

**From iconic pictures to
“grammatical” templates:
Modeling the evolution of internet
memes**

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Introduction

- **Grammaticalization as a model of language evolution:**
 - **from lexical to grammatical**
 - **from concrete to abstract**

**LEXICAL
MEANING**

+ LEXICAL

e.g. 'go'

e.g. 'going to' FUT

+ABSTRACT

Introduction

- **Grammaticalization as a model of language evolution:**
 - from lexical to grammatical
 - from concrete to abstract
- **Lack of precise data on language transmission patterns**
 - the relationship between transmission patterns and semantic change is not well understood

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- Hypothesis 1: Image macros (“memes” in this talk) follow an evolution pattern akin to grammaticalization.
- Hypothesis 2: In periods of high transmission (virality), the rate of semantic change is increased, in the direction of higher abstraction.

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Internet memes

- **Image Macros: multimodal constructions with text superimposed on an image (Zenner & Geeraerts, 2018; Dancygier & Vandelanotte, 2017)**
 - we focus on viral exploitable memes with text

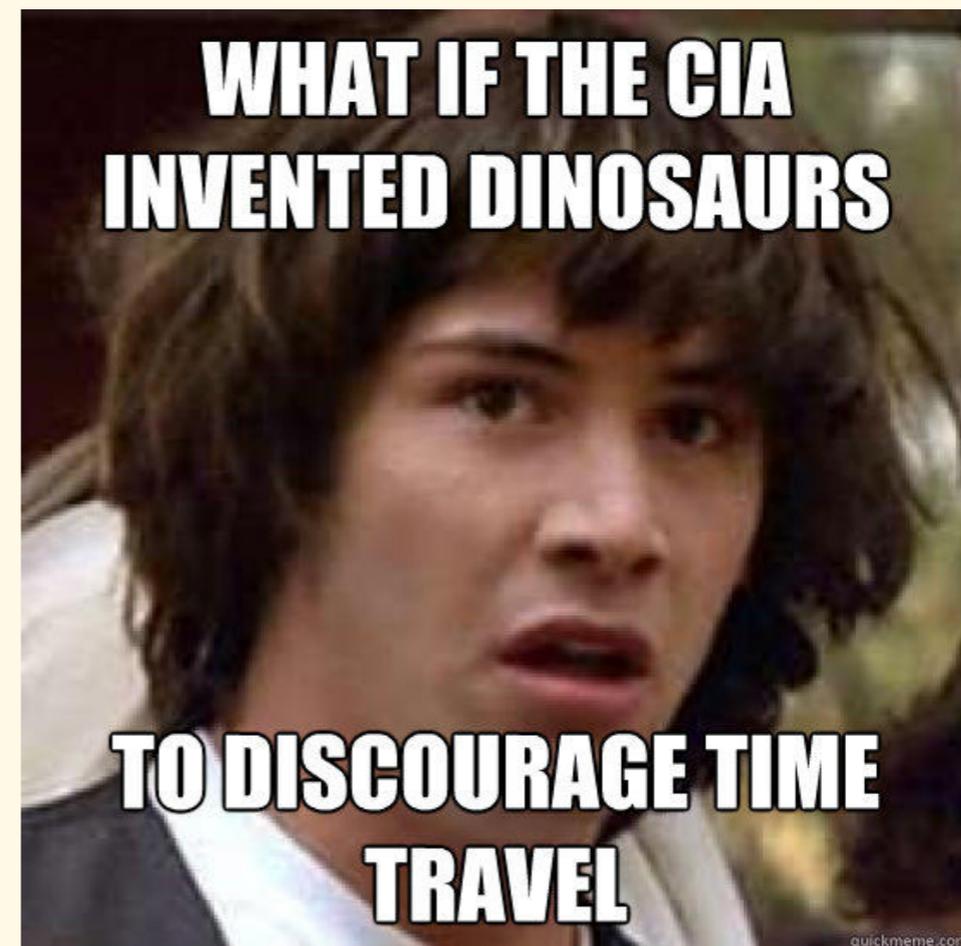
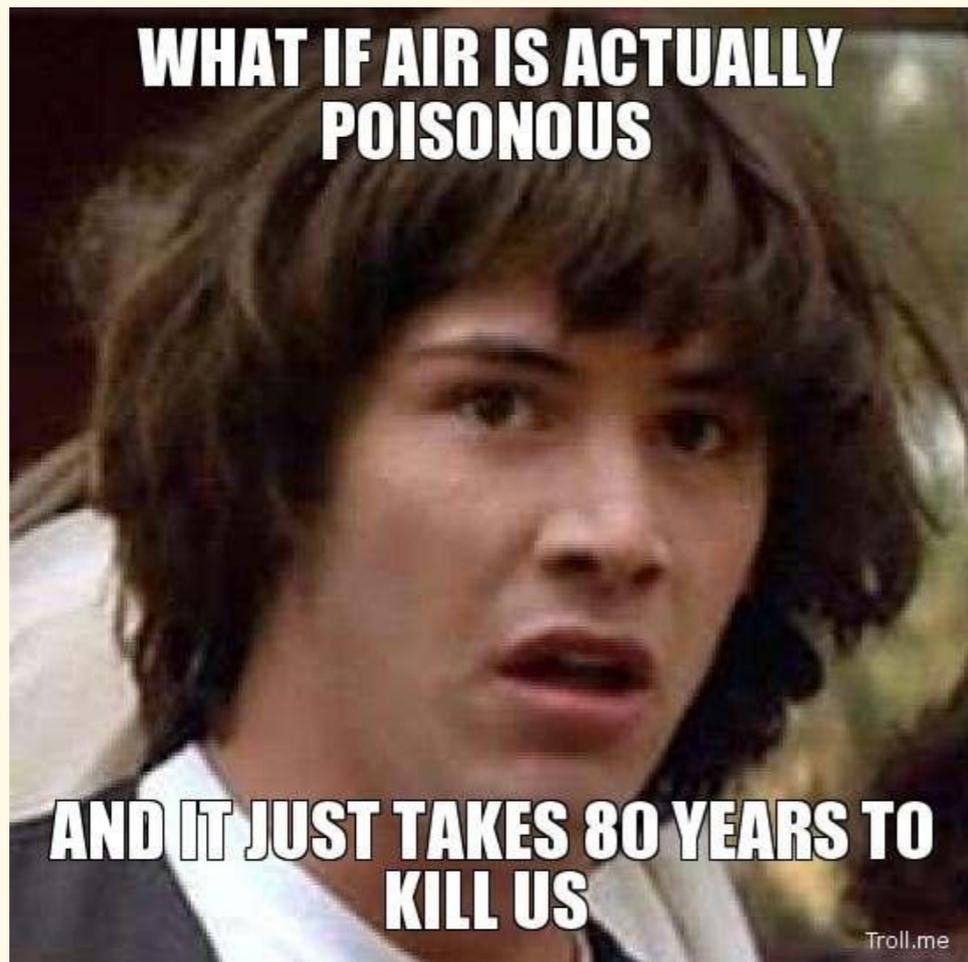


Meanwhile in Europe:



