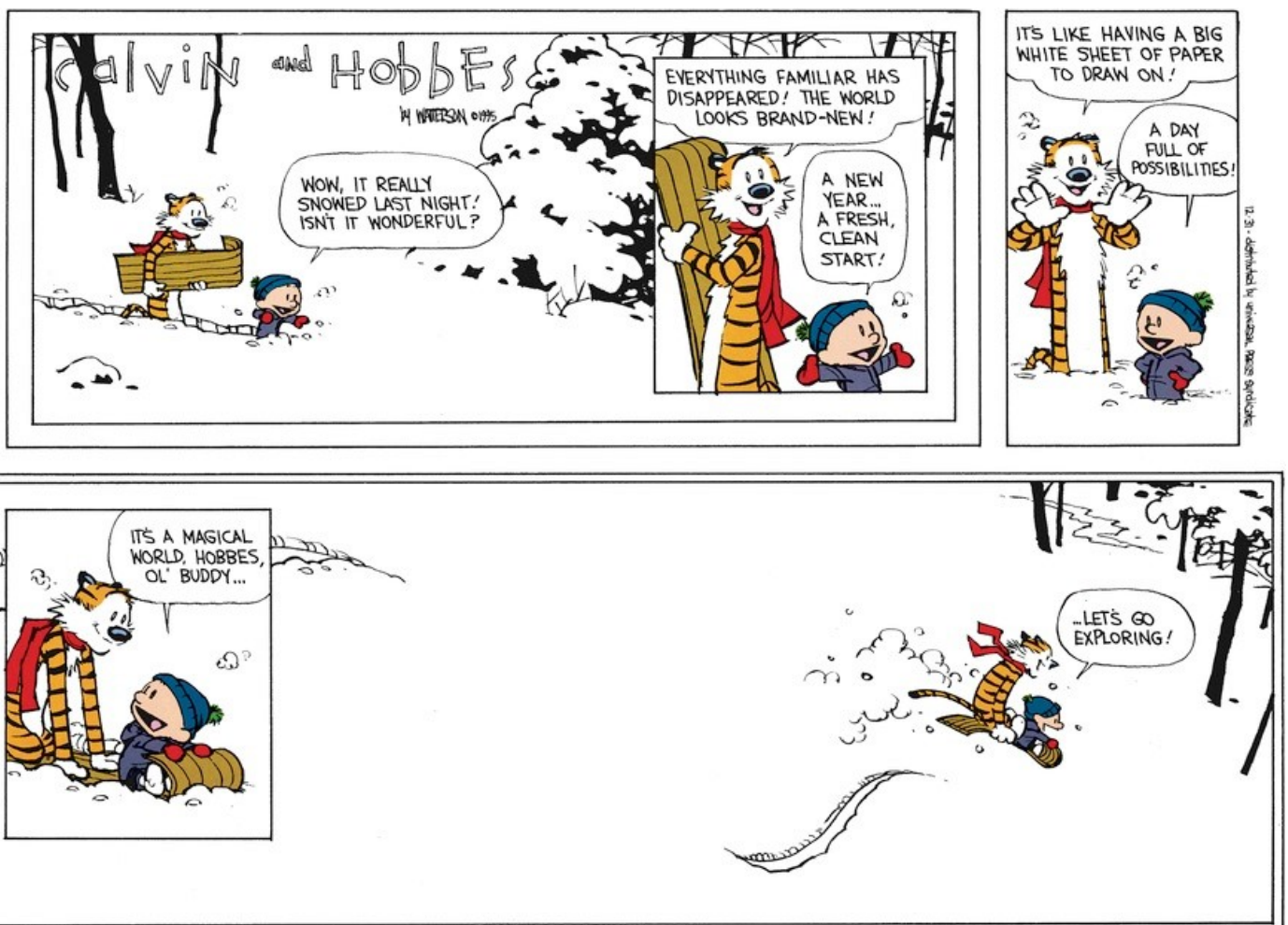# Twitter Thread by Dr. Neil Cohn

Dr. Neil Cohn
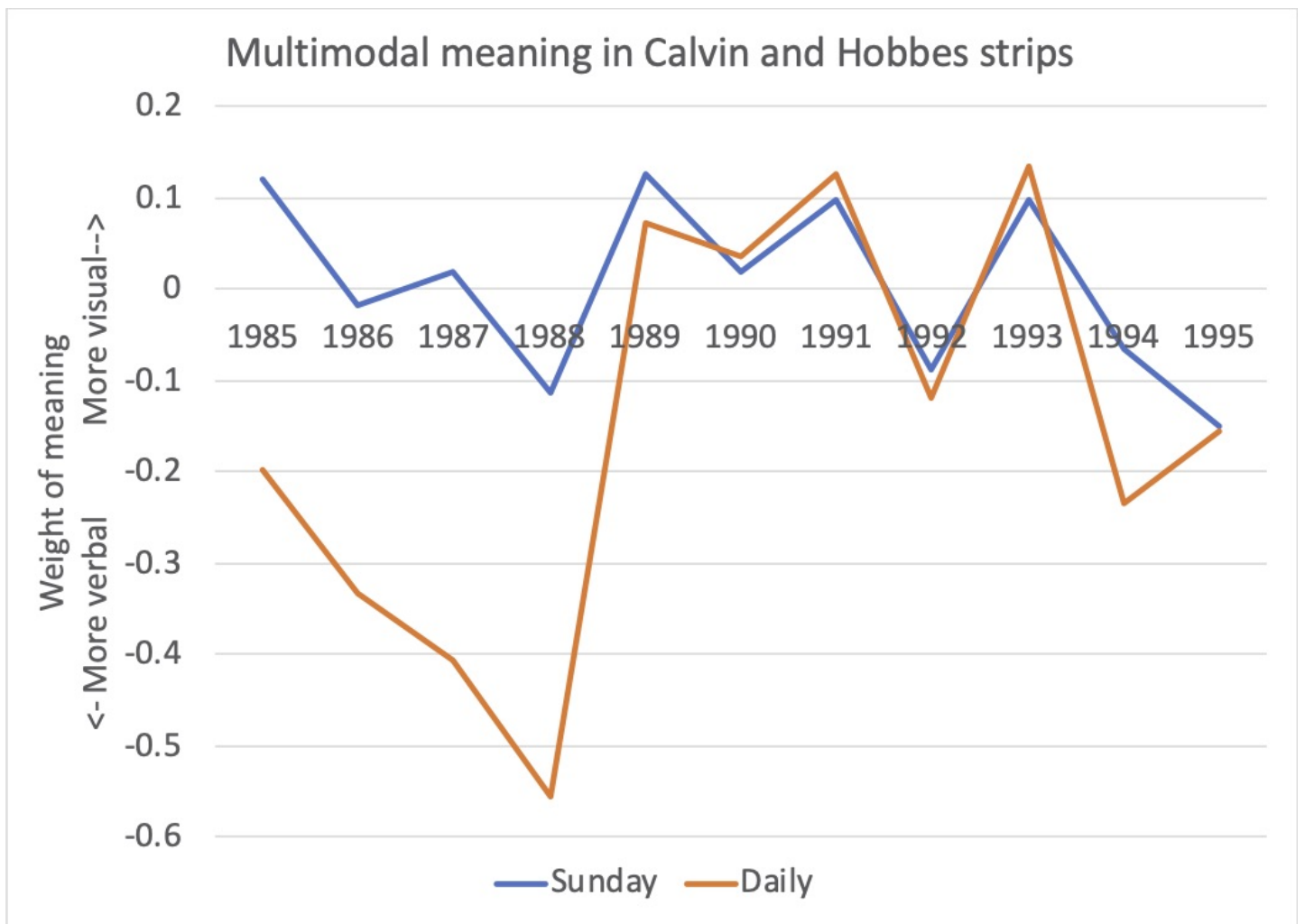@visual_linguist

The Calvin and Hobbes comic strip ended 25 years ago, so let's celebrate a New Years treat by analyzing it! Awhile back I had a students annotate structures in every C&H strip, so we have data on the whole thing. As Calvin says: let's go exploring! 1/ https://t.co/GAm45Ni1m5


An interesting feature of this strip is that Watterson took a few sabbaticals