

# Embodied Metaphors and Creative “Acts”

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SNR 2063120  
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## Original paper:

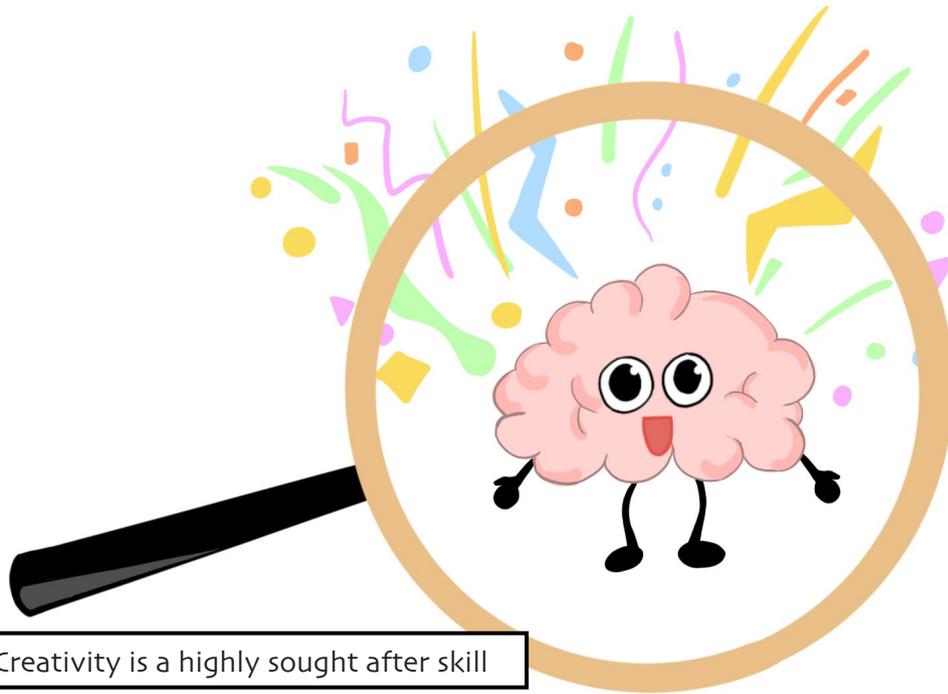
Leung, A. K. Y., Kim, S., Polman, E., Ong, L. S., Qiu, L., Goncalo, J. A., & Sanchez-Burks, J. (2012). Embodied Metaphors and Creative “Acts.” *Psychological Science*, 23(5), 502–509. <https://doi.org/10.1177/0956797611429801>

## Link to the original paper:

<https://journals.sagepub.com/doi/10.1177/0956797611429801>

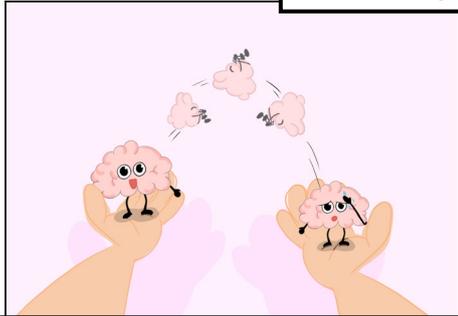
## Project created for the class:

Visual Thinking and Composition  
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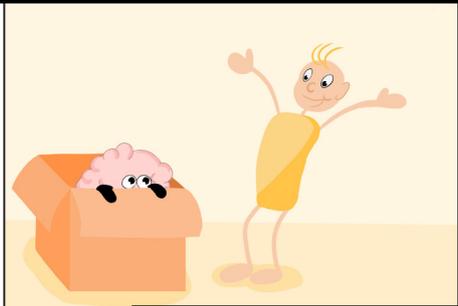


Creativity is a highly sought after skill

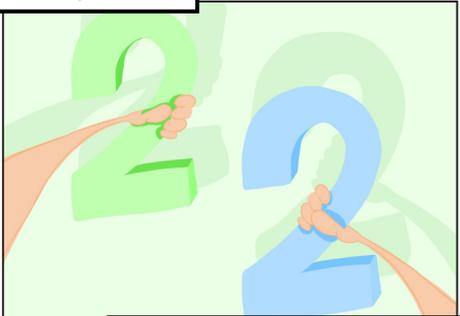
Advice to get more creative comes in the form of metaphors.



