



CONSTRUAL LEVEL IN SPACE : AN EXPERIMENTAL STUDY OF CONSTRUAL LEVEL AND SPATIAL ORIENTATION



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INTRODUCTION

Spatial Orientation

- a set of complex abilities that allow one to position oneself in space based on a specific reference point (Coluccia & Louse, 2004)
- Several cognitive components can be related to spatial orientation (e.g. cognitive mapping)

Construal Level Theory

- psychological distance determines the level of abstraction of mental representations (Trope and Liberman, 2007).
- High level: Abstract and schematic, focusing on the big picture
- Low level: Concrete, contextual, and detail-oriented (Liberman, Sagristano, & Trope, 2002).

OBJECTIVE

The primary objective of the current experimental study is to examine the potential impact of construal level (abstract vs. concrete) on spatial orientation.

- Hypothesis 1:* activation of the abstract construal level (focus on the big picture - primary features of things/events) would lead to higher spatial orientation scores than activation of the concrete construal level (focus on details - secondary features of things/events).
- Hypothesis 2:* activation of the abstract construal level (focus on the big picture - primary features of things/events) would lead to less total fixation duration than activation of the concrete construal level (focus on details - secondary features of things/events).

METHOD

Participants

- 16 (5 women and 11 men, Mean of age = 24)
- The targeted sample size is 102 ($1 - \beta = 0.80$) and the study is still ongoing.

Materials

- How (abstract) and Why (concrete) manipulation task (Freitas et al., 2004) is used to manipulate the construal level. (instructed to think about how or why they would do something, e.g. improve mental health)
- Manipulation Check (Rim et al., 2014) grouping task. Abstract (less group), and Concrete (more group)
- Virtual Reality Glasses (Brand) with head-mounted/mobile eye tracker (they were able to look around (118 pieces) as they wished)
- Ehrenbreitstein Castle (located in Koblenz/Germany) simulation (Münch, 2016)



Note. The well in the main court of the Ehrenbreitstein Castle from the simulation created by Andreas Münch (2016)

Design and Procedure

- Experimental between-subject design
- First manipulation with How and Why task based on the group
- Then visit to the simulation of Ehrenbreitstein Castle
- Six locations -> (to point with a button evoking a laser sword to the starting point, i.e. an object that served as the target object) to the well.

PRELIMINARY RESULTS

Hypothesis 1

| | n | Mean | SD | t | df | p |
|--------------------|---|------|------|------|----|------|
| Abstract Condition | 8 | 32.9 | 24.7 | .758 | 14 | .379 |
| Concrete Condition | 8 | 25.3 | 13.3 | | | |

Note. No significant difference in spatial orientation scores was found between concrete and abstract group.

The analyses did not revealed significant difference between participants in the two conditions for spatial orientation or total fixation duration. However, it is essential to note that the study is still ongoing, and these findings are considered preliminary.

Hypothesis 2

| | n | Mean | SD | t | df | p |
|--------------------|---|------|-----|------|----|------|
| Abstract Condition | 8 | 780 | 133 | .859 | 13 | .823 |
| Concrete Condition | 8 | 840 | 133 | | | |

Note. No significant difference in total fixation duration scores was found between concrete and abstract group.

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