during its run, and came back with more artistic freedom. So, I'll focus here on how a few aspects of the strip change over time. Here's what every panel per strip looks like (all 14,712 panels!) 2/

Calvin and Hobbes Panels per strip*date
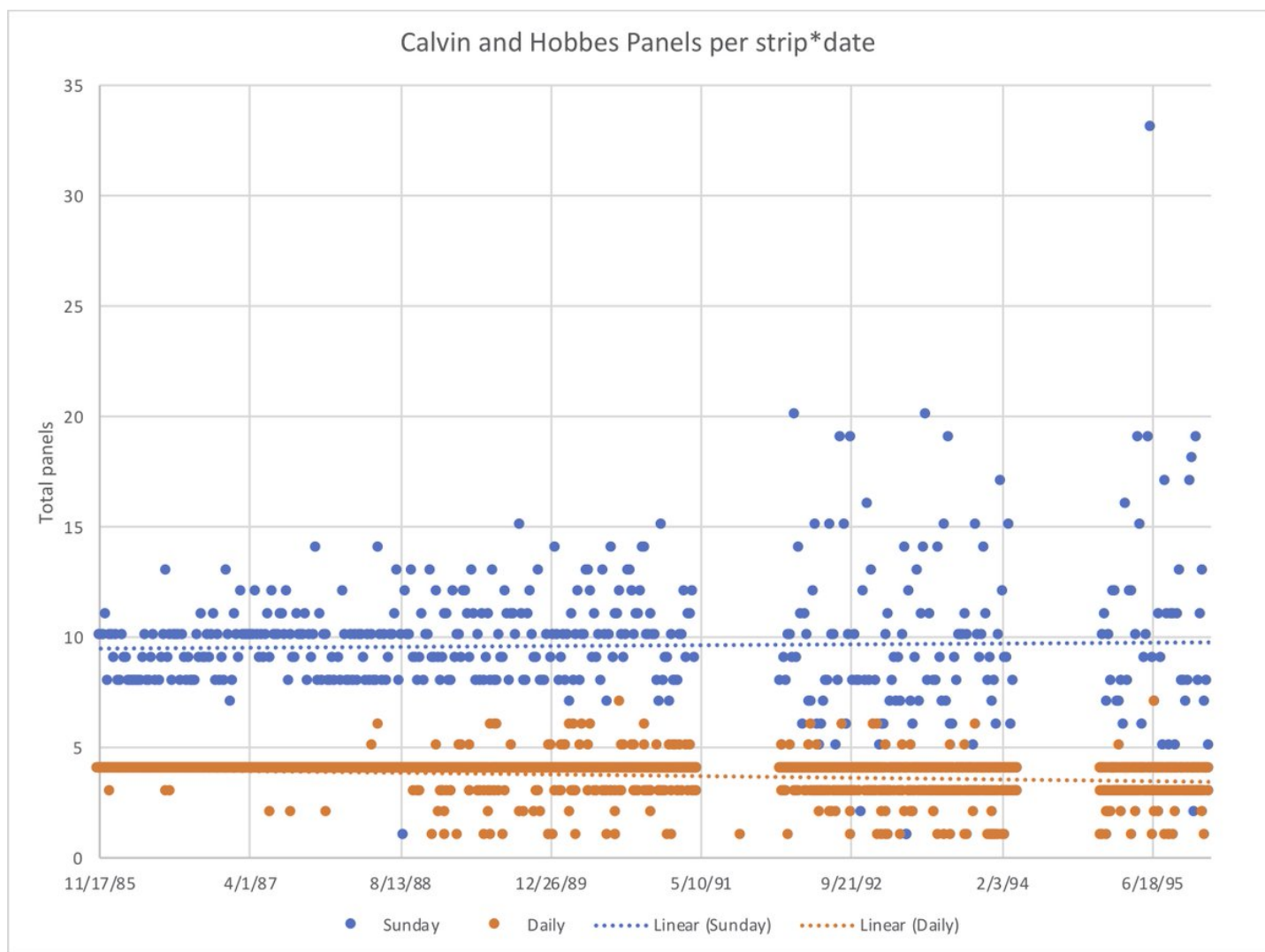
Let's start with storytelling. Overall, the strip shifts to becoming more visual and multimodality balanced in meaning over time. In this graph, higher numbers mean more meaning carried by pictures than words (0=balanced) 3/