"one in one hand, then on the other"

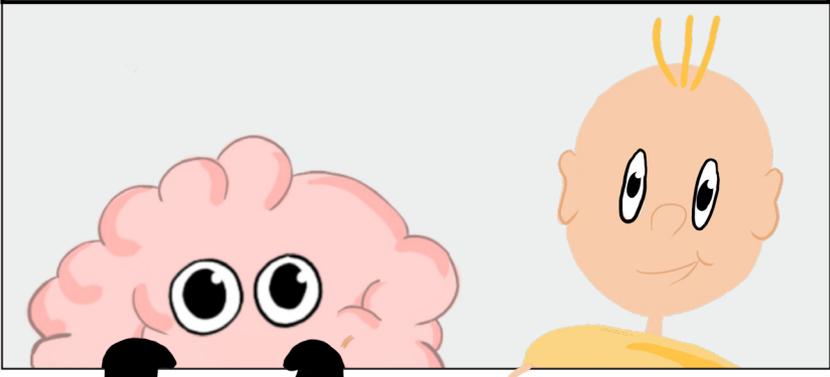


"Think outside the box"



"put two and two together"

Can you help Leung et al. explore whether "embodying metaphors for creativity can give rise to novel ideas by facilitating the psychological process of creative problem solving."

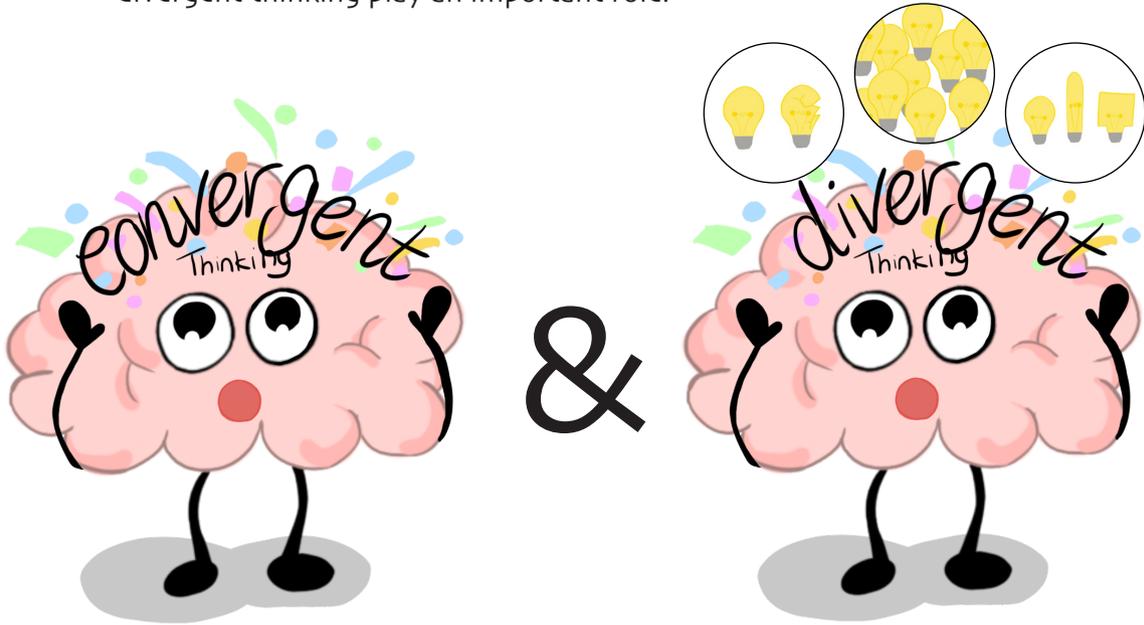


These metaphors imply a link between bodily experiences and creative thinking.

Before we can explore this we need to know what creativity is?

# What is it that we are looking for?

Creativity is typically defined as the process of creating something both novel and useful (Amabile, 1996). Where both convergent and divergent thinking play an important role.