Internet memes

- we also include several “advice animal image macros” with templatic text



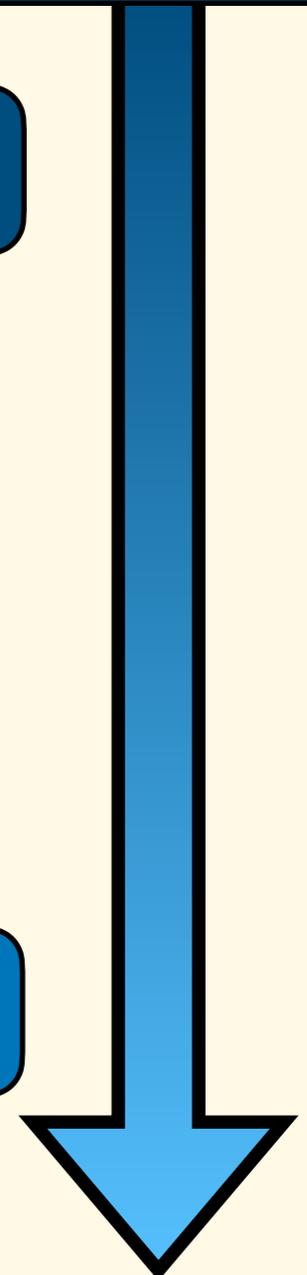
Grammaticalization

- **Stages of grammaticalization** (Kuteva et al. 2019:3):
 - **extension: use in new contexts**
 - **semantic bleaching: loss in meaning content**
 - **erosion: phonetic reduction**
- **UNIDIRECTIONALITY** (Kuteva et al. 2004, 2019)

**LEXICAL
MEANING**

+ LEXICAL

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From iconic to abstract

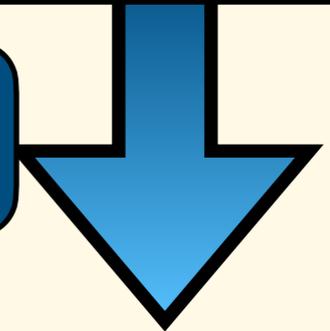


I don't think the system works. How would you have it work?

Original scene from "Attack of the Clones"

ICONIC
MEANING

+ ICONIC



+ABSTRACT

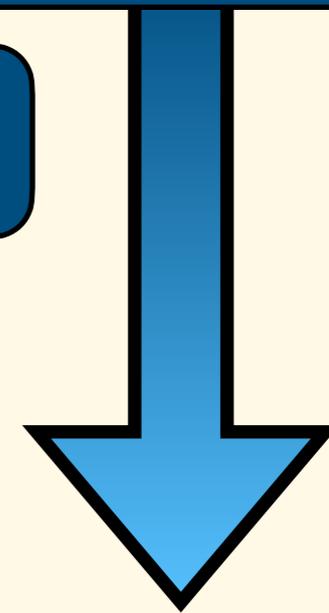
From iconic to abstract



Innovation: use of iconic pictures in a new context
(<https://twitter.com/starwarsposting>)

**ICONIC
MEANING**

+ ICONIC



+ABSTRACT

From iconic to abstract



ICONIC
MEANING

+ ICONIC

+ABSTRACT

**Text changed: A meme template
(semantic bleaching) and text erosion**

From iconic to abstract



ICONIC
MEANING

+ ICONIC

+ABSTRACT

Pictures changed: Erosion of the original text and picture (meaning based on the knowledge of the meme)

Method

- **we analyzed 1787 instances of 10 randomly (2-3 per exploitable genre) selected memes available on knowyourmeme.com:**

Method

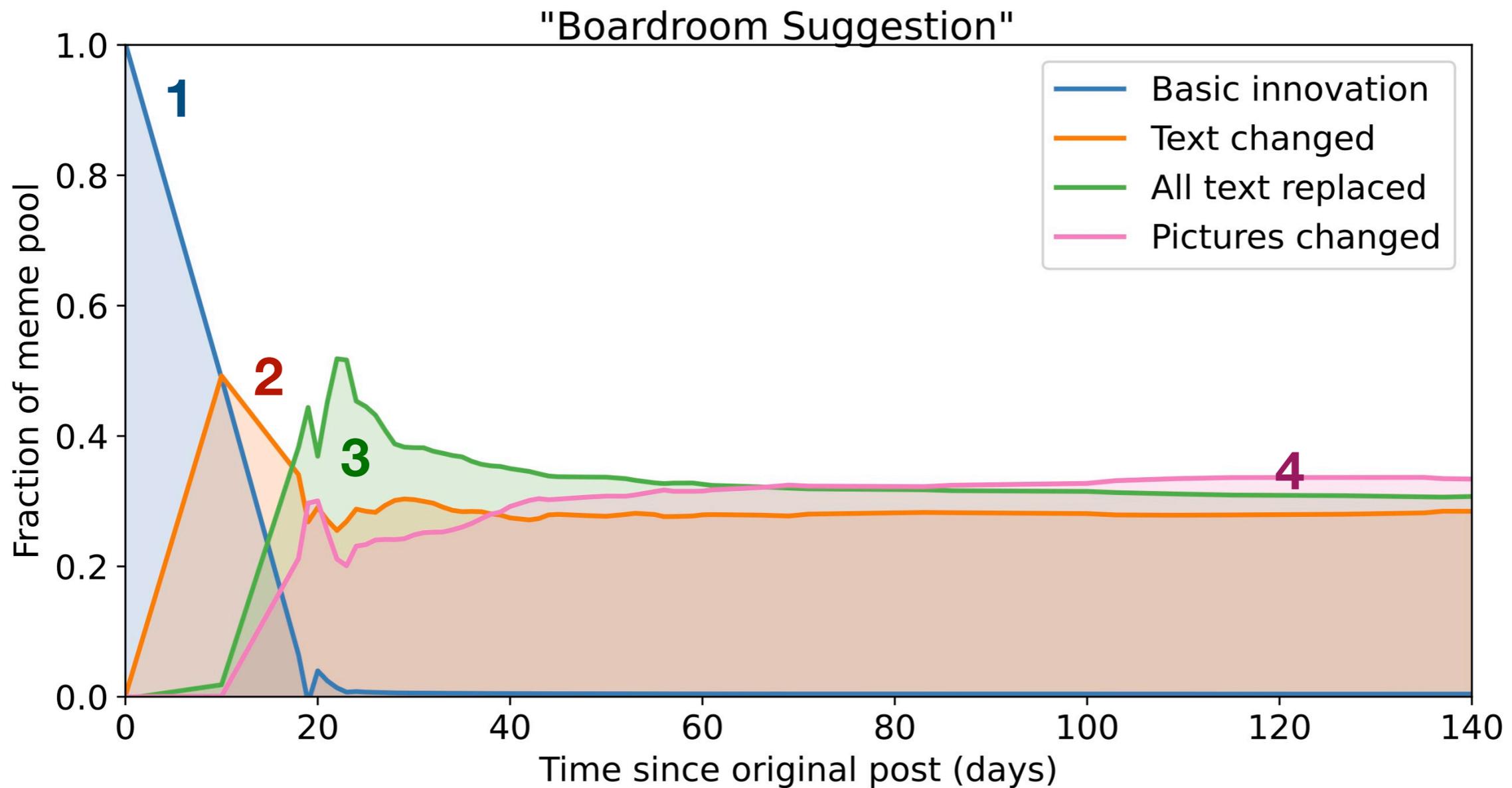
- **we analyzed 1787 instances of 10 randomly (2-3 per exploitable genre) selected memes available on knowyourmeme.com:**
 - **date of publication**
 - **we classified the semantic change (measured through change of text and/or picture) with values:**
 - **0: Original source (if applicable/relevant)**
 - **1: Innovation**
 - **2: Add text/images to template text**
 - **3: Change template text**
 - **4: Change text and image order**
 - **5: All text changed**
 - **6: Change pictures (can still see original)**
 - **7: All pictures replaced, same context**
 - **8: All pictures replaced, new context**
 - **9: New meme**

