Finding needles in the right haystack: Double modals in medical consultations

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Why some sociolinguistic variables are challenging

- Some syntactic and pragmatic variables offer a number of challenges to quantitative sociolinguists because they are:
  - difficult to define (Pelekis 2010; Cheshire et al. 2005)
  - e.g. discourse marker like (D’Arcy 2005)
  - contextually constrained
  - e.g. tag questions (Moore & Podesva 2009)
  - infrequent in sociolinguistic interviews (Cheshire 1999)
  - e.g. verb qualifiers (Samson 2001)

An example: the double modal (DM)

- The double modal (DM) is feature of Southern United States English (USE):
  1. (You know what) might could help that is losing some weight. (53207)
  2. (My bones) very can not take that. (33596)

- DMs seem to be pragmatically conditioned (Miho & Montgomery 1994), favored in negotiations and/or service encounters
  - DMs are involved in “the preservation of ‘face’ in interpersonal discourse” and “the negotiation of a speaker’s wants or needs” (1994:12)

- DMs are used by various social classes (Feagin 1979); associated with rural speakers (Di Paolo 1989) and the less educated (Hasty 2010); low prestige (Hasty 2011)

- BUT production data on DMs has proven elusive, perhaps due to their contextual conditions and choice and Montgomery (1994) noted 230 examples in 10 years; Feagin (1979) collected 98 examples in 5 years; Wolfram and Christian (1976) could not gather an analyzable sample

- Researchers have found other means by which to study DMs, e.g. elicitation (Di Paolo et al. 1979) and acceptability judgments (Di Paolo 1989, Hasty 2011 inter alia)

- Though these methods are informative, they leave basic sociolinguistic questions unanswered (e.g., in what environments can/ can’t DMs appear?)

- The double modal remains a proverbial needle in a haystack for sociolinguists

Looking in the right haystack

This study utilizes the Verilogue database of healthcare provider-patient dialog available through the Verilogue research portal, a fully searchable online interface

- Information about the type of practitioner, his/her demographics, and the nature of his/her practice is available for each healthcare provider

- Double modals are also available for patients (i.e., age, gender, occupation, medical conditions)

- To complement our corpus study, we used the audio recordings from a subset of our physician-generated DM tokens to craft matched-guise prompts

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- What if we’ve been looking in the wrong haystack?

Methods

- We extracted 95 DMs from the Verilogue database by searching for the modal combinations accepted by participants in Hasty (2011) and reviewing each token in multiple passes (transcript and audio)

- Univariate statistical methods were used to characterize the demographics of our sample relative to the demographic distribution of the Verilogue database

- An independent, multiple regression analysis was conducted using GoldVarb X

- Separate runs were performed for: a) patient/ caregiver (PT) tokens b) healthcare provider (HCP) tokens and c) all tokens

- To complement our corpus study, we used the audio recordings from a subset of our physician-generated DM tokens to craft matched-guise prompts

- Listeners (N=49) heard either the original DM excerpt or a digitally altered excerpt (without the second modal) and were asked to rate the doctor using Likert scales for several adjectives (e.g., honest, friendly, polite)

- 80% of DMs occurred in the South or Midlands

- 63% of our DM tokens were produced by HCPs, affirming the notion that double modals are used at all social levels

- 70% of our tokens occurred in treatment discussions, supporting the hypothesis that DMs are favored in potentially face-threatening contexts

- Compared to the total set of Verilogue’s HCP speakers (N=985), DM-producing HCPs (N=41) represented a significantly higher proportion (p=0.01, 2-prop T) of the lowest-paying HCP specialties (i.e., Primary Care Physicians)

- DM-producing PTs (N=30) were significantly more likely to be “homemakers” (p<0.01) than non-DM producing PTs (same practices, N=2652)

- Qualitative examination of the data suggests that both participants use DMs as a form of epistemic hedging

- OHTs downgrade promissory claims (1) and preserve PTs’ self-perceived agency in the decision making process

- OHTs downgrade claims pertaining to self-diagnosis (2) and treatment plans, weakening promissory claims (1) and preserving

Constraints on double modal production

- Our GoldVarb analysis compared consultations from the Midland and South in which DMs occurred (N=24155), producing a 0.3% rate of DM occurrence

- The following factor groups were analyzed (bolded = retained):
  - interaction type (acute/ lifestyle, chronic, neoplastic)
  - HCP gender
  - HCP years in practice (<1 decade; 1-2 decades; 3+ decades)
  - PT age (<35; 35-60; 60+)
  - PT employment (employed, not employed)
  - PT gender

- DMs were favored in consultations in which:
  - O The HCPs years in practice exceeded 30 years (p=0.71, range 25)
  - Suggests that HCPs may socialize into the use of DMs as a linguistic resource, either professionally or with individual patients
  - O The PT was unemployed (p=0.56, range 17)
  - Unemployed PTs may have more local social networks and decreased mobility (socially/geographically)
  - O HCP’s gender was female (p=0.63, range 16)

- This is surprising, since DMs are rated as non-prestigious in judgment tests and avoided by women in elicitation tasks (Hasty 2010), but consistent with findings pertaining to female doctors’ face management (West 1984)

The social meaning of double modals

- In preliminary results from the matched guise task, DM guises were rated significantly friendlier than non-DM guises, but only for the male doctor

- Supports idea that DMs are viewed positively in the South and available as a resource to speakers across social classes (cf Feagin 1979, Hasty 2010), at least within particular pragmatic contexts

Conclusions and directions

- Infrequent, pragmatically-constrained linguistic features can be analyzed quantitatively, if one searches for them in the right ‘haystack’

- DM production is modulated by speaker-based and interactional effects, suggesting that DMs can be used for identity construction and audience design

- Professional experience/ task orientation, localness, and interactional goals seem to influence double modal use in medical consultations

- We are using vector space analysis (Turney and Pantel 2010) to further investigate the micro-pragmatic environments in which DMs occur

References

- Feagin, J. R. 1994. Double modals in medical consultations: the negotiation of a speaker’s wants or needs. In Discourse and Interaction. K. Brown, J. P. Mullin, and J. F. McWhorter (Eds.). Michigan State University. 70% of our tokens occurred in treatment discussions, supporting the hypothesis