Multimodal meaning in Calvin and Hobbes strips

Weight of meaning
More visual-->
<- More verbal

Legend: Sunday, Daily

You can also see this in the overall increase of wordless panels across strips. Interestingly, you see the same trends for both daily and Sunday strips, suggesting broader shifts in Watterson's storytelling inclinations 4/

Wordless panels in Calvin and Hobbes strips
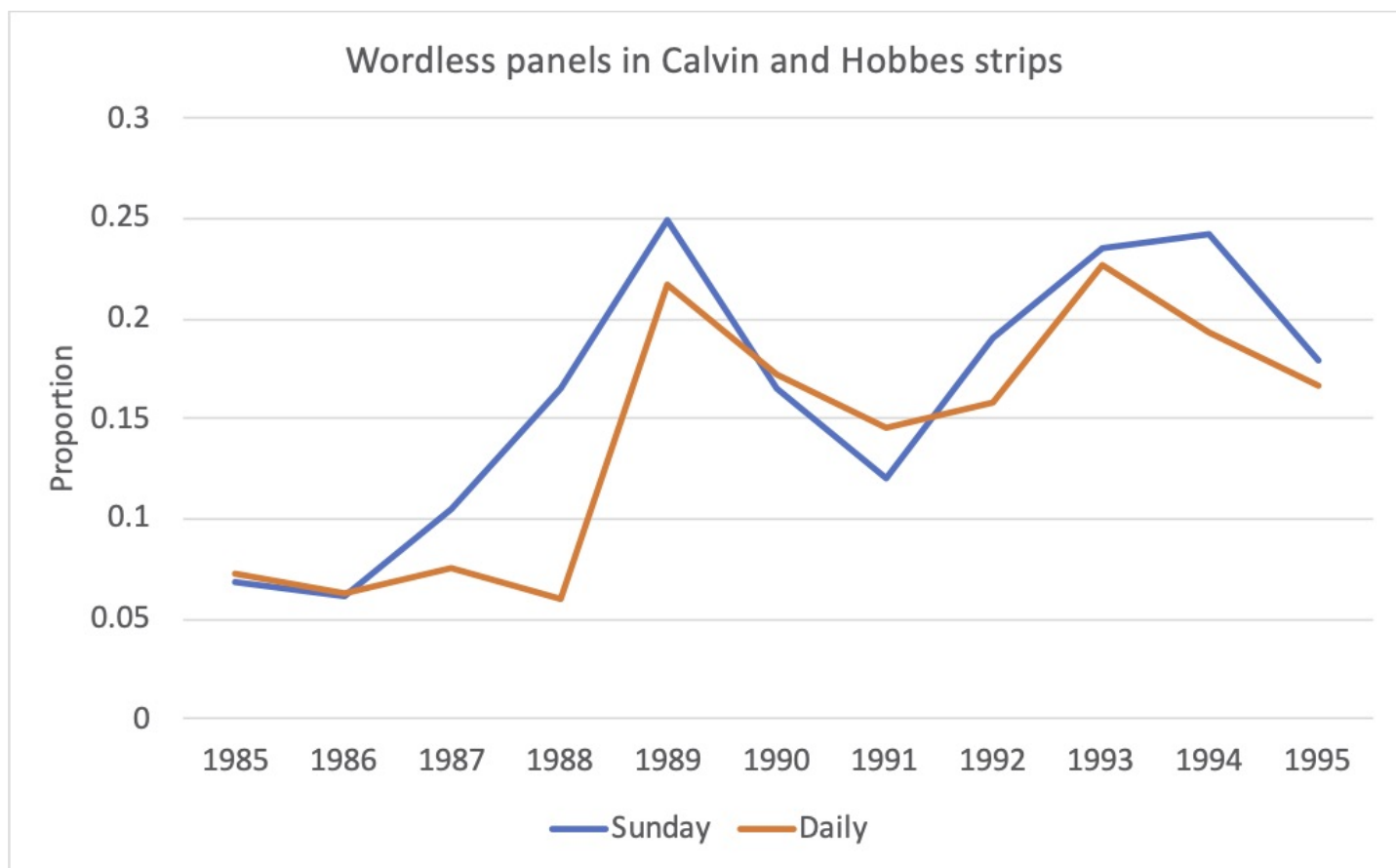
The amount of words also changed. The strip steadily got more wordy in the first half of its run, but then started decreasing again as it shifted to visual meanings 5/

