Authors of target article: Holly P. Branigan and Martin J. Pickering

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Commentary on Branigan et al; Don't shoot the giant whose shoulders we are standing on.

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Abstract:

Structural priming is a sufficient, but not a necessary condition for proving the existence of representations. Absence of evidence is not evidence of absence. Cognitive science relies on the legitimacy of positing representations and processes without “proving” every component. Also, psycholinguistics relies on other methods, including acceptability judgments, to find the materials for priming experiments in the first place.

There is one thing that we wholeheartedly agree about with the authors: the demonstration of priming of a hypothesized representation is sufficient evidence for the existence of that representation. This is true even if this demonstration is only possible in controlled lab experiments (in natural conversation, people do in fact not have the “tendency to repeat each other’s structural choices” as Healey, Purver & Howes, 2014, have convincingly demonstrated). However, using structural priming as a *necessary* condition for the existence of representations “of any aspect of linguistic structure” would be guaranteed to lead us astray.

First, here is an obvious methodological pitfall that we would be willingly throwing ourselves into. Not finding structural priming for a certain representation might have many different causes, the representation not existing being only one of them. It might also be that we haven’t done the right experiment, or that the effect is too weak to detect. We might be unable to control for important confounding variables, find the proper stimulus materials, or lack the necessary statistical power. The key principle here is that absence of evidence is not evidence of absence.

Second, it is possible that the representation under investigation does in fact exist, but is for some reason not 'primeable' in psycholinguistic experiments. There is no reason to expect that all linguistic representations posited in our theories are primeable. To be able to control for possible effects of meaning, most demonstrations of structural priming have involved a relatively small set of syntactic phenomena, such as the dative alternation or active vs. passive constructions (Mahowald et al., 2016). Does this mean that other syntactic constructions (e.g., small clauses) do not exist? To take an example from a different linguistic domain: Tooley et al. (2014) found that they could not prime intonational phrases. But that should not (and did not) lead the authors to conclude that intonational phrases lack representation.

More generally, the astounding progress that the cognitive sciences in general, and psycholinguistics specifically, have made since the cognitive revolution is founded upon the post-behaviorist assumption that it is legitimate to posit internal representations and processes even if not every one of these components can be "proven" by direct demonstrations of their existence. Edward Tolman and his colleagues (Tolman, 1948) provided convincing evidence of the existence of map-like mental representations in rats, but this never involved priming them.

As for the abandoning of acceptability judgments, the authors' proposal amounts to sawing off the branch we're sitting on. The "success story" of structural priming owes a large debt to half a century of previously developed linguistic theory about syntactic structures, massively informed by acceptability judgments. Without linguists identifying grammatical phenomena, determining their scope, and studying the relationships between different syntactic forms, we wouldn't even know where to start looking. How else would we know that "The pirate gave the princess a parcel" and "The pirate gave a parcel to the princess", or an active and a passive version of a sentence are semantically equivalent if not through using native-speakers' judgements to establish that they are both acceptable for describing a certain state of affairs? In fact, it would be impossible to even develop experimental stimuli without using our (implicit) acceptability judgments; there is a reason that structural priming experiments usually don't contain sentences like "Pirate a parcel the princess the gave".

Structural priming certainly deserves its place in the vast array of methods that are available to psycholinguists. But we see no reason to give it primacy over the many other paradigms that have been, and still are, essential pillars of cognitive science.

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