From iconic pictures to "grammatical" templates: Modeling the evolution of internet memes

Ana Krajinović[1] and Xavier Rodrigues[2]

[1]Heinrich Heine University Düsseldorf
[2]University of Bochum

Language is known for incorporating both iconicity and arbitrariness in its lexicon (Dingemanse et al., 2015), which obeys grammar, a system of higher abstraction. While language evolution provides insight into how humans create abstract systems out of and with iconicity (Monaghan & Roberts, 2021), multimodal constructions such as internet memes can provide a wealth of data on this evolution pattern.

In this paper, we argue that many image macros or internet memes change over time by going from an iconic picture or scene to an arbitrary association of image and text, and finally to their own "grammatical" template, in a process akin to grammaticalization, while at the same time maintaining a certain level of iconicity and semantic relatedness to the source material.

We analyze ten different exploitable memes (ca. 2000 instances), each consisting of an image macro with text. We collect information on the date, format and semantic change over time of a sample of meme instances shared on Know Your Meme (knowyourmeme.com). Our classification of semantic change describes the incremental stages of change of text and picture in memes (see Figure 1). These stages are parallel to the stages of grammaticalization, such as use in new contexts (innovation), semantic bleaching and erosion (change of text and picture), and decategorialization (emergence of a new meme). We also show that these stages follow the same temporal ordering across memes (cf. Figure 1), resembeling the unidirectionality of grammaticalization.

We show that the change and replacement of text and picture lead to a higher degree of arbitrariness of form and meaning of the meme in relation to its original iconic meaning. We also show that, statistically, wider transmission leads to a higher rate of semantic change in the direction of higher abstraction (see Figure 2).

References

Dingemanse, Mark, Damián E Blasi, Gary Lupyan, Morten H Christiansen & Padraic Monaghan. 2015. Arbitrariness, iconicity, and systematicity in language. *Trends in cognitive sciences* 19(10). 603–615.

Monaghan, Padraic & Seán G Roberts. 2021. Iconicity and diachronic language change. *Cognitive Science* 45(4). e12968. doi:https://doi.org/10.1111/cogs.12968.
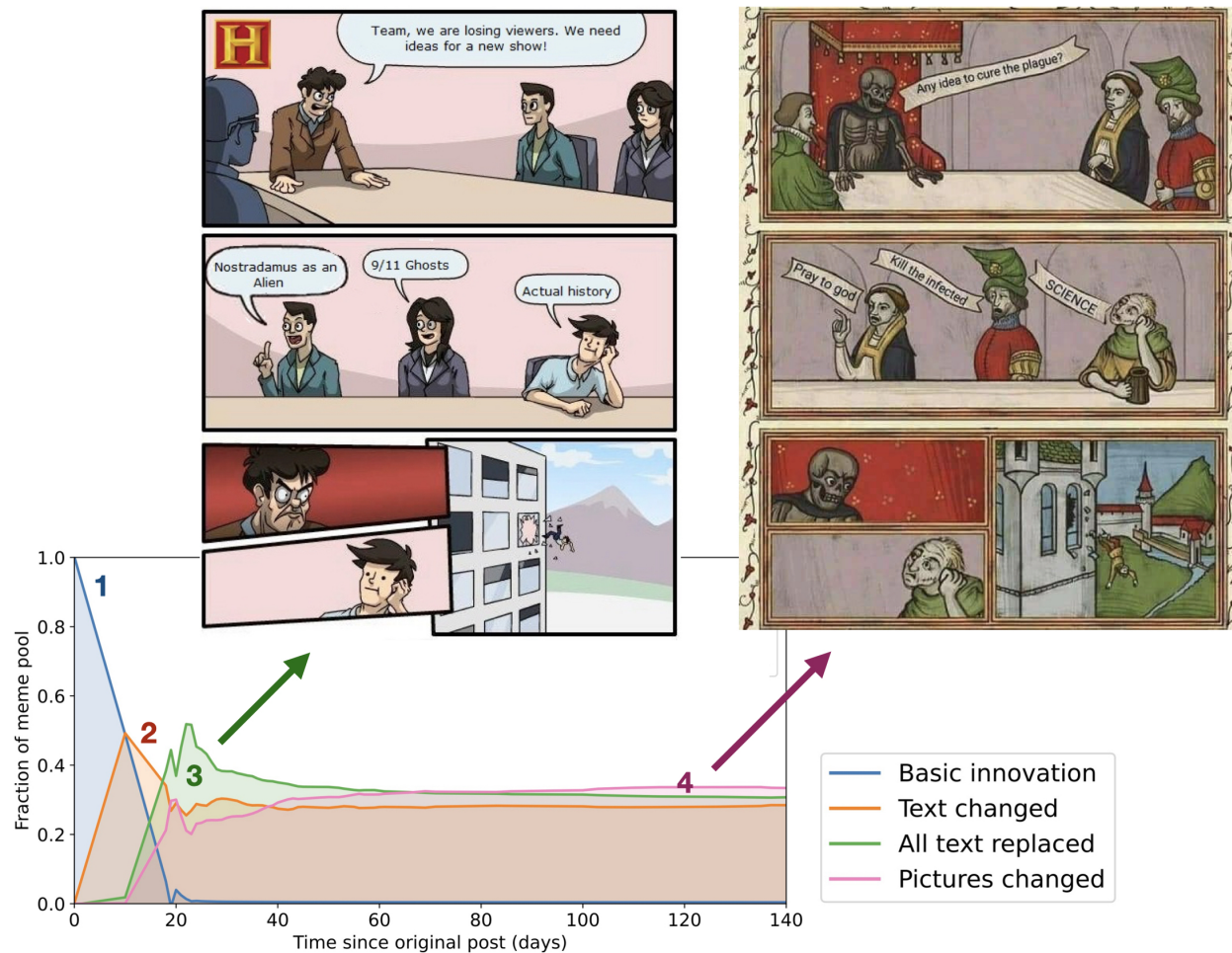
Figure 1: Fraction of memes (N=277) in each stage of evolution over time of the "Boardroom suggestion" meme with examples
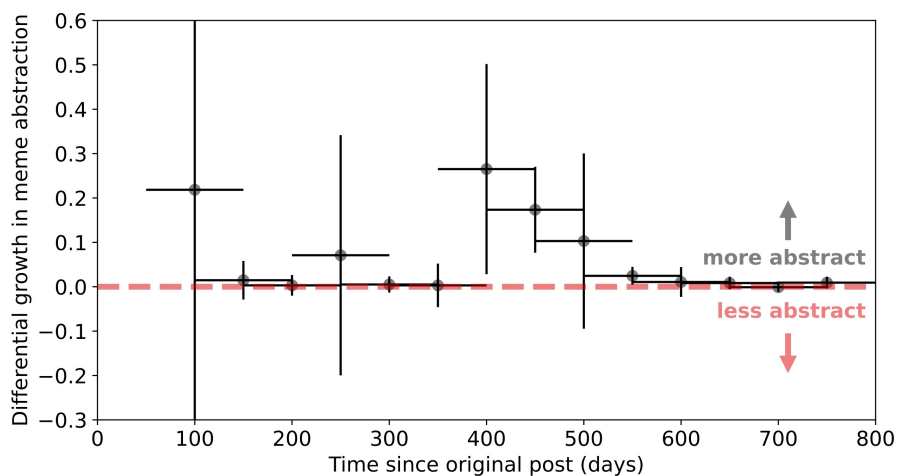

Figure 2: The rate of change of the average level of abstraction over time in our meme pool