needs+PAST PARTICIPLE in regional Englishes on Twitter

The use of *needs* with a past participle (e.g., 'The car needs washed') has been identified as a diagnostic syntactic feature of the US Midland dialect region (e.g., Murray & Simon 2006). Trudgill (1983:16) has also described *needs*+PAST as a feature of Englishes in Ireland, Scotland, and northern England, and the presence of the construction in the US Midland is typically attributed Ulster Scots settlement in United States (e.g., Montgomery 1991:183).

Studying the feature in the United States and United Kingdom has proven difficult, however. *Needs*+PAST occurs infrequently in speech, and so cannot be studied with traditional variationist methods. Most studies of n*eeds*+PAST have therefore relied on grammaticality judgments from survey respondents (e.g., Murray et al. 1996). But Labov et al. (2006:296) caution that people are generally unable to assess their usage of *needs*+PAST, so these grammaticality judgments are unreliable.

The tremendous volume of speech-like text on Twitter offers a solution to the challenge of collecting production data for low-frequency syntactic variables like *needs*+PAST. Expanding on methods demonstrated by Doyle (2014), this study reports from a corpus of 3.6 million tweets containing a form of *need* and collected from 50 cities in the United Kingdom, United States, and elsewhere. A subset of 3291 tweets are identified as containing *needs*+PAST, and these are quantified and mapped to create a global map of the distribution of *needs*+PAST in Englishes and the densities of *needs*+PAST relative to *needs*+TO.

Results confirm *needs*+PAST as a productive feature of Scotland, Belfast, Newcastle, and the US Midland, and support claims that the construction spread via immigration. In doing so, it validates studies based on grammaticality judgments, while also demonstrating new techniques for studying productions of low-frequency syntactic variables. Results also provide quantitative evidence of the extent to which a settler variety of English may leave an imprint of itself over several centuries, and of the durability of regional dialect boundaries over long periods of time. The study concludes by suggesting new directions for examining *needs*+PAST based on qualitative evaluations of production data.

References

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