Beyond iconicity: aspects of metonomy and indexicality in sign grounding

Jonas Nölle[1], Riccardo Fusaroli[2] & Kristian Tylén[2]
[1]University of Edinburgh, UK; [2]Aarhus University, Denmark
j.nolle@sms.ed.ac.uk

Recently there has been renewed interest in how communication systems ground their meaning (e.g., Harnad, 1990; Galantucci, 2005; Nölle et al., 2018), with a focus on the mechanisms underlying language evolution (see Kirby, 2017 for a review). A recurrent experimental finding is that participants tend to resort to iconicity as a main strategy for bootstrapping meaning when creating a communication system from scratch (Garrod et al., 2007; Tamariz, 2017). This resonates with another set of recent studies suggesting that languages are less arbitrary than originally thought in that they display systematic sound-meaning correspondences, so-called sound symbolism. (Dingemanse et al., 2015; Blasi et al., 2016). While iconicity undoubtedly plays a central role in symbol grounding, we argue that a more nuanced look at grounding mechanisms is overdue (hence the title "beyond iconicity"). We hypothesize that some of the experimental findings (our own included) might be biased by a particular kind of experimental design, where participants communicate concepts to each other using drawing, touchpad or gesture, without sharing a visual-spatial context. This leaves deictic communication (such as pointing) impossible that otherwise could point to indexicality as another fundamental grounding mechanism (Deacon, 1997; Diessel, 1999; Tomasello, 2008). In this paper, we argue that even the kind of experimental observations that are currently discussed under the headline of iconicity might in fact incorporate central elements of indexicality, metonymy and systematicity. Reanalysing data from a recent study (Nölle et al., 2018), we suggest that iconicity interacts with such other fundamental cognitive strategies. In fact, we present evidence that participants are not really preoccupied with representing the referent as they are with disambiguating the referent from contextual competitors. Thus participants are often not making signs (in this case gestures) that point to the referent as a whole by means of resemblance, but are rather identifying the minimally discriminating traits of the referent that differentiates it from competing referents in the context. The resulting signs are thus not icons of the referents, but of individual traits that metonymically refer to their referents. Similar observations can be made in graphical communication studies (Galantucci, 2005; Garrod et al., 2007; Fay, Garrod, Roberts, & Swoboda, 2010). A reinterpretation of this grounding behaviour thus embeds iconicity in an indexical effort to disambiguate referents (rather than representing them) in a proto-Saussurean fashion, where meanings from very early in the grounding process are defined in opposition to other meanings in the particular context of communication. In conclusion, indexicality might be another fundamental cognitive strategy and grounding mechanism in language evolution besides iconicity.

References

Blasi, D. E., Wichmann, S., Hammarström, H., Stadler, P. F., & Christiansen, M. H. (2016). Sound–meaning association biases evidenced across thousands of languages. *Proceedings of the National Academy of Sciences*, *113*(39), 10818–10823.

Deacon, T. W. (1997). *The symbolic species: the co-evolution of language and the brain*. New York: Norton.

Diessel, H. (1999). *Demonstratives: Form, function and grammaticalization*. John Benjamins Publishing.

Dingemanse, M., Blasi, D. E., Lupyan, G., Christiansen, M. H., & Monaghan, P. (2015). Arbitrariness, Iconicity, and Systematicity in Language. *Trends in Cognitive Sciences*, *19*(10), 603–615.

Fay, N., Garrod, S., Roberts, L., & Swoboda, N. (2010). The Interactive Evolution of Human Communication Systems. *Cognitive Science*, *34*(3), 351–386.

Galantucci, B. (2005). An Experimental Study of the Emergence of Human Communication Systems. *Cognitive Science*, *29*(5), 737–767.

Garrod, S., Fay, N., Lee, J., Oberlander, J., & MacLeod, T. (2007). Foundations of Representation: Where Might Graphical Symbol Systems Come From? *Cognitive Science*, *31*(6), 961–987.

Harnad, S. (1990). The symbol grounding problem. *Physica D: Nonlinear Phenomena*, *42*(1), 335–346.

Kirby, S. (2017). Culture and biology in the origins of linguistic structure. *Psychonomic Bulletin & Review*, *24*(1), 118–137.

Nölle, J., Staib, M., Fusaroli, R., & Tylén, K. (2018). The emergence of systematicity: How environmental and communicative factors shape a novel communication system. *Cognition*, *181*, 93–104.

Tamariz, M. (2017). Experimental Studies on the Cultural Evolution of Language. *Annual Review of Linguistics*, *3*(1), 389–407.

Tomasello, M. (2008). *Origins of human communication*. Cambridge, Mass: MIT Press.