- c. I *might* *adverb*_{possibility} have lost my key.
- d. I *might* *certainly* have lost my key.

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