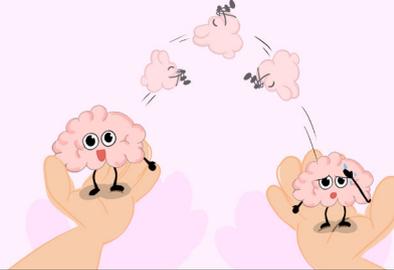
The search for the best answer or the most creative solution to a problem

(Dewhurst, Thorley, Hammond, & Ormerod, 2011; Nemeth, 1986; Simonton, 2003).

The generation of many ideas about and alternative solutions to a problem and involves three components. Flexibility, different ideas.

Fluency, the amount of ideas. Originality, creating new ideas. (Guilford, 1967).

## EXPERIMENT 1

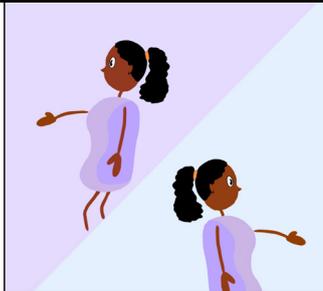


in our search looked into the metaphor "on one hand, then on the other".

The participants were told to come up with novel uses for a university building complex. They also got the task to lift their hand as one might do during a presentation



The control condition only needed to raise one of their arms .

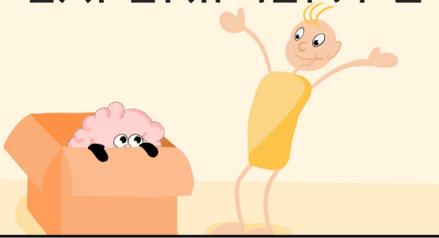


The experimental condition raised both of their arms .

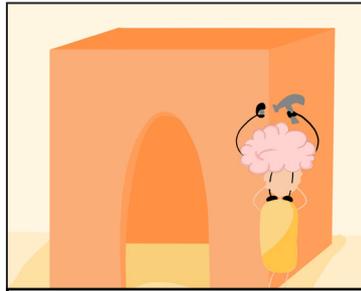


The responses were rated on the three components of divergent thinking. The most creativity was found within the experimental condition.

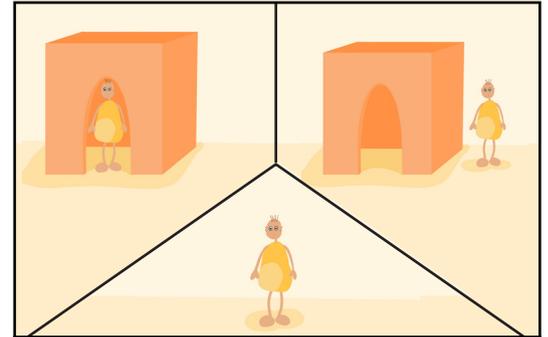
## EXPERIMENT 2



Focused on the metaphor "think outside the box".

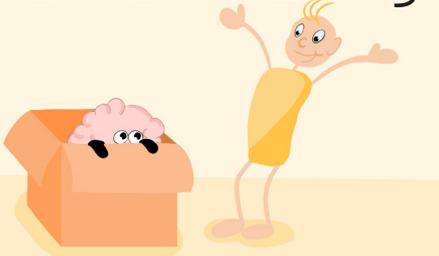


For this experiment we got crafty and made a box big enough to comfortably fit a participant.

