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Balatsou, Evangelia; Fischer-Baum, Simon; Oppenheim, Gary

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The psychological reality of name agreement in picture naming

Given a picture that can be appropriately named as either *couch* or *sofa*, how does an individual speaker decide between these options? According to the dominant assumption in the literature, they stochastically select a single name in proportion to the probabilities observed for a larger population, e.g. in timed picture naming norms. That is, researchers assume that such population-level *name agreement* indexes a decision process that takes place within the mind of each individual: if the population is split between two similarly likely names, then an individual will independently sample from the population's responses each time they name the picture, where each word selection can be assumed to follow a stochastic function like the Luce choice rule ($\alpha/\Sigma(\alpha)$). For instance, if norms show that 50% of speakers name the picture as *couch*, then each time a person tries to name the picture, they should have a 50% chance of selecting *couch*. An alternative, however, may be that picture naming norms instead reflect population-level sampling of more stable individual preferences (i.e. idiolects). For instance, if we assume that production basically functions according to a one-concept-one-word rule, then an individual *couch* speaker may never actually consider *sofa* as an alternative.

One way to distinguish between these possibilities – and assess the psychological reality of name agreement – is simply to re-norm pictures with the same individuals (analogous to a multiple-baseline approach in patient testing). According to the Luce-choice-inspired account, whether an individual uses a picture's dominant name (*couch*) in the second norming session should solely depend on its population-level name agreement, regardless of what name that person actually selected in their first session. According to the alternative 'idiolect' account, though, a person should simply repeat their Session 1 response in Session 2, regardless of that picture's population-level name agreement.

Thus, we collected timed naming norms for the 525 black-and-white line drawings of the IPNP (Bates et al, 2003) from the same 25 native British English speakers twice, 1-2 weeks apart. Methods within each session followed standardised IPNP procedures.

As illustrated in Figure 1, logistic mixed-effects regressions modelling the likelihood of producing a picture's dominant name in Session 2 reveal independent contributions of 1.) population-level name agreement, from our previous norms, and 2.) individuals' own productions in Session 1. This is the first direct demonstration that picture name agreement has some psychological validity, but also reveals that it does not directly index within-subject lexical competition as previously assumed.

References:

Bates, E., et al. (2003). Timed picture naming in seven languages. *Psychonomic bulletin & review*, 10(2), 344-380.

Figure 1. The observed likelihood of a person using the same dominant name in both sessions falls between predictions from the stable idiolect account and the independent Luce choice account.