Word count per panel in Calvin and Hobbes strips
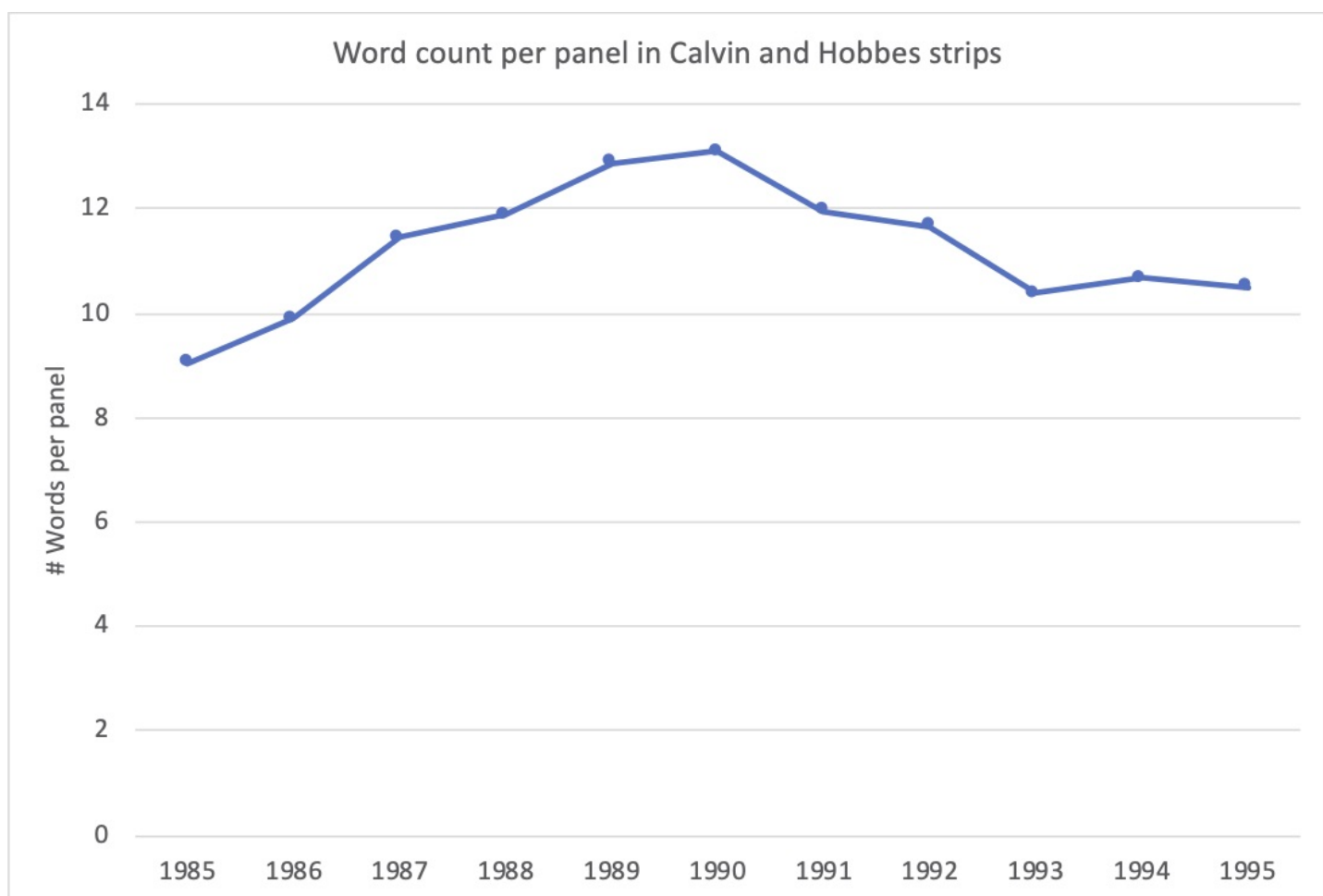
Let's also talk about layout! Watterson pushed to have more freedom in his layouts after his sabbatical, where he was allowed to occupy a whole canvas space rather than be forced like other strips to have a flexible grid that could be rearranged on a comics page 6/
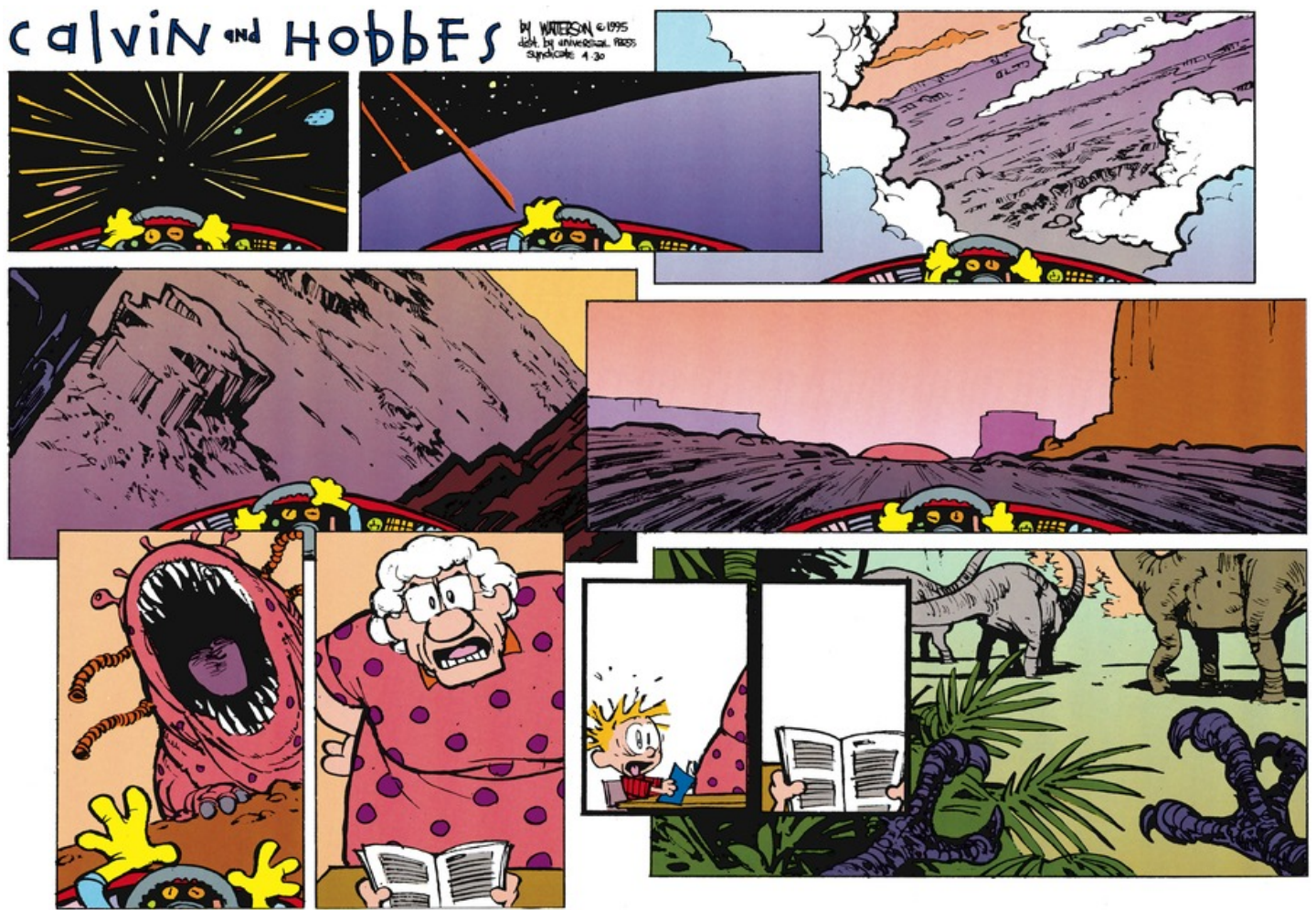

