HUMAN BEHAVIORAL COMPLEXITY PEAKS AT AGE 25

BY NICOLAS GAUVRIT, HECTOR ZENIL, FERNANDO SOLER-TOSCANO, JEAN-PAUL DELAHAYE, AND PETER BRUGGER

CONTEXT

- ❖ PLOS April 2017 – 50k views
- ❖ Cited 7 times
- ❖ 14+ Media Coverages

BACKGROUND

- ❖ "Complexity describes the behavior of a system or del whose components interact in multiple ways and follow local rules…"
- ❖ Complexity in Random Item Generation (RIG)
- ❖ In string generation, algorithmic complexity is described as the length of the shortest program that produces the string.
- ❖ "A string for which no computer program shorter than the string itself exists."

ALGORITHMIC COMPLEXITY CALCULATOR

- ❖ https://www.youtube.com/watch?v=BEaXyDS_1Cw (Zenil Explains in this video)
- ❖ Coding Theorem Method (CTM) for short strings
- ❖ Block Decomposition Method (BDM) for short and long strings
- ❖ BDM^2 for Matricies

METHOD

- ❖ N = 3429 (Age 4-91)
- ❖ Participation was done through a website that outlined the instructions for each task
- ❖ Those who could not read had an adult read the instructions to them.
- ❖ Asked to preform 5 tasks:
  - ➢ Toss a coin
  - ➢ Guess a card
  - ➢ Roll a die
  - ➢ Pointing to circles
  - ➢ Filling a grid

- ❖ These tasks were chosen because they are all RIGs that produce short strings to be used by their algorithm complexity calculator

- ❖ Completion time was recorded for each task as well as total time.

RESULTS

- ❖ Males had faster completion times
- ❖ Paranormal Beliefs only negatively affected the grid box
- ❖ Complexity peaks at age 25, with a gradual decrease until a swift decrease after 60.

WANT TO TRY IT?

- ❖ http://complexitycalculator.com/
- ❖ http://complexitycalculator.com/hrng/

DISCUSSION

- ❖ Do you think this is "a very short test with a very powerful universal measure of randomness"?
- ❖ How do you feel about the media portrayal of the information? (examples below)
- ❖ Was there any other limitations that you thought of while reading this paper?
- ❖ Other thoughts?

TITLES FOUND

- ❖ "The golden age of creativity peaks at 25" – Inews
- ❖ "3 Life-Changing Things That Happen to the Human Brain at 25" – Inverse
- ❖ "Turning 25? This may be the best time of your life" – Economic
- ❖ "When Are You Really Random? After Age 24" – New York Times
- ❖ "Our Ability to Keep 'em Guessing Peaks around Age 25" – Scientific American
- ❖ "You are at your random best around age 25" – The Straits Times

HAVE A NICE FALL BREAK