

Semantic and Social Meaning Match: experiments on modal concord in US English

Introduction: Recently, formal and experimental linguistics show a growing interest in studying social meaning of language users' choice among functionally similar variants, integrating formal grammar with methods of sociolinguistics, language comprehension and perception [1, 2]. Here, we report a case study on modal concord (MC) in US English: MC (e.g., *may possibly*) refers to the phenomenon where two co-occurring modal elements of epistemic modality and the same force (possibility/ \diamond or necessity/ \square) give rise to the interpretation of one single modality (SM) [3]. In comparison to SM, MC has a more restricted use — given their (arguably) equivalent semantics, MC and SM can function as alternative choices in different contexts of use, so what is the mechanism behind the choice for SM vs. MC, and how is the choice processed and perceived?

Experiments – method. We conducted two experiments in US English, Exp1 without context and Exp2 with context — Both used 24 items (and 17 fillers): each item consisted of an introduction sentence (S1), which was fixed for Exp1 and included the CONTEXT manipulation for Exp2, and the critical sentence (S2), see (1). CONTEXT was manipulated via social relations (distant vs. close), which have been shown to affect linguistic choice, a.o. also choice among modal expressions [4, 5]. In both experiments, participants rated (S2) w.r.t. its (i) **interpretation** using the speaker commitment ratings, see (1)-(Q1), (ii) **grammaticality** (additionally its contextual **appropriateness** in Exp2), and (iii) **social meaning** relating to speaker properties in nine dimensions (low/high socioeconomic status —SES, low/high education, in/formal, im/polite, obedient/rebellious, un/cool, cold/warm, un/friendly, un/confident), all on a 7-point Likert scale (1-7 for low-high). **Exp1 – without context (subjects: N=101)** used a 2x2 design with the factors NUMBER (MC vs. SM) and FORCE (P vs. N). **Exp2 – with context (subjects: N=160)** used a 2x2x2 design with a third factor CONTEXT (distant vs. close). We computed ordinal models for the ratings of each question separately (see Figure 1); p-values were obtained using log-likelihood ratio tests.

- (1) (S1-Exp1) Somebody says: ..
(S1-Exp2) A man talks to his {**boss**_{distant} / **mother**_{close}}: ..
(S2) "I {**may possibly**_{MC}/**may**_{SM}} \diamond / {**must certainly**_{MC}/**must**_{SM}} \square have lost my keys."
(Q1) Does the person believe that they have lost their keys?

Experiments – Main results. (i) interpretation: In both Exp1/2, significantly higher speaker commitment ratings were received for \square vs. \diamond and for MC vs. SM, i.e. $\square >_{Int} \diamond$, **MC** $>_{Int}$ **SM**. Furthermore, there was a significant NUMBER*FORCE interaction with a cross-over effect: **MC** $\square >_{Int}$ **SM** \square ; **MC** $\diamond <_{Int}$ **SM** \diamond . — This finding challenges the semantic equivalence assumption for MC and SM: We will leave it under-specified for now as to whether the weakening effect of *may possibly* vs. *may* and the strengthening effect of *must certainly* vs. *must* is a semantic or pragmatic (i.e., via enriched meanings) effect. • **(ii) grammaticality/appropriateness:** In both Exp1/2, MC was rated as less grammatical (above point 4 though) than SM, and in Exp. 2 MC was rated as less appropriate: **MC** $<_{G/A}$ **SM**. — This finding is in line with the more restricted distribution of MC vs. SM. • **(iii) social meaning:** In Exp1, MC was rated as less friendly/warm/cool/rebellious than SM. Certain measures showed a significant NUMBER*FORCE interaction: MC \diamond was rated as significantly lower than SM \diamond in SES/education/confidence levels; MC \square was rated as more formal/confident than SM \square . Furthermore, MC \diamond was rated as more rebellious than MC \square . Exp2 largely replicated the results of Exp1 — MC \diamond was rated as significantly lower in SES/education/confidence levels, but as more rebellious than SM \diamond . MC \square was rated as more formal/confident than SM \square . Furthermore, CONTEXT showed a significant main effect in the formality measure: distant conditions received higher ratings than close conditions. No interactions with CONTEXT were significant.

Conclusion: Our findings (i)/(iii) show that (simplifying here) weaker statements give rise to more negative perceptions and stronger ones to more positive perceptions, providing convergent evidence for the correlation between semantic (or narrow-pragmatic) meaning and social meaning. In our study, context via interlocutor relation manipulations did not have a strong influence on the perception of MC; it remains to be explored as to the effect of other situational parameters.