You see this directly in the numbers: Overall, his gridded Sunday layouts plummet after his sabbatical! You also see increases in all non-gridded types of layouts, like columns, insets (panels in panels), and blockage (stacked panels) 7/

Grided layouts in Calvin and Hobbes Sunday Strips
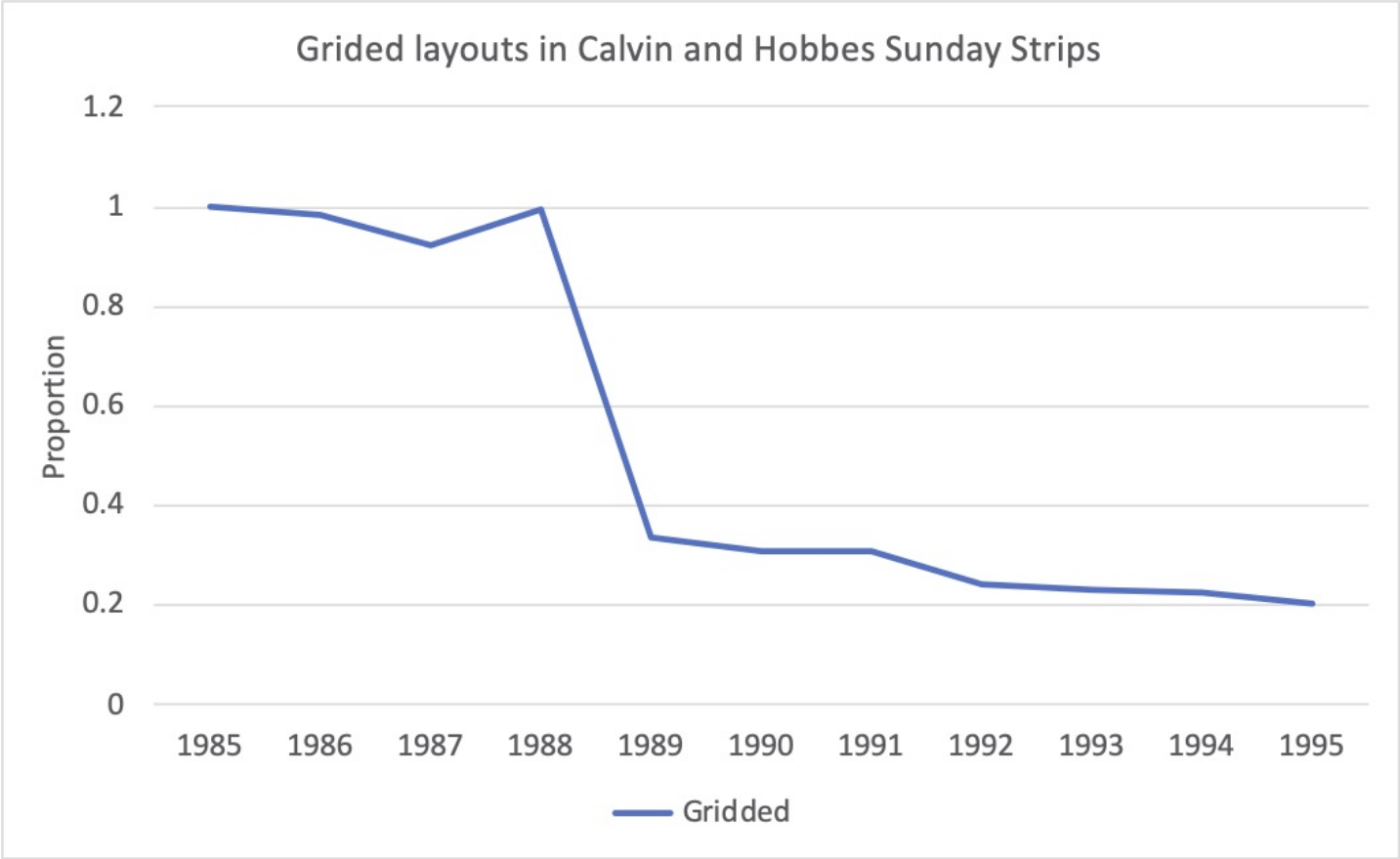
The panel shapes also change, shifting from the gridded squares to more flexible rectangles and borderless panels (other panel shapes increased too, but were too low to show up in a graph) 8/

