The Syntax of Multiple Modals from a Corpus and Experimental Perspective

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INTRODUCTION

Double modal constructions (DMCs), e.g. *I might could do that,* are frequent in Southern American English (SAE). Prior DMC research is based on intuitions about small numbers of tokens (Butters 1973, Boertien 1986, DiPaolo 1986, etc.). DMC research is also hampered by the difficulty of finding natural examples (Mishoe 1991, Mishoe and Montgomery 1993, Hasty 2012). This paper addresses the empirical lacuna, utilizing the first author's corpus of 1700+ naturally occurring American English tokens. Using a definitive characterization of natural collocations, we analyze these using results of acceptability judgment experiments, with experimental items constructed from corpus data.

CORPUS

The data used here are taken from Multimo, The Database of Multiple Modals (Reed & Montgomery 2012), a database of over 2000 DMC tokens (along with bibliography and commentary) collected from the US, Scotland, and Northern England. We use representative examples from naturalistic data from the English of the Southern US.

OBSERVATIONS

In the corpus, 15 out of 90 possible collocations account for nearly 98% of the data, and 12 of these (88%) involve *might* or *may* followed by one of: *can/could/ought to/ should/will/would*. Table 1 (below) summarizes the data.

First\Second	Can	Could	Might	Ought to	Should	Will	Would	
Can	0	0	2	0	0	0	1	
Could	0	0	5	0	0	0	0	
May	84	46	3	5	21	10	15	**186**
Might	171	883	1	74	60	15	148	**1360**
Ought to	0	2	0	0	0	1	1	
Shall	0	0	0	0	0	0	0	
Should	1	0	0	18	0	0	0	
Usedta	0	131	1	0	0	0	39	**171**
Will	4	0	1	0	0	0	0	
Would	0	2	6	0	0	0	0	
	260	1064	19	97	81	26	204	

EXPERIMENTS

Four acceptability judgment experiments were based on the 12 most common collocations.

Exp 1 – Subject/Aux Inversion (SAI) in Questions
Cond. 1a. **Might** they **would**
Cond. 1b. **Would** they **might**
Cond. 1c. **Might would** they
Cond. 1d. **Would might** they   … do that?

Exp 2 – Aspectual Agreement
Cond. 2a. He … **may could**
Cond. 2b.   **may can**
Cond. 2c.   **might could**
Cond. 2d.   **might can**   … **have** done it.

Exp 3 – Negation placement
Cond. 3a. I might … **not** could
Cond. 3b.   could **not**
Cond. 3c.   **not** could **not** …easily do that.

Exp 4 – Sentential adverb placement
Cond. 4a. I … **possibly** might should
Cond. 4b.   might **possibly** should
Cond. 4c.   might should **possibly** … leave.

METHODOLOGY

Sentences containing the manipulations were presented as recorded sound clips. Each experiment included 24 experimental items and 24 distractors. Subjects rated sentences on a 7-point Likert scale. T-Tests were conducted on the mean ratings.

RESULTS

Experiment 1 – Only the second modal may undergo SAI; 1b > 1a (p=0.003), 1b > 1c (p=0.0125), 1b > 1d (p=0.014). There was no difference among conditions 1a, 1c, and 1d.

Experiment 2 – The second modal, rather than the first, must agree with *have;* 2a/2c >2b/2d (p=0.0003). Furthermore, the two modals necessarily and independently must agree with each other; 2b/2c >2a/2d (p=0.00065).

Experiment 3 – Single negation (3a and 3b) is preferred over double negation (3c); 3a>3c (p=0.01), 3b>3c (p=0.002). There was no difference between 3a and 3b.

Experiment 4 – Adverbs preceding the modals (4a) were preferred over adverbs interposed between them; 4a>4b (p=0.07, α=0.1). There was no difference between adverbs preceding and following the modals (4a and 4c), or between adverbs interposed and following the modals (4b and 4c).

DISCUSSION AND ANALYSIS

Our results suggest acceptability paradigms at variance with observations in the literature, stretching back over 25+ years:

(1) a.*Might they would do that?   **SAI**
   b. Would they might do that?
   c.*Might would they do that?
   d.*Would might they do that?

(2) a.?He may could have done it.   **Aspectual Agreement**
   b.* He may can have done it.
   c. He might could have done it.
   d.**He might can have done it.

(3) a. I might not could easily do that.   **Negation placement**
   b. I might could not easily do that.
   c.*I might not could not easily do that.

(4) a. I possibly may should leave.   **Adverb placement**
   b.?I may possibly should leave.
   c.?I may should possibly leave.

Only the second modal undergoes SAI (1b) and the first is dependent on the second for aspectual-related tense features (2), suggesting that *might/may* are syntactically distinct. The placement of negation (3) and adverbs (4) supports an analysis wherein each modal occupies a distinct projection. Indeed, McDowell 1987 observes an important contrast between epistemic *might/may* and all other modals, noting that the former contribute no propositional content to their containing sentences. (5b) illustrates a clash between two polarity items (*might [so]* and *not*). In (5a), epistemic *could* denotes possible worlds wherein the test is difficult. In (5b), epistemic *might* only modifies the positive assertion in the first clause.

(5) a. This test could be difficult, but it isn't difficult.   b.#This test might be difficult, but it isn't difficult.

We propose that the first modal (e.g. *might*) modifies the head of PolP, while the second modal (e.g. *could*) interacts with Tense and undergoes SAI. The underlying structure of *We might could go in* is given in (6).

(6) $[_{TP}$ we T $[_{VP}$ could $[_{PolP}$ might $[_{VP}$ go in $]]]]$

Could, the element closest to T, is the one that undergoes SAI, and is the head that selects a perfective *have* complement. *Might*, for its part, raises into the V-projection of *could* and agrees with its tense feature when possible.

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