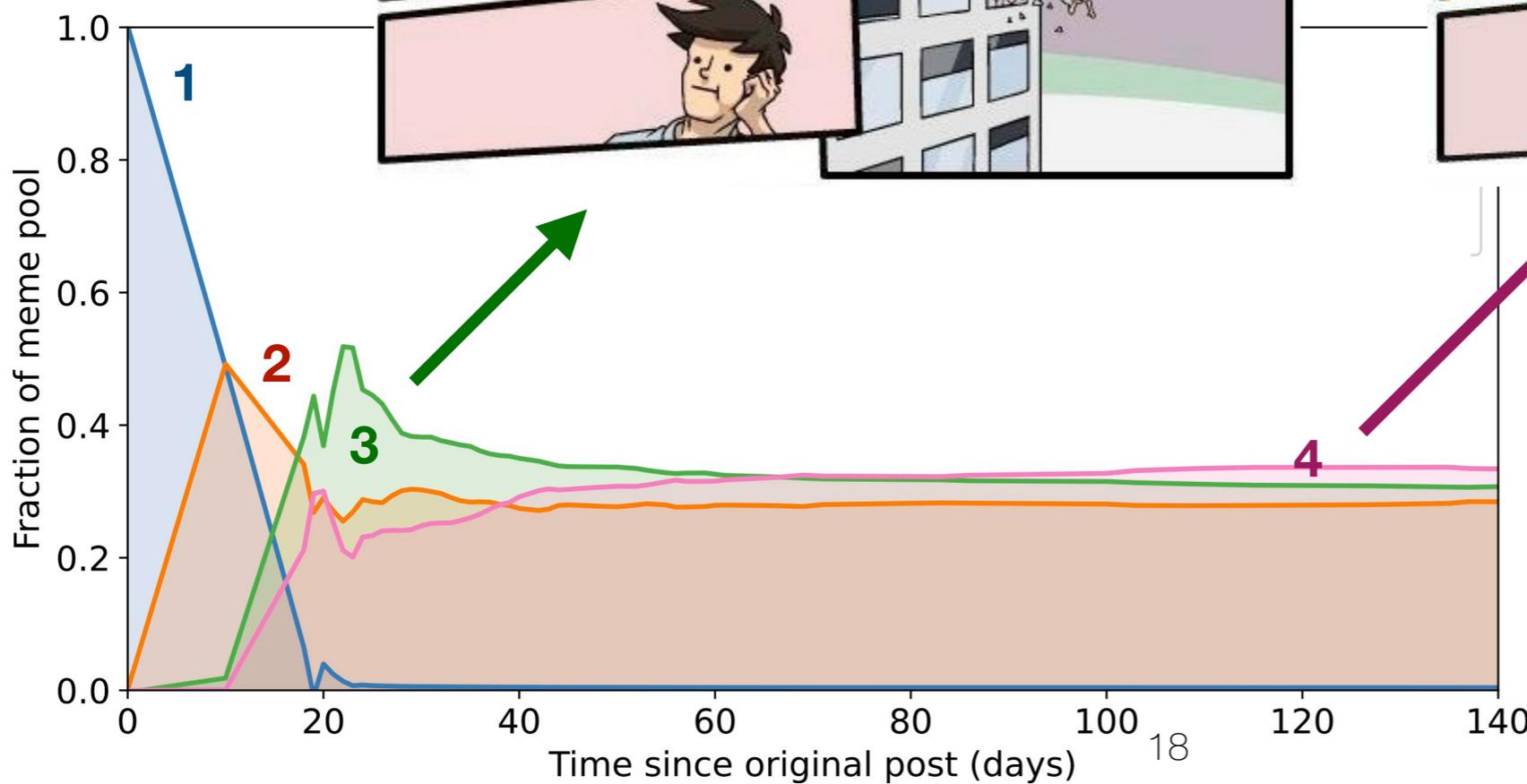
Results:
**The evolution pattern of
Internet memes**

The evolution pattern

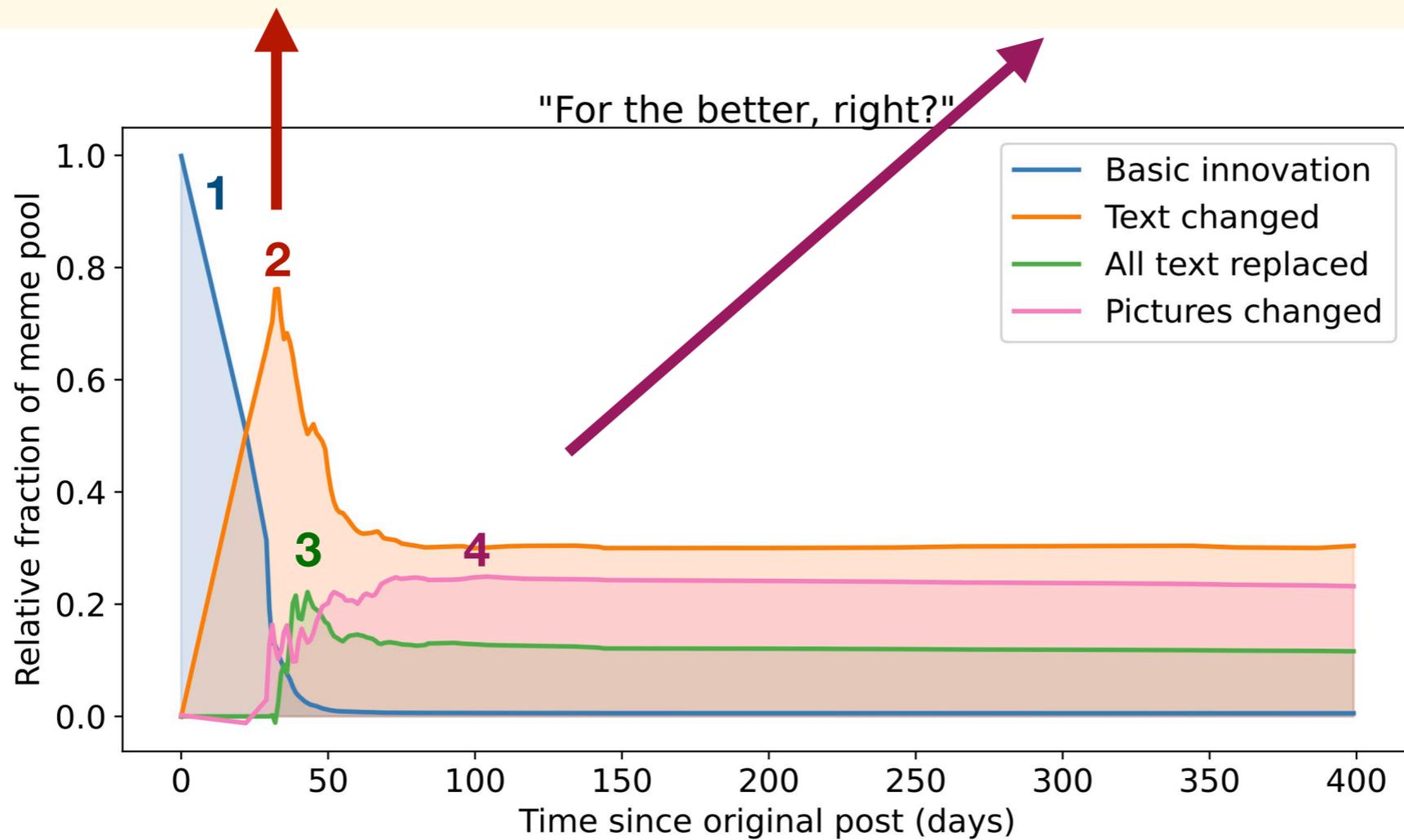
Example: “Boardroom suggestion”

