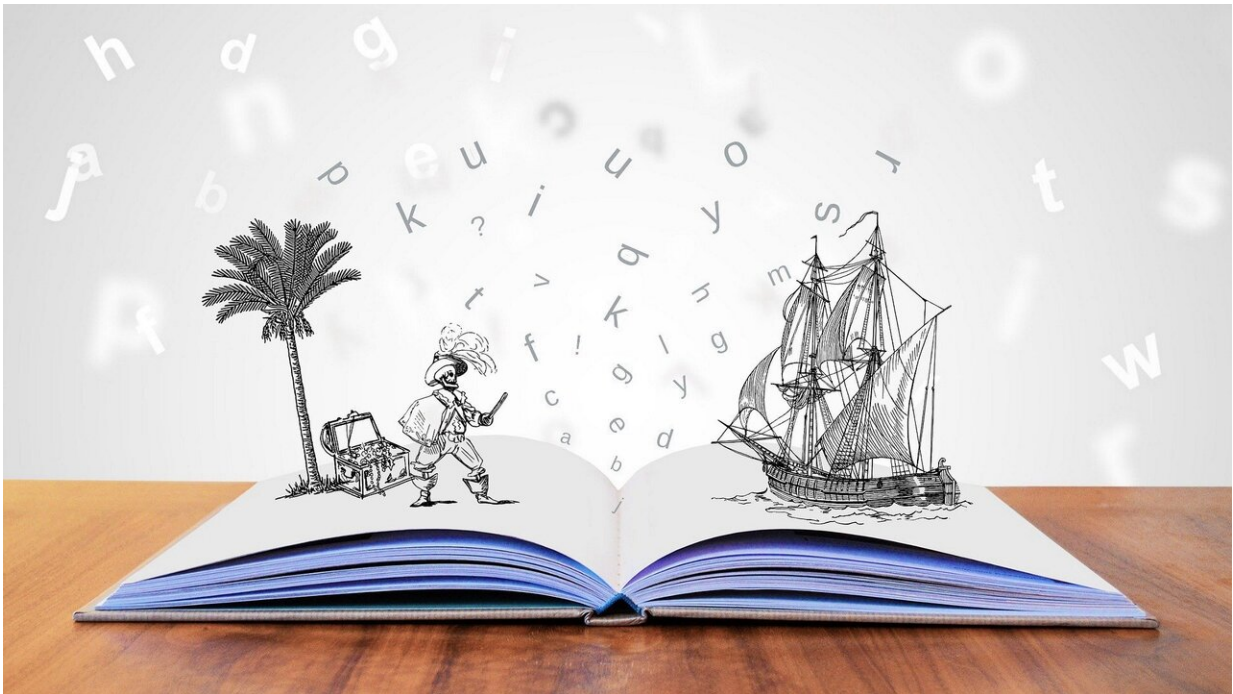


Authors' 'invisible' words reveal blueprint for storytelling

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The "invisible" words that shaped Dickens classics also lead audiences through Spielberg dramas. And according to new research, these small words can be found in a similar pattern across most storylines, no matter the length or format.

When telling a story, common but invisible words—a, the, it—are used

in certain ways and at certain moments. In a study published in *Science Advances*, researchers from The University of Texas at Austin and Lancaster University in Lancaster, United Kingdom, recorded the use of such words across thousands of fictional and nonfictional stories, mapping a universal blueprint for storytelling.

"We all have an [intuitive sense](#) of what defines a story. Until now, no one has been able to objectively see or measure a story's components," said study co-author and UT Austin psychology researcher Jamie Pennebaker.

In a computer analysis of nearly 40,000 fictional narratives, including novels and movie dialogues, the researchers tracked authors' use of pronouns (she, they), articles (a, the), and other short words, unveiling a consistent "narrative curve:"

1. Staging: Stories begin with a lot of prepositions and articles like "a" and "the." For example, "The house was next to the lake, below a cliff." These words help authors set the scene and convey the most basic information the audience needs to understand concepts and relationships throughout the story.
2. Plot progression: Once the stage is set, authors incorporate more and more interactional language, including auxiliary verbs, adverbs and pronouns. For example, "the house" becomes "her home" or "it."
3. Cognitive tension: As a story progresses toward its climax, cognitive-processing words rise—action-type words, such as "think," "believe," "understand" and "cause," that reflect a person's [thought process](#) while working through a conflict.

This combined linguistic pattern in stories may reflect how humans optimally process information, the researchers said. Prior studies have

shown that young children can easily assign names to people and things; ascribing action, however, proves more difficult.

"If we want to connect with an audience, we have to appreciate what information they need, but don't yet have," said study lead author Ryan Boyd, a UT Austin alum and an assistant professor of behavioral analytics at Lancaster University. "At the most fundamental level, humans need a flood of 'logic language' at the beginning of a story to make sense of it, followed by a rising stream of 'action' information to convey the actual plot of the story."

The research team compared the established fictional story structure to more than 30,000 factual texts, including 28,664 New York Times articles, 2,226 TED Talks and 1,580 Supreme Court opinions. Though many shared striking similarities, each genre had unique structures that reflected the different relationships between the authors and their audiences.

"Take TED Talks, for example. They mostly show the same pattern, except at the end where the cognitive tension aspect of stories continues to climb with words like 'think' or 'because,'" said study co-author Kate Blackburn, a post-doctoral research fellow at UT Austin. "This makes perfect sense. The goal of the TED Talk is to inspire, and leave the audience questioning what they have just heard from the speaker. In this sense, we seem to be able to tap into the structure of other forms of storytelling, as if we can identify that [story](#)'s fingerprint."

More information: More details on the team's analysis are available at The Arc of Narrative website: www.arcofnarrative.com

R.L. Boyd at Lancaster University in Lancaster, UK et al., "The narrative arc: Revealing core narrative structures through text analysis," *Science Advances* (2020). [advances.sciencemag.org/lookup ...](https://advances.sciencemag.org/lookup...)

[.1126/sciadv.aba2196](#)

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