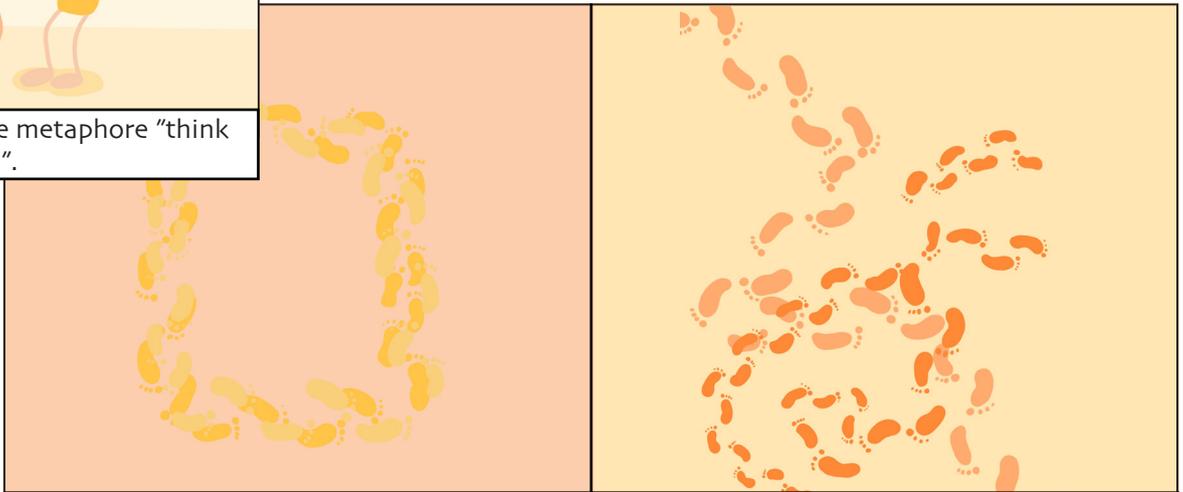


The participants were asked to complete a 10-item Remote Associate Test while sitting either inside or outside the box. The control condition completed this RAT test without the box in the room.

## EXPERIMENT 3



Focused on the metaphor "think outside the box".

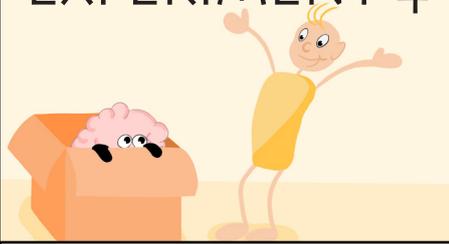


The box in this experiment is represented by the walking path of the participants. In the rectangular-walking condition the participants were only allowed to walk in a fixed rectangular shape while solving problems with creative thinking. The free-walking condition gave the participants the chance to walk through the room without a fixed path. The last condition was the control condition, the participants in this condition stayed seated.



Both experiment 2 and 3 resulted in higher creativity for the conditions that embodied the metaphor "think outside the box"

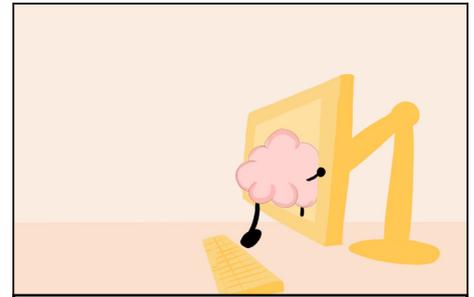
## EXPERIMENT 4



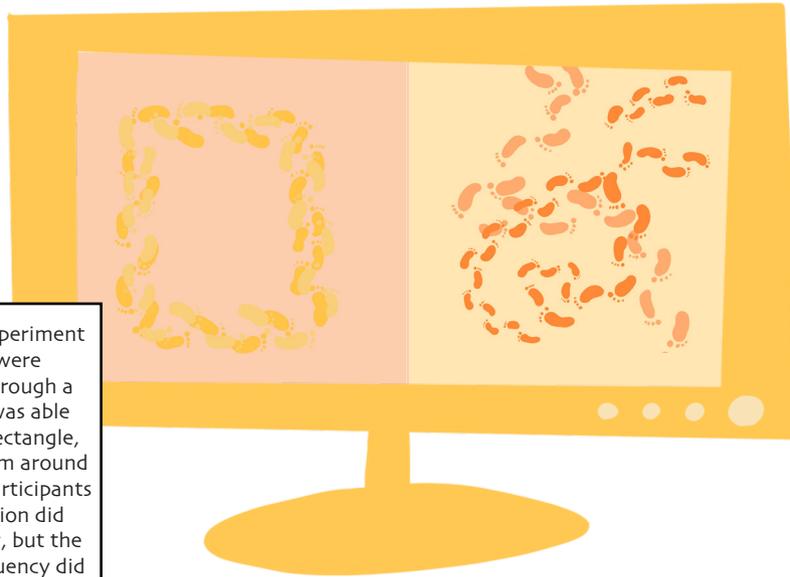
Focused on the metaphor "think outside the box".



Experiment 1,2 and 3 focussed on actual bodily movement. In experiment 4 we said goodbye to our body to see whether this creativity was not due to the psychological actions.



