Information chaos and creativity

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Creativity is one of the key features that help distinguish humans and other species. Even within human society, creativity is also a crucial factor contributing to the competitive advantage of an individual or an organization [1,2]. As creativity is an outcome of an individual's mental process, information inputs are required for making creativity. The question is:

- Which kind of information input is better for creativity: structured or unstructured information?

A 2017 research published in Organizational Behavior and Human Decision Processes offered some insights to answer this question [3]. The researchers conducted three separate experiments to test whether viewing a flat information structure can lead to higher creativity than viewing a hierarchical information structure. In a flat information structure, information is not grouped into higher-order categories and has weak conceptual relationships with each other; in other words, information is unstructured. In contrast, information in a hierarchical information structure is organized into higher-order categories based on the strength of conceptual relationships between information.

Regarding the experiments, the first two used sentence construction tasks to evaluate the participants' creativity, while the last employed the LEGO construction task. All three experiments' findings suggested that participants exposed to a flat information structure (or unstructured information) were more creative than those exposed to a hierarchical information structure. Moreover, the researchers also found that the flat information structure enhanced participants' creativity levels by improving their cognitive flexibility

and persistence [3].

Figure: Creation of abstract mural, by LaurMG (CC-BY-SA-3.0); https://commons.wikimedia.org/wiki/File:Glass_creativity_finalrevis.jpg

The research is very insightful but neglects one crucial aspect: human cognition has limits [4,5]. The tasks employed in the experiments are relatively simple (e.g., constructing meaningful sentences based on given words or alien figures based on LEGO bricks) and still within the cognitive capability of most humans. However, in realistic scenarios, things are much more complex and even exceed humans' cognitive functional limits, so organized information (or knowledge) is capitalized to reduce complexity and increase problem-solving efficiency. Therefore, a large proportion of creativity in real life seems to derive from serendipitous information combined with a set of structured information (or knowledge) rather than purely chaotic information [6].

References

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