- fraction of memes (N=277) in each stage of evolution over time

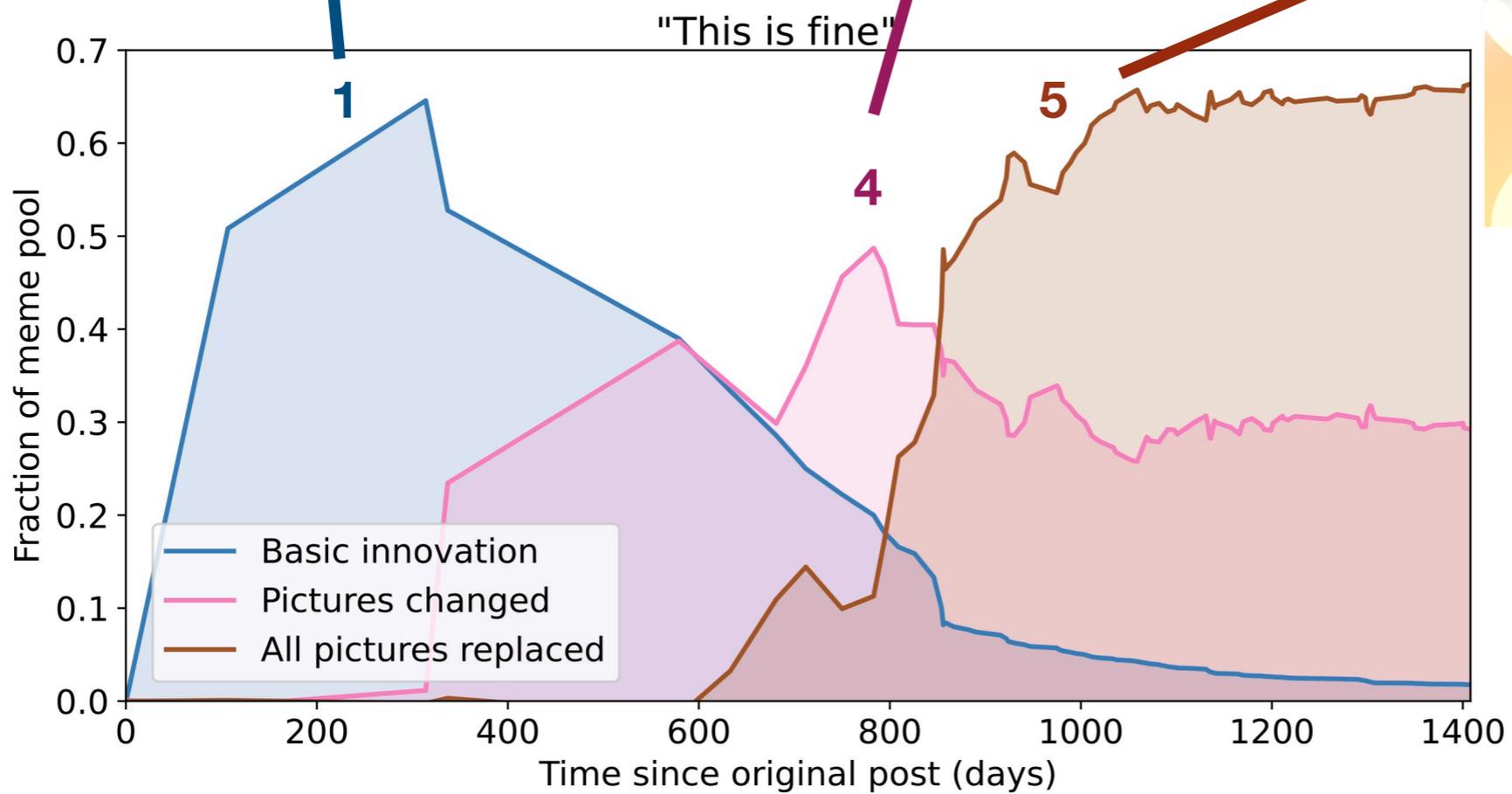
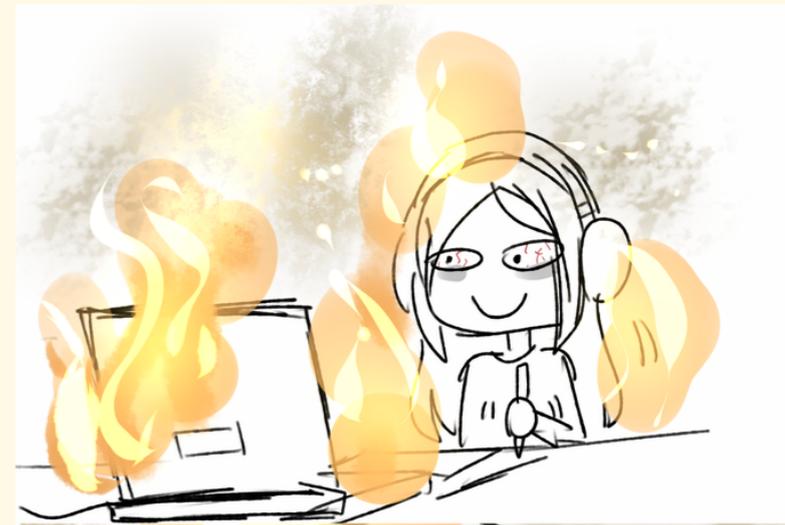




- Basic innovation
- Text changed
- All text replaced
- Pictures changed



Meanwhile in Europe:

