Twitter Thread by David Rodger-Goodwin

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A thread:

1 GOs don't require the use of images. From my reading, DCT is about the use of images paired with words, to aid retrieval. And as @olivcav has pointed out, Pavio worked with simple ideas and concepts.

2 Most of the research into GOs appears to be unhelpful. Hattie lumped all visual strategies together and reported his finding under the heading, concept maps.

3 Fiorella and Mayer, in LaGA, report that mapping, while having a medium-to-high effect size, also take a long time to complete and are difficult to construct.

4 Both studies appear to concentrate on concept maps and in doing so, omit 30+ other GOs. All of which, I argue, are less complicated to read and construct. Skipping over all GOs, to begin with concept maps, is like a ballerina being introduced to pirouettes before a plie.

5 In my opinion, Fiorella and Mayer's boundary conditions of time and difficulty to construct, are nonsense.

6 Most teachers I speak to, consider CLT, the learning propensities of their students and their student's prior experiences of using GOs to decide how much scaffolding and modelling is required.

7 It's not that GOs are a fad or don't work. There is a case to be made that if teachers are to get the most out of using them they need to be shown how.

8 The word fad defines something short-lived. The British Philosopher, Bertrand Russell (1930s) suggested diagrams allow us to see the whole and it's parts simultaneously. Not that you can process everything, all at once, but that a diagram is a more efficient route to meaning.

9 In the 1970s British Neuroscientist, John O'Keefe discovered place cells in the hippocampus. Place cells track our place in space. A few decades later and two Norwegian scientists discovered grid cells in the entorhinal cortex.

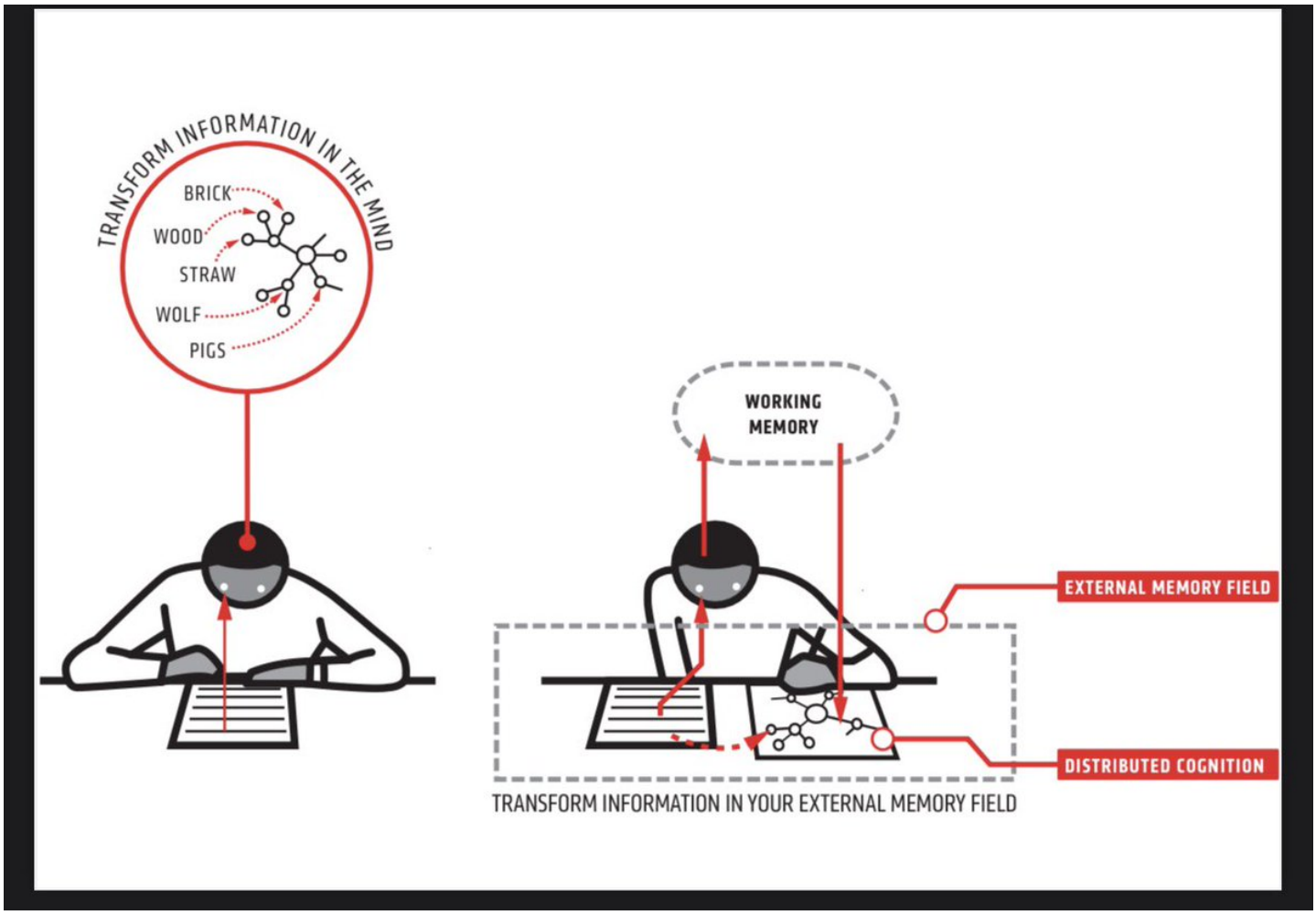
10 Grid cells generate virtual maps of our surrounding environment. These studies won the Nobel Prize in 2014. There is a growing agreement between neuroscientists, cognitive scientists, linguists and psychologists, that the brain maps out ideas and memories like space.

11 https://t.co/Zrit7LcMM5

12 Why do place and grid cells matter? They help to explain the findings of Simon and Larkin in Why a Diagram is (Sometimes) Worth Ten Thousand Words. They proposed the notion of computational advantage, similar to Bertrand Russell's earlier claims.

13 They also proposed the visuospatial argument. Information is spatially arranged and as a result, the information required to make inferences is present and explicit.

14 A reader of linear prose would have to navigate complex syntax to make such inferences. This, while draining their limited cognitive bandwidth.



15 A GO is a tool we can use in our External Memory Field. Supported by Sweller's recent CLT and the inclusion of embodied cognition, Merlin Donald's notion on an EXMF allows us to organise our thoughts outside of the mind. By doing so, we mitigate the limitations of our WM.