Mapping the perception of linguistic form: Dialectometry with perception data

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To a large extent, research on the mapping of language perception has thus far focused on attitudinal research, charting the ways that regional and sub-regional differences are perceived and evaluated by listeners. This work in perceptual dialectology (cf. Preston 1989, 1999, 2013, also Clopper & Pisoni 2006) has been extremely valuable in unpacking folk beliefs about regional differences and better understanding the nature of language variation. However, thus far, very little ”perceptual dialectological” work has actually focused on generating dialectological knowledge about the regional distribution of the performance of listeners in perception experiments. For instance, how does - or even just does - variability in the identification of an ambiguous token of *bet-bait* distribute geographically?

In this paper we examine the geographic distribution of perceptual data from over 550 participants in an experiment testing the categorical perception of several vowel and word pairs (e.g. *bet-bait, bid-bead, sad-sod*). Subjects from around the U.S. participated, with 10 or more participants from 9 different states (max *N = 169* in Nevada; Figure 1 displays subjects by ethnicity). Previous research has demonstrated that vowel identification, at least for certain vowel pairs like /e/ and /ɛ/, is significantly different in several major dialect regions of the U.S. and that vowel identification can be influenced by individual participants' own vowel configurations in production (authors 2012a, 2012b, 2013). Here, we focus for the first time on the actual geographic distribution of the participants, to ask simultaneously whether concepts like isoglosses apply to perception data and to what extent modern methods of dialectometry, such as distance/difference measures, factor analysis, spatial autocorrelation, etc. (e.g., Lee & Kretzschmar 1993, Nerbonne & Kretzschmar 2003, Nerbonne 2006, Grieve et al. 2011) may help us to understand these data.

Perception subjects by ethnicity (N = 578)