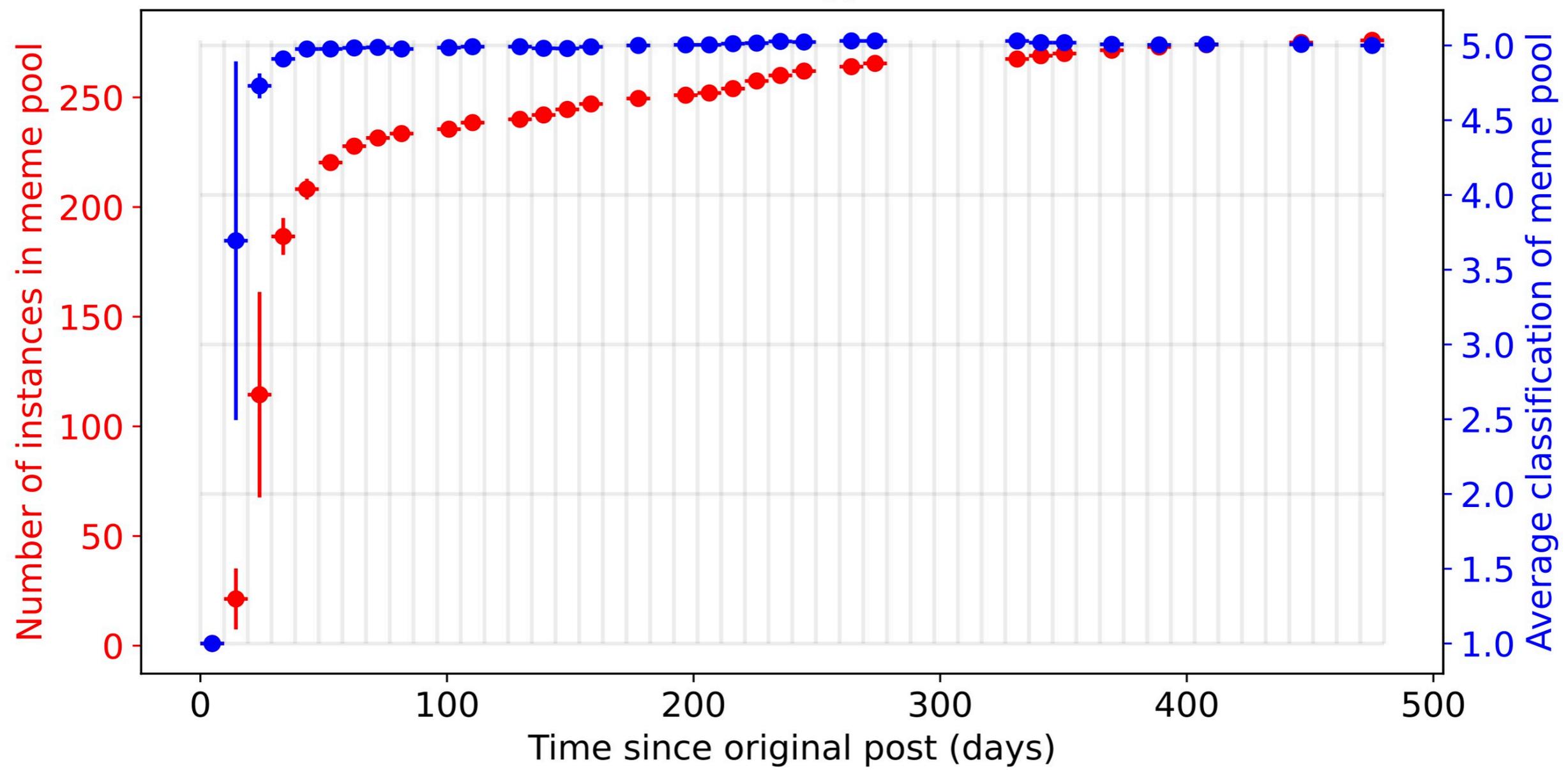


Results:
**Virality and semantic
change**

Virality increases the rate of semantic change



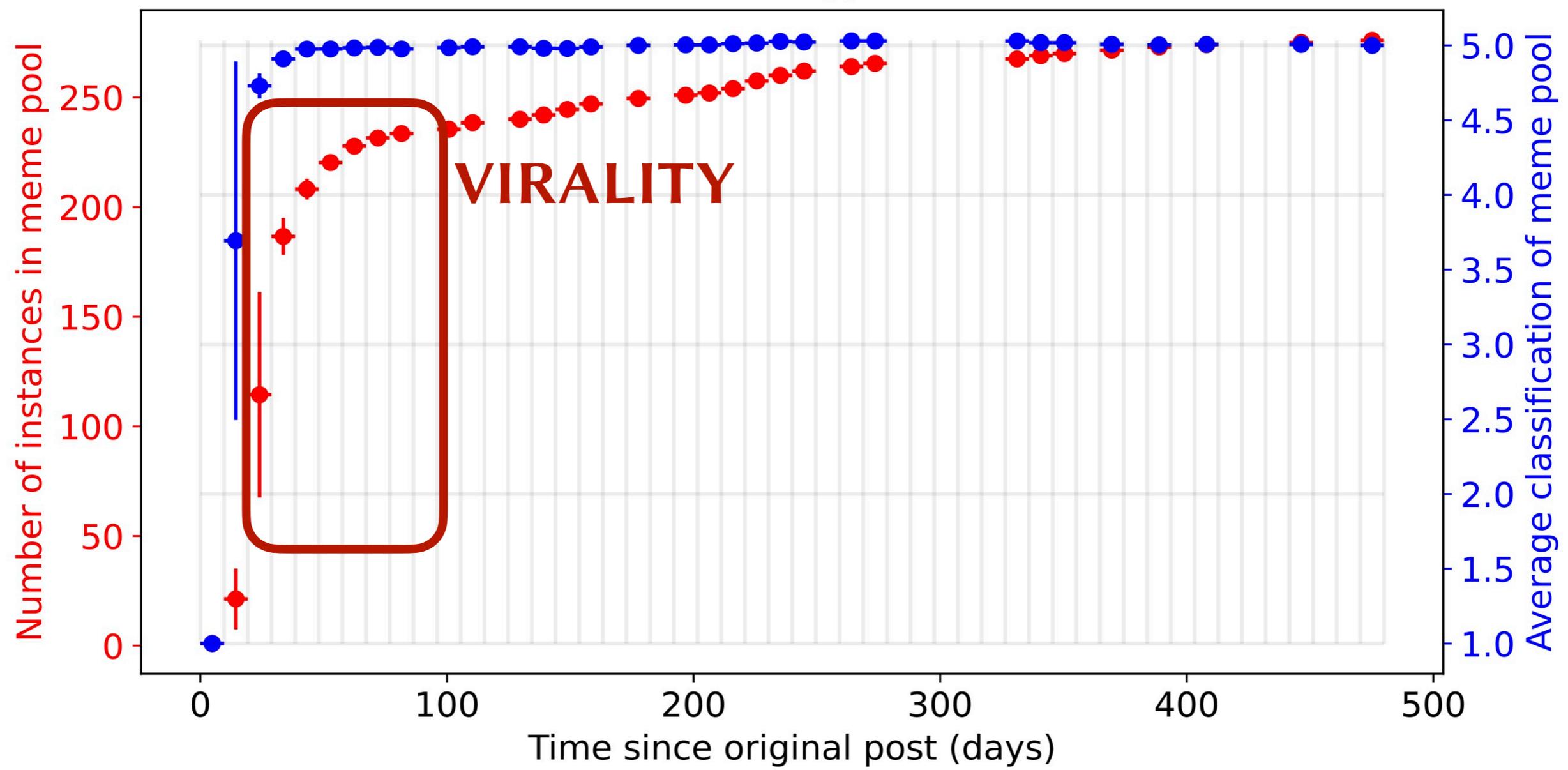