Panel shapes in Calvin and Hobbes Sunday Strips
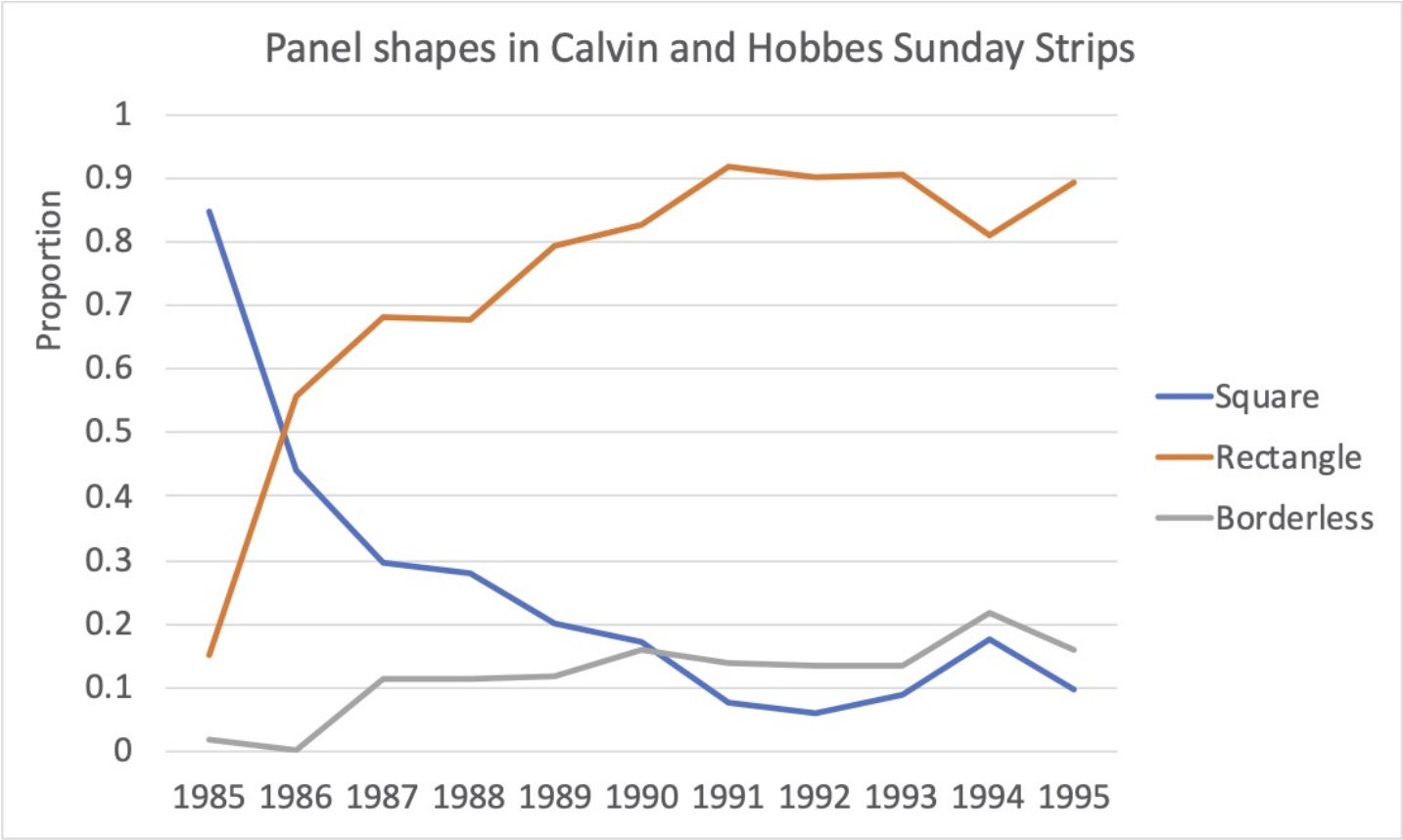
Finally, how often does Hobbes appear in the strip? Hobbes is in about 40% of strips, but only about 2% where he's a stuffed animal—mostly he's "real"! 9/
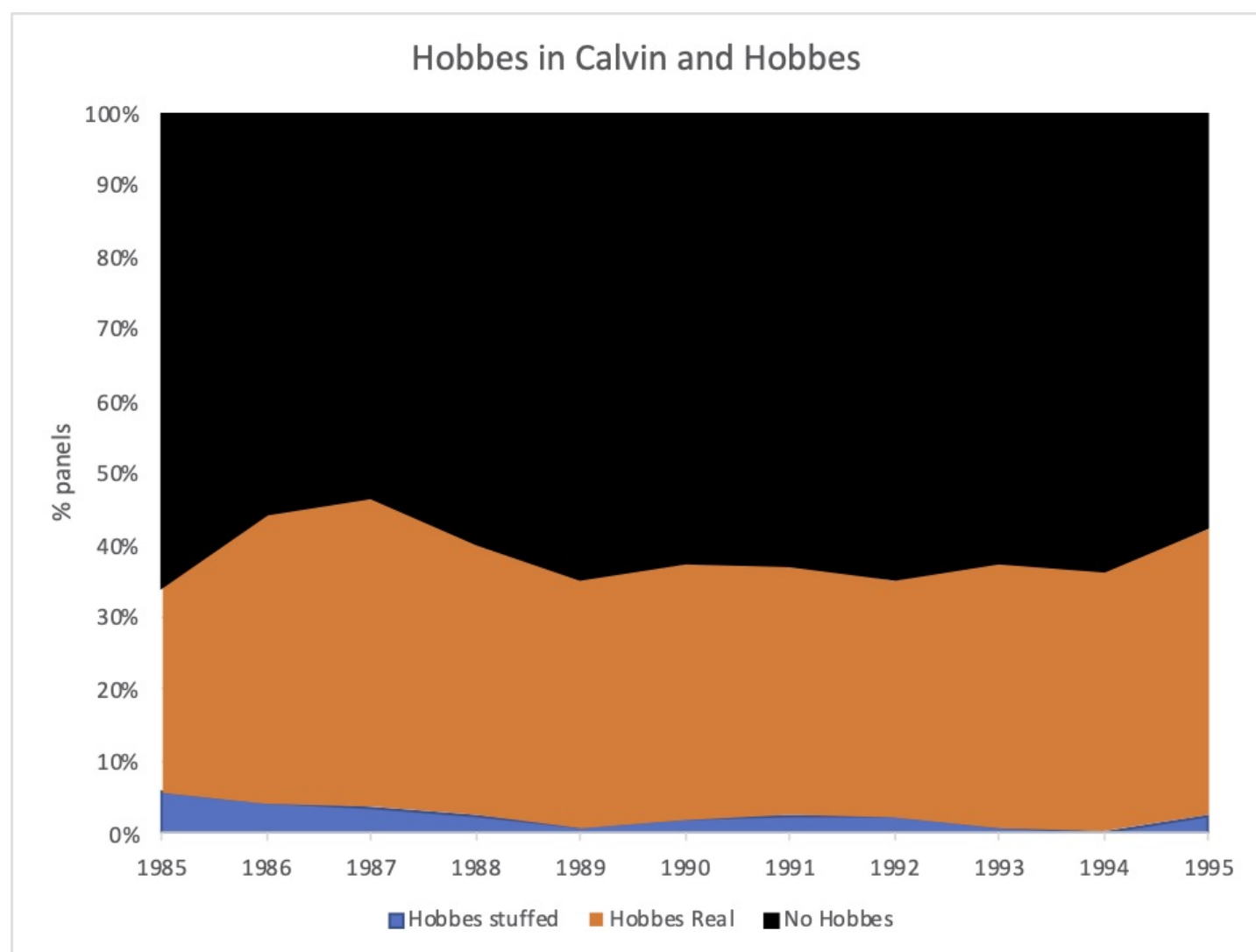