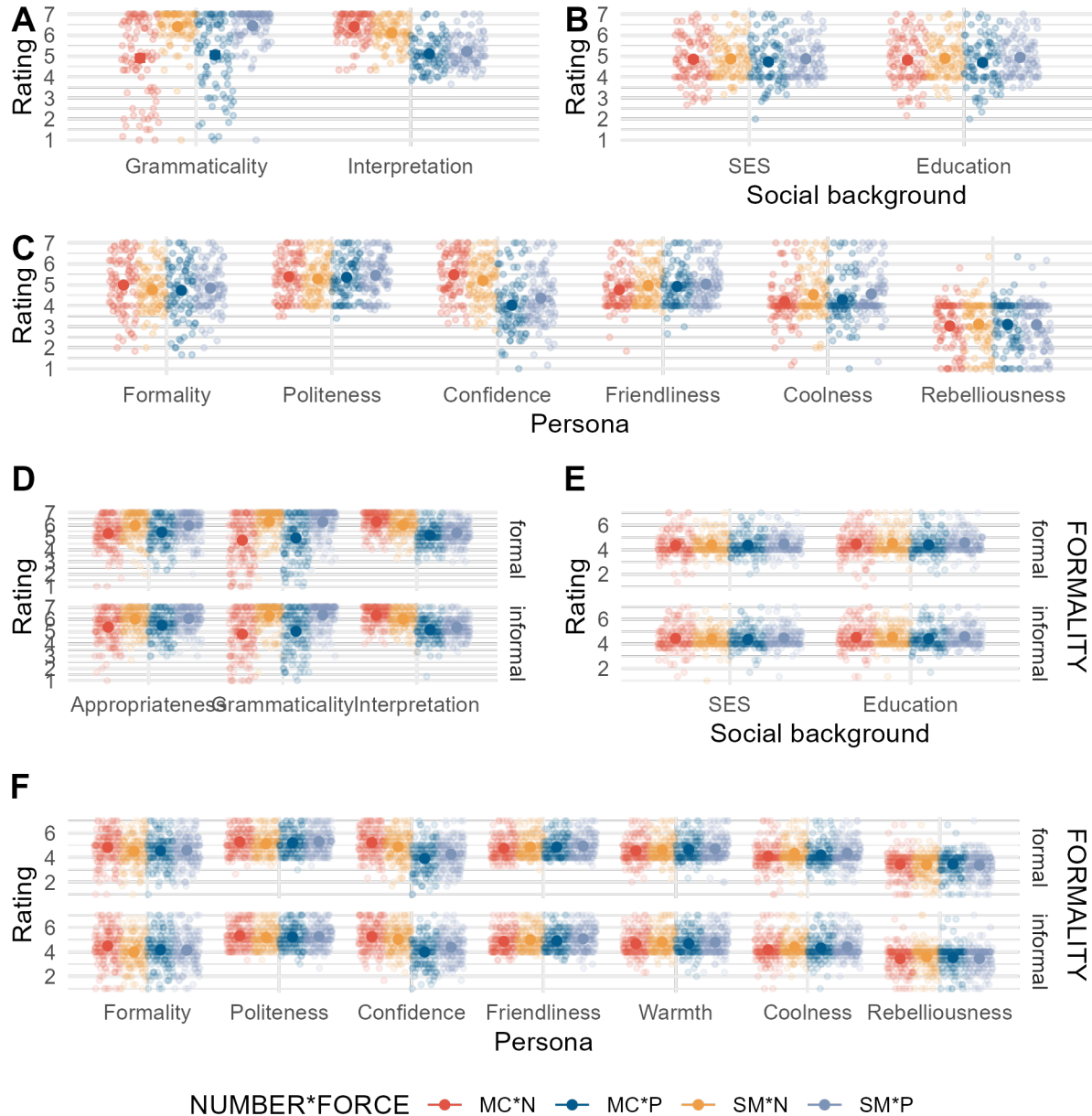


Figure 1: Means and subject means (opaque vs. transparent dots) of Exp1/2 (A/B/C vs. D/E/F).

Selected references: [1] Beltrama, A. (2020). Social meaning in semantics and pragmatics. [2] Burnett, H. (2019). Signalling games, sociolinguistic variation and the construction of style. [3] Geurts, B. and J. Huitink. (2006). Modal concord. [4] Glass, L. (2015). Strong necessity modals: Four socio-pragmatic corpus studies. [5] Pescuma et al. (2023). Situating language register across the ages, languages, modalities, and cultural aspects.