80 years of building new worlds through knowledge

PRESS RELEASE—PARIS—25 APRIL 2019

Beyond words: The cognitive origins of linguistic meaning

"Mark won't finish writing his book." Without anyone having to tell you so, it will strike you as obvious that Mark has already *begun* his book. Two CNRS researchers and their Australian colleague have just demonstrated that this kind of subconscious reasoning is also applied to non-linguistic messages, consisting of gestures or even stylized, abstract animations. Their work, combining linguistics and experimental psychology, opens up a new field of research into the cognitive origins of linguistic phenomena. The team's findings have been published in *PNAS* (24 April 2019).

Languages provide us with several means of conveying information. Take, for example, the following sentence: "Mark will finish writing his book." And its negation: "Mark won't finish writing his book." In both cases, we understand that Mark has already begun penning his opus. This information is transmitted implicitly, and we see that it cannot be negated. These qualities are characteristic of what linguists call *presuppositions*. Modern linguistics studies presuppositions and other ways of relaying information that it collectively calls *inferences*, categorizing the various kinds to understand how we process them and what their functions are.

So where do inferences come from? For example, is the presupposition above the product of our understanding that we must "begin" something before we can "finish" it, or rather of what we were taught about the word "finish" while learning English? Linguists usually trace the origin of such inferences to triggering words, as though the mental dictionary we construct when learning our language indicated that the word "finish" entails a presupposition.

To evaluate this concept, two CNRS researchers from the Laboratoire de Sciences Cognitives et Psycholinguistique (CNRS / ENS / EHESS) and the Institut Jean-Nicod (CNRS / ENS)[1,2] and their Australian colleague from Western Sydney University tried to get participants to understand hybrid sentences made up of ordinary words combined with novel vehicles of meaning to which they had not previously been exposed—like certain gestures (for example, taking off eyeglasses) and visual animations (such as a bar that changed colour).

They first demonstrated that the participants immediately understood the unfamiliar gestures and animations. More importantly, these new "vehicles" are rooted in language, so that the standard linguistic tests—like negation, for presuppositions—applied. Hence their work proved that gestures and animations yield a dense spectrum of linguistic inferences arising spontaneously, without learning—or even words.

These investigations also showed how the powerful methods of modern linguistics can be applied to media other than language. The study of such non-linguistic media can help decipher the cognitive origins of various inferences, origins beyond words.

Notes

1 Philippe Schlenker, CNRS researcher at the Institut Jean-Nicod, is also Global Distinguished Professor at New York University (NYU).
2 The Institut Jean Nicod is affiliated with the École des hautes études en sciences sociales (EHESS).

Bibliography

Linguistic inferences without words. Lyn Tieu, Philippe Schlenker et Emmanuel Chemla. *PNAS*, le 24 avril 2019. DOI : 10.1073/pnas.1821018116

Contacts

Chercheur CNRS | Emmanuel Chemla **|** chemla@ens.fr

Presse CNRS | François Maginiot | **T +33 1 44 96 43 09** | francois.maginiot@cnrs.fr