Using Social Information in Language Processing

Does knowledge of sociolinguistic variation influence how we perceive and understand speech coming from different kinds of people? In English, [t] and [d] can be deleted from consonant clusters in conversational speech (this phenomenon is called "*t/d* deletion"). Different social groups delete at different rates, and African Americans are known to delete more *t/d* than white speakers of similar age and social background. A series of experiments investigates whether listeners have sociolinguistic knowledge about this variable, and, if so, whether this knowledge influences their language comprehension.

In Experiment 1, participants read sentences containing words that could be subject to *t/d* deletion. Half of the sentences were spelled with their standard orthography (*mast*), and the other half had a deleted t/d indicated orthographically (*mas'*). The task was to choose a picture representing the speaker of each sentence. Participants were significantly more likely to select the picture of the African American when the sentence contained a *t/d* deletion than when it contained a non-deleted token of the same word ($t(1,109)=4.86$, $p<.001$), indicating that they have sociolinguistic knowledge about this variable.

Experiment 2 capitalizes on the ambiguity *t/d* deletion can create between words when spoken aloud; for example, the words *mass* and *mast* sound the same except for the final [t] sound in *mast*, which can be deleted, making them confusable. This ambiguity provides an ideal opportunity to study the use of social information in language processing. Participants listened to temporarily ambiguous sentences like the following:

> The [mass/mast] probably lasted through the storm.
> The [mass/mast] probably lasted an hour on Sunday.

Participants saw a picture of the speaker of the sentence, and heard the temporarily ambiguous portion of the sentence. Then, they judged the sensibility of a written continuation, which was consistent with either the deleted or non-deleted reading of the sentence. If listeners know that African Americans delete more than Anglo-Americans and use this information when they process language, then the way they resolve this ambiguity should be influenced by information about the speaker's ethnicity. That is, seeing an African American speaker should make participants respond faster to sentences consistent with the deleted reading (e.g. *mast*), but seeing a white speaker should make them respond faster to sentences consistent with the non-deleted reading (e.g. *mass*).

Reaction times showed the predicted interaction between ethnicity and word type (deleted or non-deleted) ($F(1,39)=5.64$, $p=.02$). This pattern of results demonstrates that social information listeners gather from the non-linguistic context is used in formulating expectations about sentence meanings. That is, our linguistic stereotypes about speaker ethnicity can affect what we hear.

Psycholinguistic research shows that visual information, referential context, and affective information are all predictive of linguistic form and meaning, and that listeners use these sources of information during on-line language comprehension. These results show that social information is also part of language understanding, and should be included in models of language processing.