I'll conclude by saying that all this data will be made open likely later this year, along with annotation of +36K comic panels from 300+ comics from around the world in our Visual Language Research Corpus. More info in the link 10/ https://t.co/2B9DA0PmGD
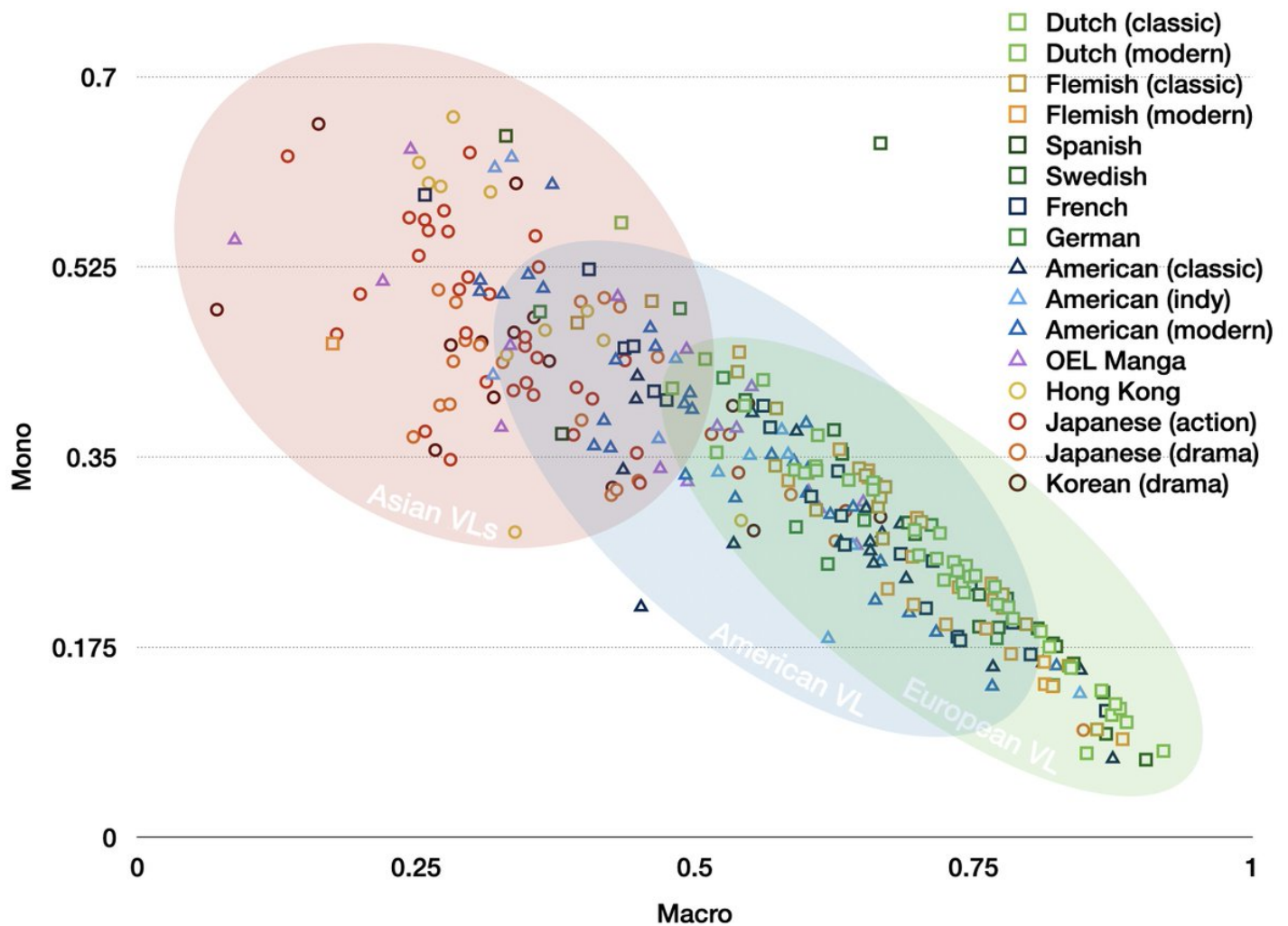
I analyzed some of the VLRC dataset in my recent book, Who Understands Comics? (plug!), but there's several more analyses to come from our lab, and then we'll post it online. I'm up for sharing it before then if people are interested 11/
https://t.co/5tXGJ8QfTh
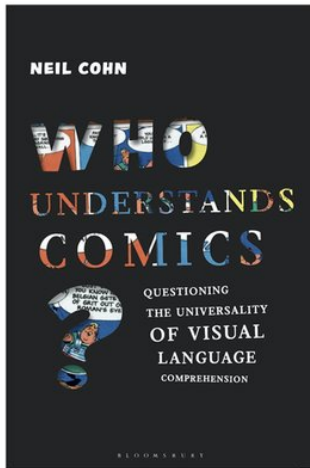
New Book by Neil Cohn