To investigate the soft embodiment we stepped inside a 3D virtual world.

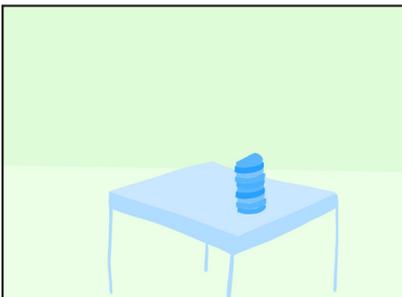


The participants of this experiment got their own avatar and were able to walk this avatar through a virtual room. One group was able to walk their avatar in a rectangle, the other group could roam around freely in this room. The participants of the free-walking condition did score higher on originality, but the scores on flexibility and fluency did not differ between the conditions.

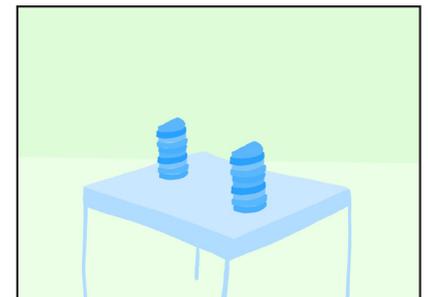


## EXPERIMENT 5

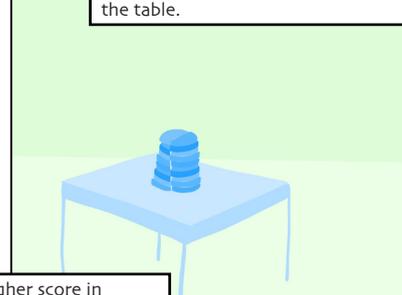
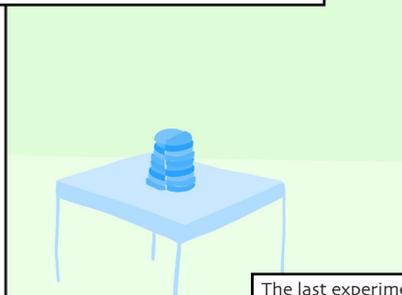
The last experiment of this study focussed on the metaphor "putting two and two together". For this experiment round paper coasters in two halves.



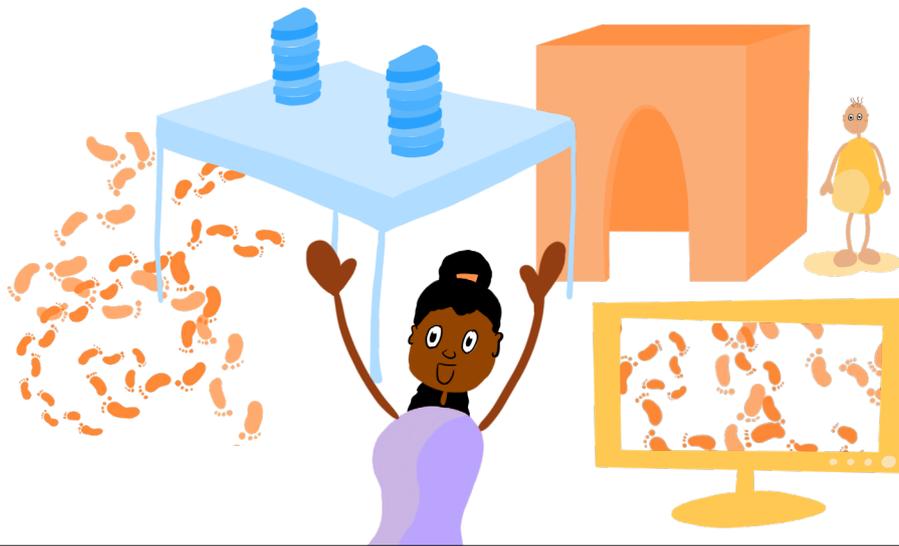
The control condition only found one stack of halve coasters on their table. While finishing a RAT test the participants transferred the halves to the middle of the table.



The experimental condition saw two stacks of coaster on their table. While finishing a RAT test the participants took coasters from the left and right stack and put them together in the middle of the table.