"Boardroom Suggestion"



Virality increases the rate of semantic change



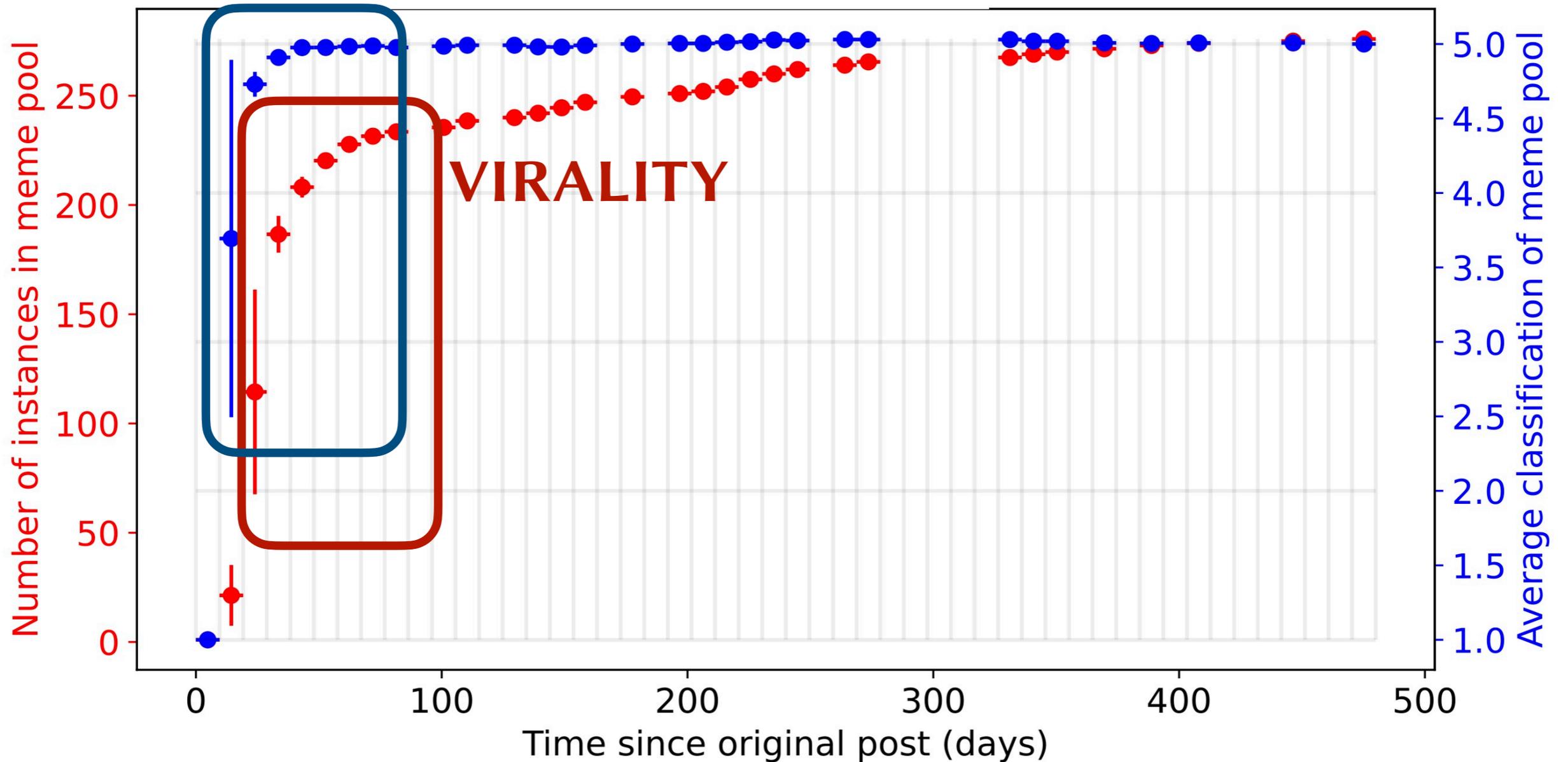
"Boardroom Suggestion"



