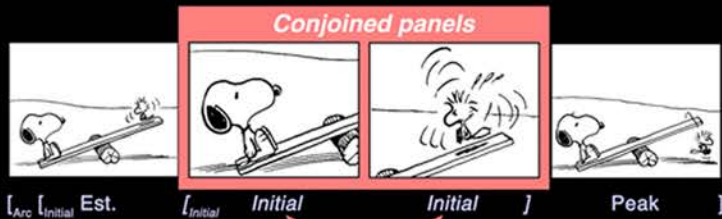


WHAT'S YOUR FUNCTION NARRATIVE CONJUNCTION?

EVENT-RELATED BRAIN POTENTIALS TO NARRATIVE CONJUNCTION IN SEQUENTIAL IMAGE PROCESSING

Neil Cohn & Marta Kutas • UC San Diego

Visual narratives using sequential images often depict successive images with different characters...

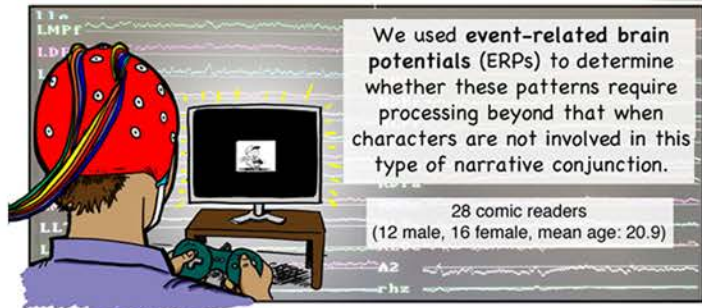
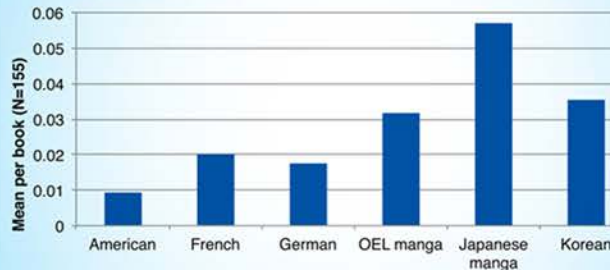


...meaning that these images need to be "conjoined" using a narrative grammar...



...and requiring the inference of a larger spatial environment containing all the characters (1).

Corpus analyses have shown that this pattern occurs more in **Japanese manga** than other types of comics (2).

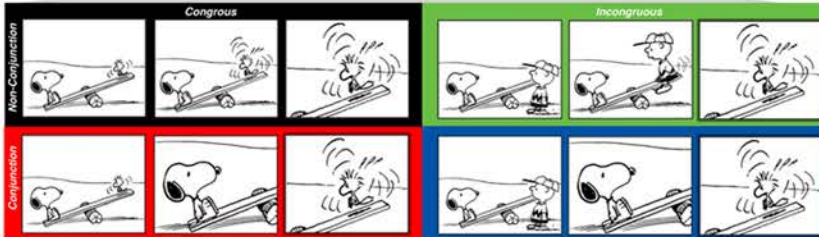


We constructed 100 sets of sequences that crossed **Conjunction** and **Congruity**...



Congruous-Non-Conjunction

Critical panel repeated the second established character.



Incongruous-Non-Conjunction

Critical panel changed from already established characters.

Congruous-Conjunction

Critical panel showed change from first to second character.

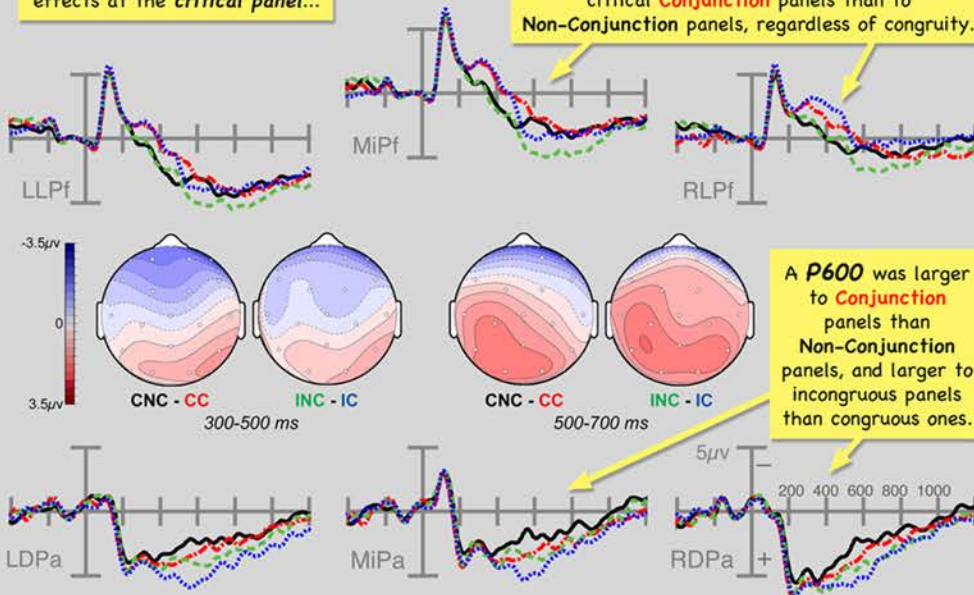
Incongruous-Conjunction

Critical panel switched to new character from established one.

Each panel: 1350ms duration, 300ms ISI

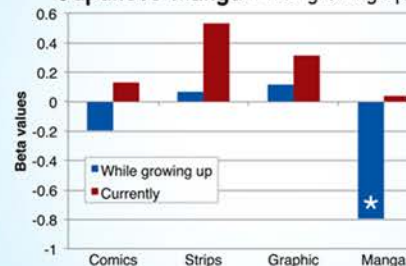
We found two patterns of effects at the critical panel...

An **anterior negativity** was greater to critical **Conjunction** panels than to **Non-Conjunction** panels, regardless of congruity.



A **P600** was larger to **Conjunction** panels than **Non-Conjunction** panels, and larger to incongruous panels than congruous ones.

Finally, we analyzed the **Conjunction effect** (300-500ms) with a regression setting participants' comic reading habits as predictors. This effect only correlated with participants' reading of **Japanese manga** while growing up.



Thus, not only does this narrative construction incur costs in processing, but these effects are modulated by fluency in specific "visual languages."

REFERENCES

- Cohn, Cognitive Science, 2013.
- Cohn, et al. In prep

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