"McCloud helped us understand the comics form, but Cohn delves even deeper, synthesizing diverse theories and empirical research data to explore the factors (culture, neurodiversity, etc.) that determine how readers engage with, comprehend, and react to comics." – *Randy Duncan, Director of the Center for Comics Studies, Henderson State University, USA*

"Assumptions of the universality of images and image sequences pervade both everyday beliefs and many bodies of scientific literature. Spanning neural studies, variations in interpretation proficiency, cognitive disorders, and cross-cultural variation, this timely book challenges this position and convincingly establishes that a far more nuanced view of visual meaning-making is necessary. The sustained empirical critique Cohn provides significantly raises the bar for research in visual communication at large." – *John A. Bateman, Professor of Applied Linguistics, Bremen University, Germany*

"Cohn challenges the assumed transparency and ease of processing of visual languages by combining wide-ranging review of evidence on neurodiverse populations, cultural, developmental and experiential differences with his own unique quantitative corpus analysis and neurocognitive investigations. By showing how individual variation exists at many stages of visual narrative cognition, Cohn lays out a roadmap for future work to expand our understanding of this culturally important mode of communication. This book is sure to become a landmark reference for researchers interested in individual differences in visual language comprehension spanning comics, film and sequential images in all their many forms." – *Tim J. Smith, Professor of Cognitive Psychology, Birkbeck, University of London, UK*

And, my current research, along with @cogirmak and others, aims to analyze the structures of +1500 comics from around the world, also for an open dataset. If you're interested in contributing, please get in touch! end/ https://t.co/69VMRPWI7x