A Multivariate Quantitative Study on English Marginal Modal Construction from the Perspective of Variationist Linguistics——A Case Study of "dare (to) V"

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The modality system is "the most important and complex concept" in the study of grammar (Palmer, 1979), and constructional alternation (like *must* and *have to*, *should* and *ought to*) is the most important topic in the study of diachronic cognitive corpus (Xu Jiajin, 2020). The scope of use of different constructions overlaps to a certain extent, but the differences between them are more than common (Gries, 2003). One form cannot completely replace the position of the other, and English users' choice of construction variants will be restricted by some factors (Meng, 2019).

From the perspective of corpus-based variationist linguistics, this study takes the variants of "dare (to) V" marginal modal construction (modal-*dare*,lexical-*dare* and merger-*dare*) as the research object, using software including Excel, Perl, and R as research tools to conduct a quantitative research by means of conditional inference tree analysis and random forest analysis. The study is aimed to find out the main factors influencing the choice of variants in "dare (to) V" and its diachronic evolution path in American English.

A certain proportion of data in COHA(1860-2009) is screened out through Perl programming and tagged. Previous studies of Szmrecsanyi et al. (2016, 2017) and Meng (2019) as references are considered for the classification and labeling of variables. There are 10 predictor variables which may affect the group of modal construction variants are considered, namely, genre, year, inversion, sentence polarity, sentence type, word class, stress after (the first stress after *dare*), clause type, transitivity, and dynamicity.A visualization on the frequency and distribution of "dare (to) V" is displayed via {party} package in R. Based on methods such as regression analysis and classification models, the factors that have a significant impact on the research object are separated from multiple variables, and then combined with relevant linguistic theories to interpret the results.

The results show that during 1860-2009, the main form of this marginal modal construction is lexical-*dare*. In other words, the full infinitive is preferred to be applied with *dare*. Meanwhile, the main factors that influence the choice of infinitive complement type are clause orientation, inversion, word class of subject, year, and clause type, among which clause orientation and inversion have significant influence in various cases. In addition, there are some cases in form of merger-*dare* (or the merger form of modal-*dare* and lexical-*dare*), and its frequency increased from 1860 to 2009. Other factors considered does not sho in this study with a significant impact on the choice of this modal construction. The study also finds that there are two main forms of merger-*dare*, of which the usages are similar to modal-*dare* and lexical-*dare* respectively, so it is presumed that the two forms of merger-*dare* might have evolved from the other two forms respectively, which is a possible reason for the decrease in the use of both modal-*dare* and lexical-*dare* from 1860 to 2009.
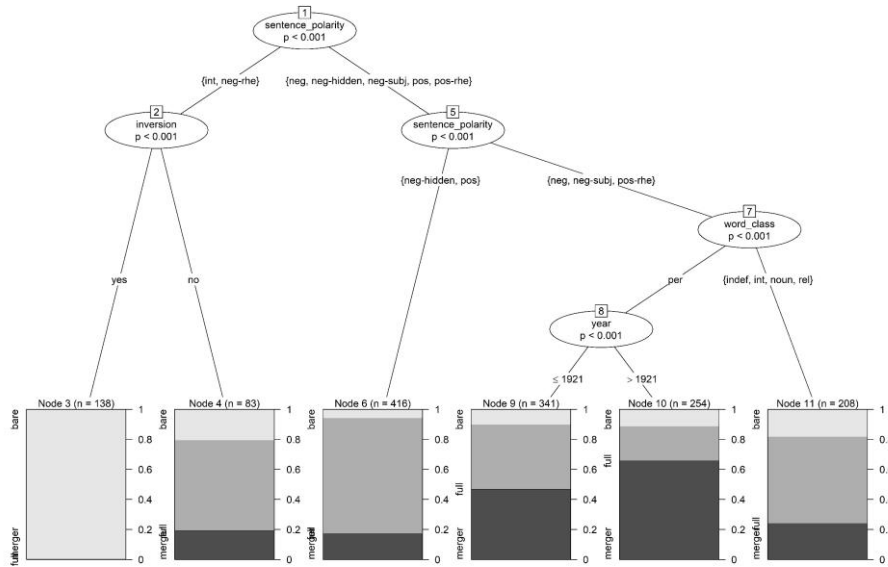
Fig.1 Result of conditional inference tree analysis on the use of variants of dare (modal-dare, lexical-dare and merger-dare) in COHA (1860-2009)
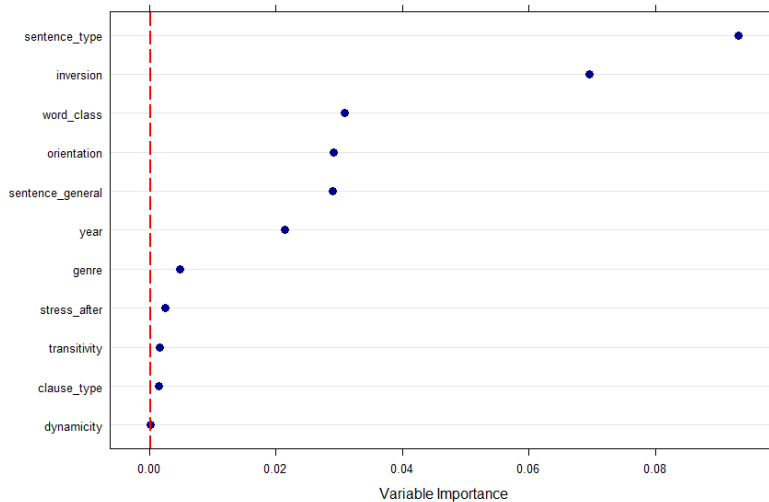

Fig.2 Result of random forest analysis ranking factors influencing the use of variants of dare in COHA(1860-2009)

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