Strong competitors facilitate target name retrieval in simple picture naming (new British English timed picture naming norms for the International Picture Naming Project: http://pages.bangor.ac.uk/~pss238/lat/norms.html)

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What do we mean when we talk about “competitive” lexical selection? The core theoretical claim—used to explain a wide range of naming latency data: “Somehow, word-order in Stroop, in Conover, in Miller, in Extremera, in Sidaway, in Sidaway et al., 1972—say the production system is hard-wired to choose the single best word in any situation (not just a good word), so selection takes longer as an alternative becomes more accessible. Thus priming an alternative, as in picture-word interference or cumulative semantic interference, causes delayed target name retrieval specifically by creating a single strong competitor. But directly manipulating competitor accessibility introduces confounds and alternative explanations for any apparent effects (e.g., name rivalry if first name appears, and accessibility effects if name is pre-primed). More generally, a theory of normal word retrieval should address retrieval under normal circumstances. What kind of evidence could tell us about the role of endogenous lexical competition in normal picture naming?

New norms reveal replicable distributions and RTs for primary, secondary, and even tertiary responses

- New British norms for the IPNP: 525 black and white pictures of common objects (used dominant in both sessions)
- Two groups of 50 native English-speaking Bangor University Psychology students (100 total)
- Standard IPNP timed picture naming norms retained (Szekely et al., 2003)
- Each picture presented once per subject, without feedback, blind fold after many 105 trials
- Improved paradigm stimulates sequencing and order effects
- Delayed-hold list encodes idiolectically and automatically selects naming latencies
- Response latencies collapse across psychological distinctions, but nothing else
- All current results come in any way you split the data

Well, do strong competitors actually hinder target name retrieval in simple picture naming?

100 subjects, 457 items, ~32k RTs

- Dominant name agreement is associated with faster dominant name production (p<.001).
- Secondary name agreement is also associated with faster dominant name production (p<.001).
- Tertiary name agreement is not shown but is also associated with faster dominant name production (p<.01).

Effects neither reducible to response overlap, nor moderated by semantic (or visual) relations between ‘competition’ and ‘target’

By the same logic that previously interpreted longer RTs as evidence of competitive ‘inhibition’, shorter RTs would reflect competitive ‘facilitation’

Does competitive ‘facilitation’ actually reflect within-subject lexical processing?

Because name agreement is typically estimated by collapsing across participants, any individual participant may not actually consider both options; some might be truck people, others lorry people. If strong alternatives do show lexical access in normal production, then we’d have the best chance of seeing that inhibition by focusing on cases where an individual actually shows such variation (e.g., naming a picture as truck first, and lorry last). 25 native English-speaking Bangor University Psychology students

- Standard IPNP timed picture naming norms retained (Szekely et al., 2003)
- Two sessions, 1-2 weeks apart; different selection orders in each
- Pseudorandomized Subject/Ses/Same Name Form
- Their Session 1 response (assumptions: stable idiolect) Source
- BANGOR (IPNP norms: consumption independent within/between subject electronic selection)

Conclusions

- This project provides the largest set of timed spoken picture naming norms for British English to date.
- Good coverage of native English speakers from England and North Wales (of Sidaway et al.’s 85 norms for the same set)
- Timed picture naming predicts timed picture naming (see norms from Sidaway et al., 2018, and Babcock et al., 2017).
- Secondary and tertiary name agreement provide stable measures of concentrated within subject competition during picture naming.
- But contra predictions for ‘competitive’ lexical selection, strong alternative responses are actually associated with faster target word production.
- Not attributable to response overlap, nor apparently mediated by relations between candidate perceptual or concepts
- Holds even (especially) when individuals demonstrably use both names
- May reflect facilitation within a semantic neighborhood, e.g., in lorryhood, and/or a noncompetitive construing process (p<.001, 2017).
- Any tendency for competition to delay normal production must be very weak
- Previous research claims for competition-based delays in norms or from name agreement manipulations must be ascribed to other processes

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References