Virality increases the rate of semantic change



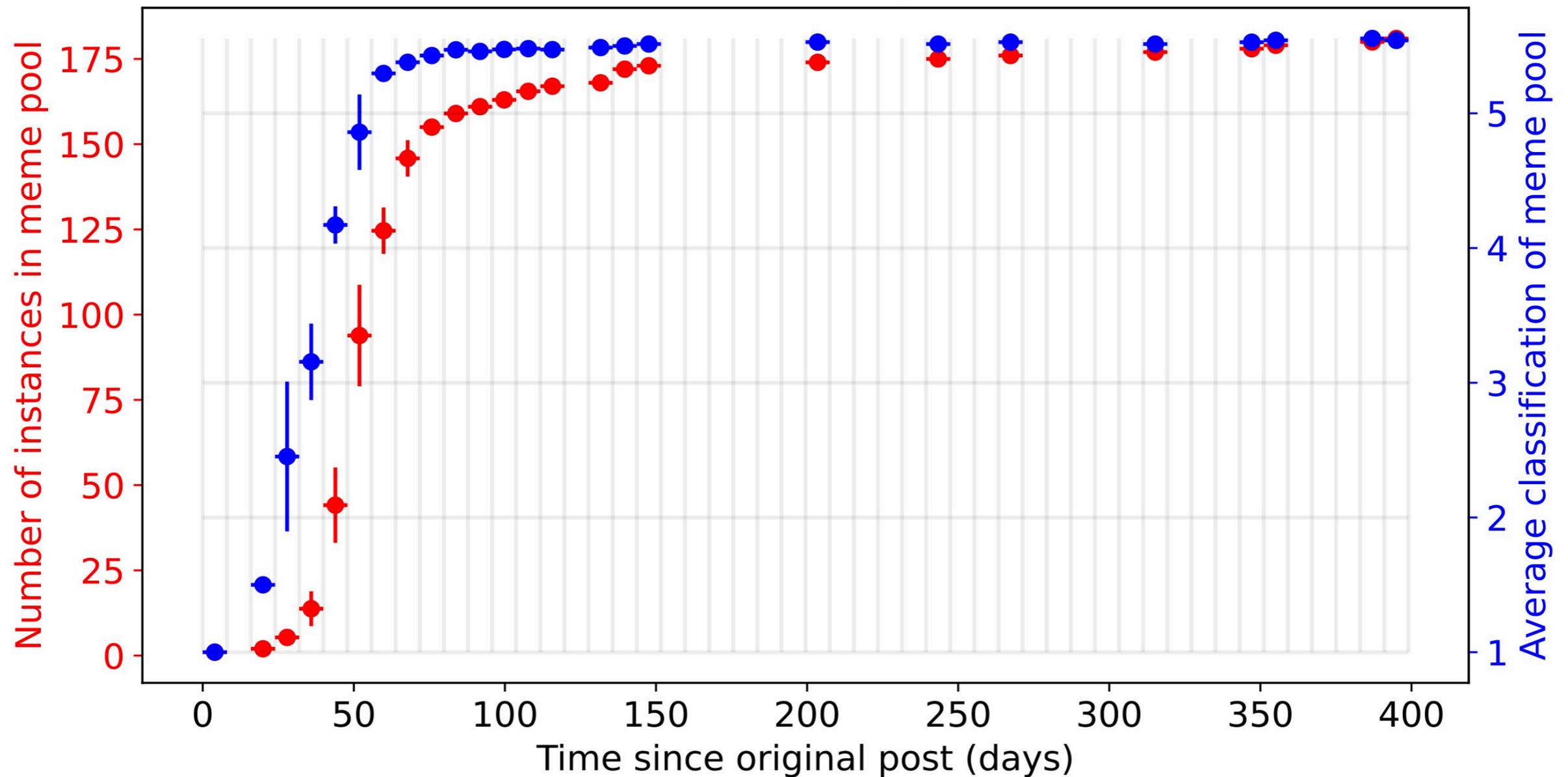
GROWTH OF ABSTRACTION



Virality increases the rate of semantic change



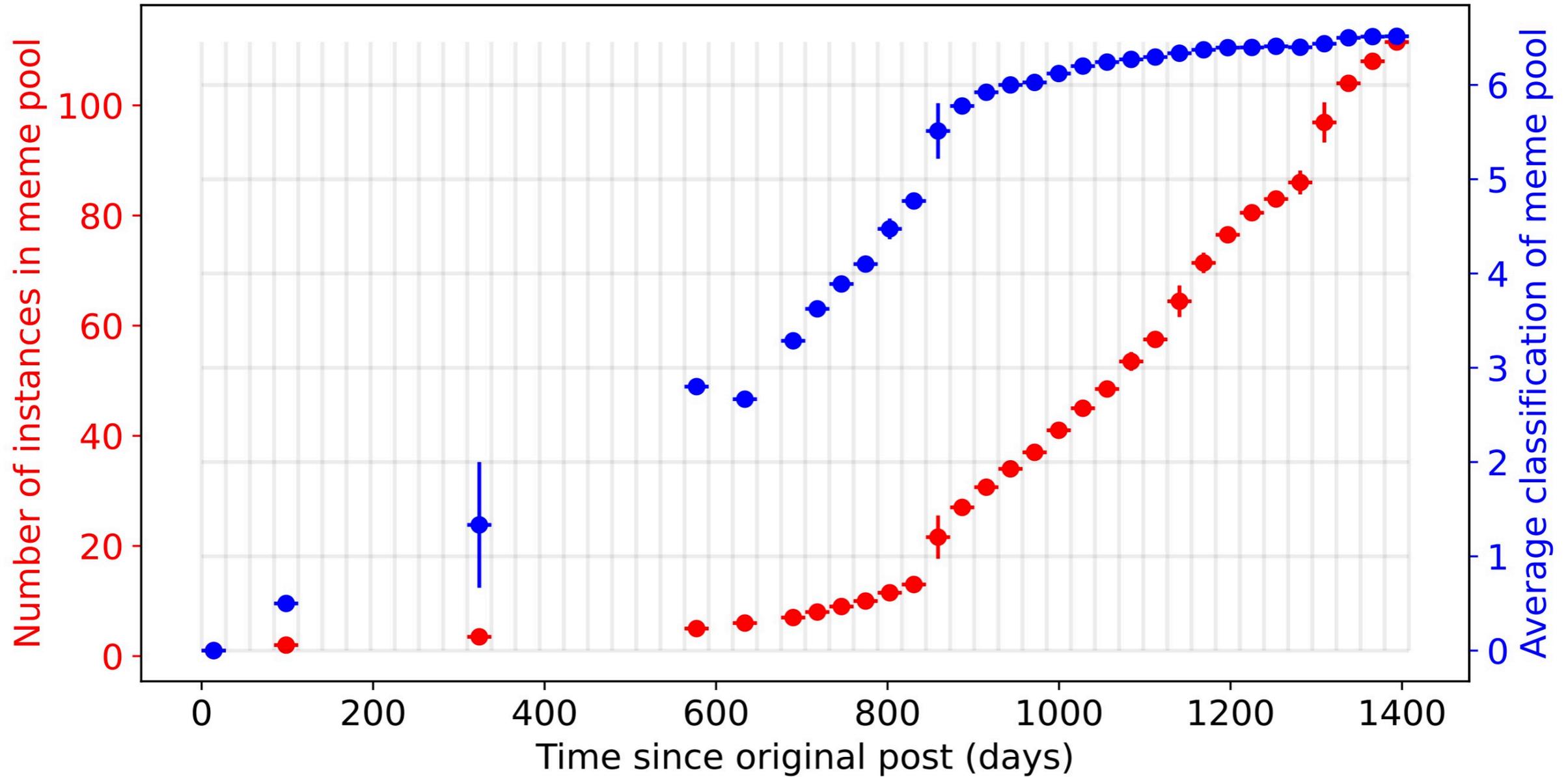
"For the better, right?"



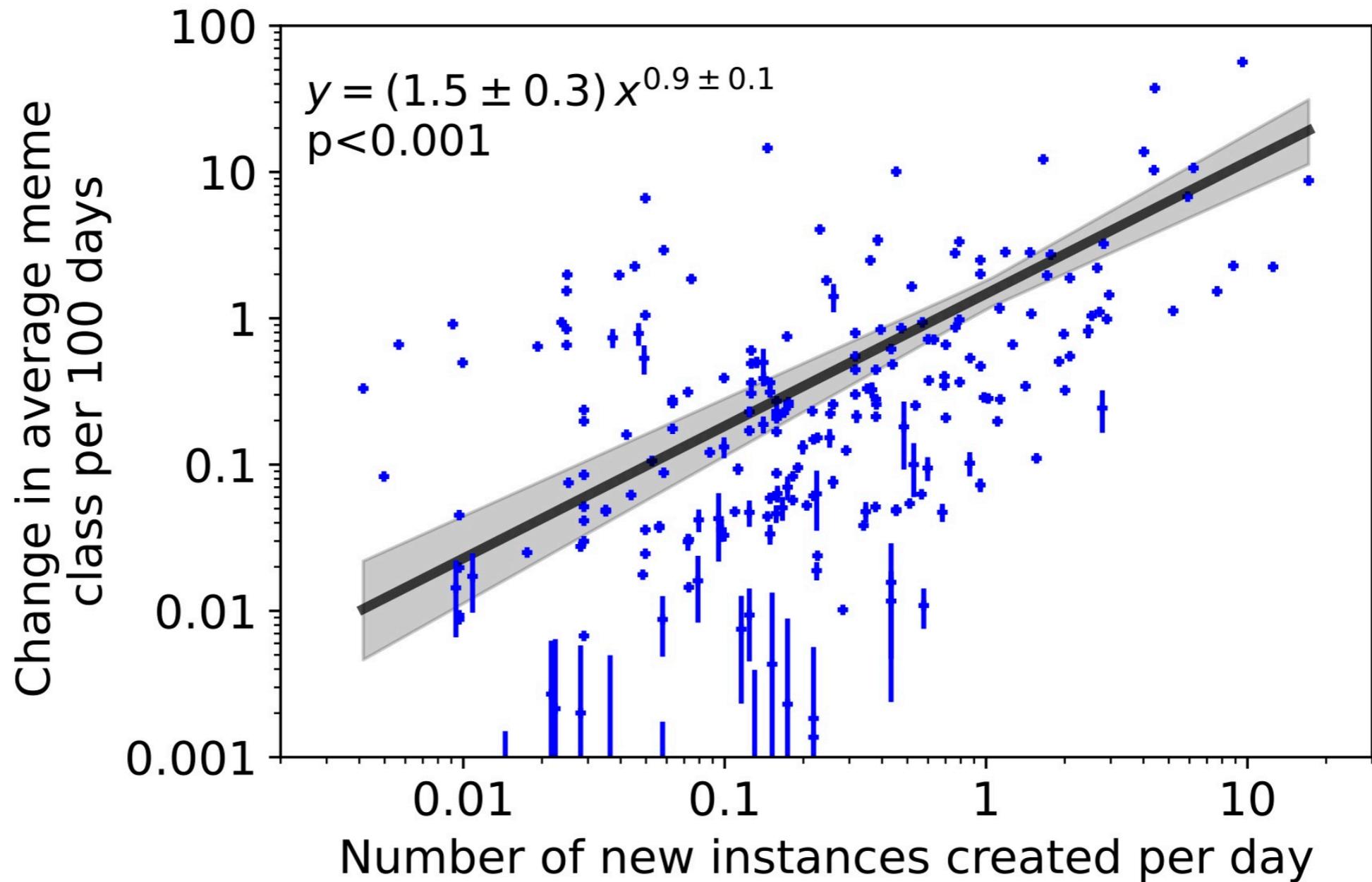
Virality increases the rate of semantic change