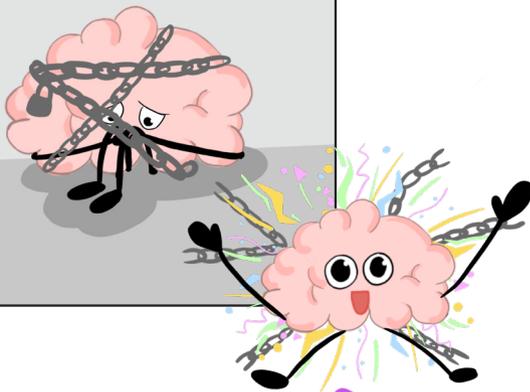


The last experiment showed a higher score in convergent thinking in the experimental condition.

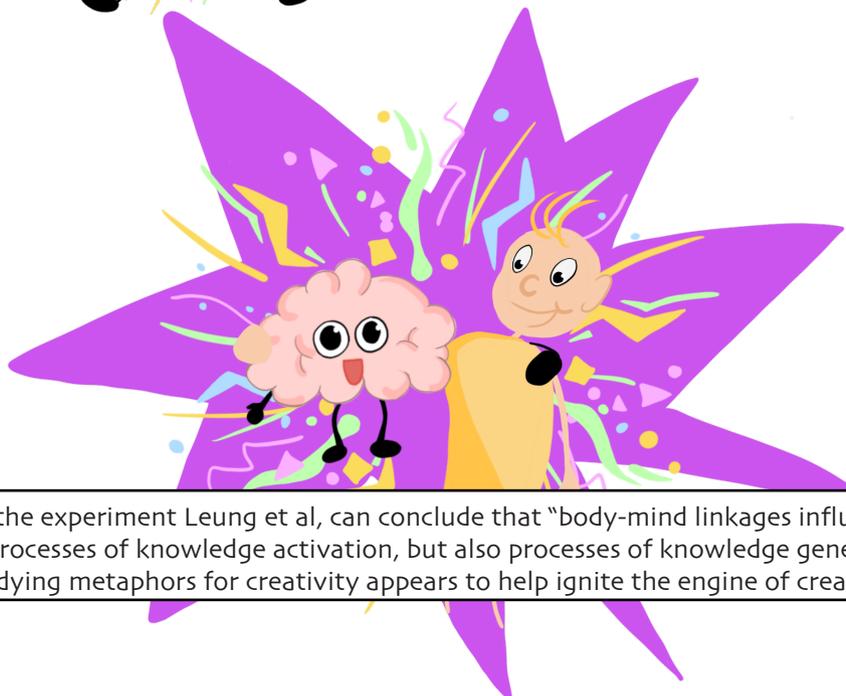
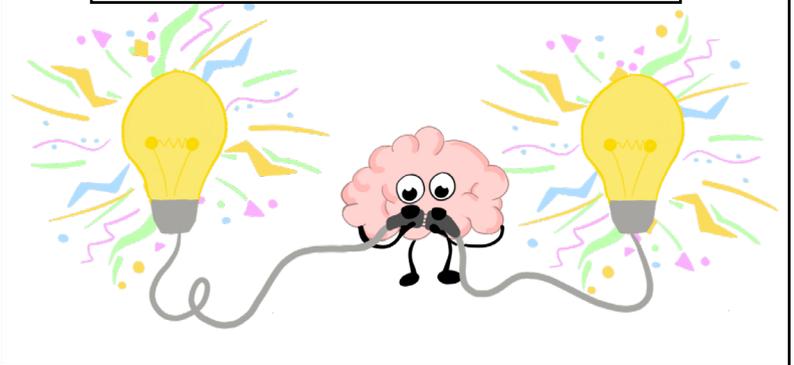


The results discovered across the five experiments support the creativity-enhancing effect of embodying creative metaphors. "Creativity-implicating physical acts may be conducive for creative problem solving because they activate...

... the processes involved in overcoming mental fixedness...



...or the processes involved in forging new connections among distinct ideas." (Leung et al., 2012)



After the experiment Leung et al, can conclude that "body-mind linkages influence not only processes of knowledge activation, but also processes of knowledge generation. Embodying metaphors for creativity appears to help ignite the engine of creativity."

**Other references:**

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