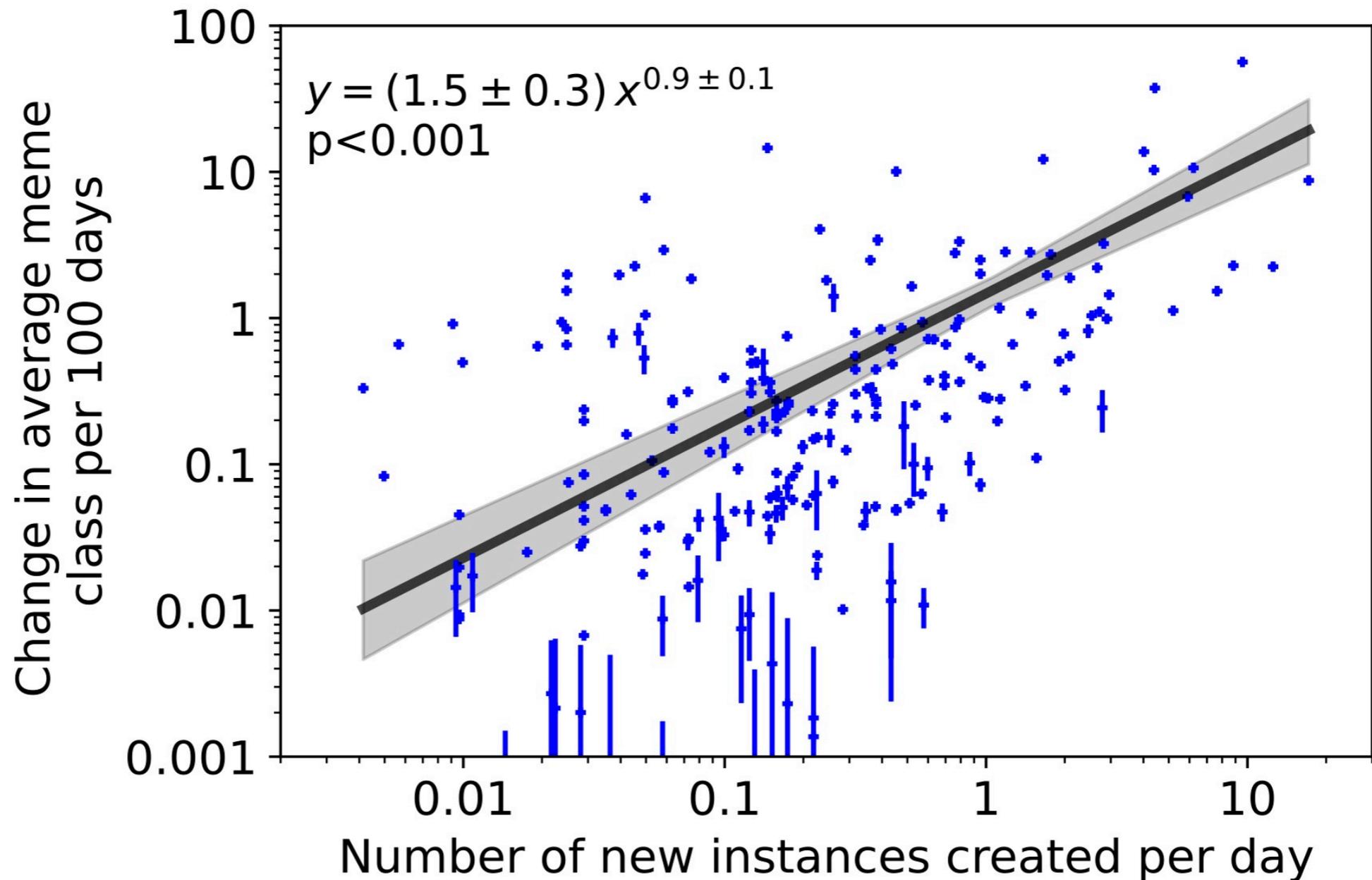
"This is fine"



Virality increases the rate of semantic change

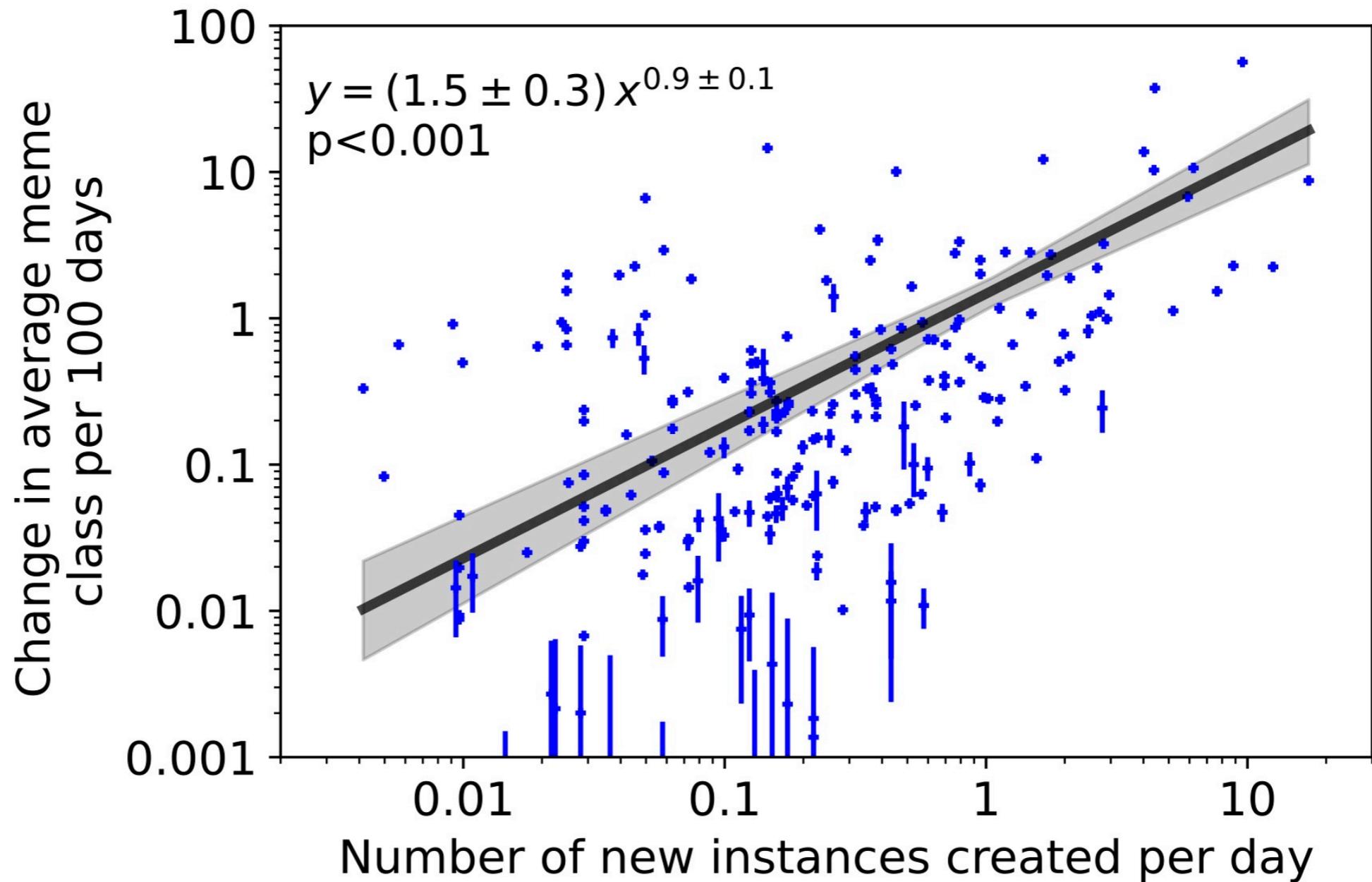


Virality increases the rate of semantic change



Proxy for virality

Virality increases the rate of semantic change



Proxy for abstraction

Proxy for virality

Conclusion

Evolution pattern (Hypothesis 1):

- **exploitable memes become more abstract over time, following stages parallel to grammaticalization**
 - **unidirectional ordering**

Transmission (Hypothesis 2):

- **statistically, higher transmission (virality) leads to a higher rate of semantic change in the direction of higher abstraction**
 - **the rate of growth in abstraction of a meme correlates proportionally to its virality**

THANK YOU!



References

Dancygier, Barbara & Lieven Vandelanotte. 2017. Internet memes as multimodal constructions. *Cognitive Linguistics* 2017; 28(3): 565–598. <https://doi.org/10.1515/cog-2017-0074>.

Hopper, Paul J., and Elizabeth Closs Traugott. Grammaticalization. Cambridge University Press, 2003.

Kuteva, T., Heine, B., Hong, B., Long, H., Narrog, H. and Rhee, S., 2019. World lexicon of grammaticalization. Cambridge University Press.

Zenner, Eline & Dirk Geeraerts. 2018. One does not simply process memes: Image macros as multimodal constructions. In Esme Winter-Froemel & Verena Thaler (eds.), *Cultures and traditions of wordplay and wordplay research*, 167–194. Berlin: De Gruyter.