Assessing the stability of thematic and taxonomic preferences across explicit and implicit measures

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Introduction

- Taxonomic similarity between items is based upon shared features, whereas thematic similarity is based upon frequent co-occurrence within situations (Lin & Murphy, 2001).
- An individual difference has been demonstrated in the types of similarity used when they make making categorisation judgments. However, with the notable exception of Mirman and Graziano (2012), this has been shown in experiments utilising only a single categorisation task.
- Mirman and Graziano tested participants using two tasks, one explicit and one implicit (a triad task and a word recognition task). They found that performance on one task could be used to predict performance on the other, concluding that there is a stable individual preference for either taxonomic or thematic relationships.
- The current experiment sought to build on Mirman and Graziano's work by testing for a stable preference across four tasks.
- PREDICTION 1: A stable preference (taxonomic or thematic) will be found across all four tasks.

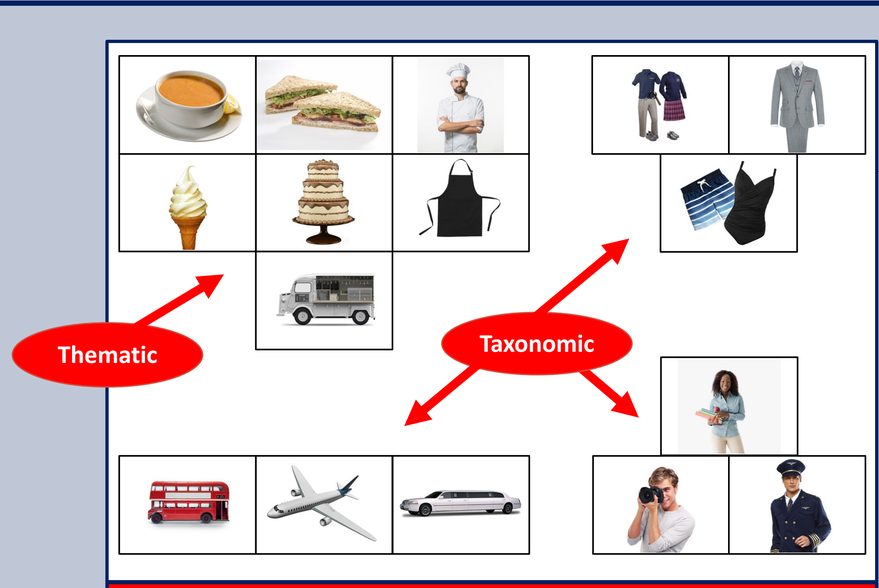
Sources of Similarity

- **Taxonomic Similarity**

  - **Perceptual** (e.g., appearance, texture, smell or sound)
  - **Biological** (e.g., physiological constituents)
  - **Functional** (e.g., to serve food)

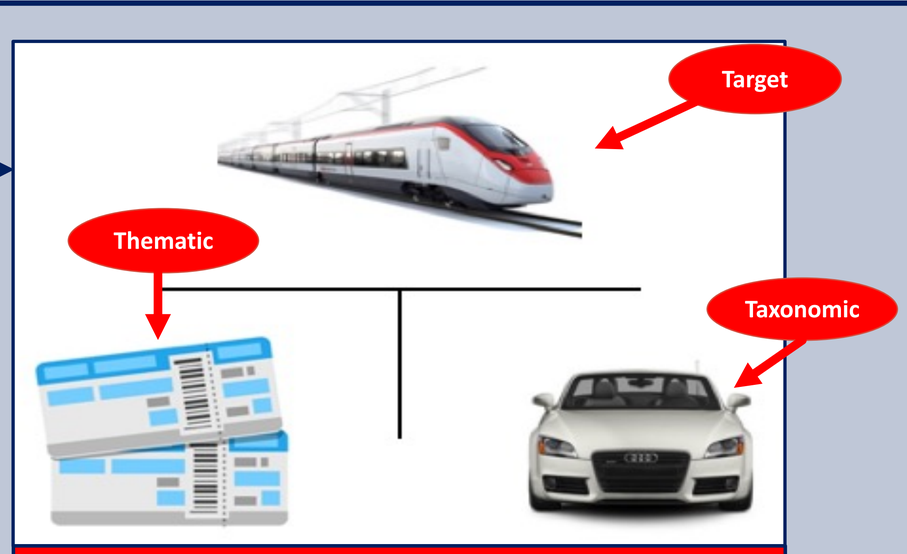
- **Thematic Similarity**

  - **Spatial** (found near each other)
  - **Interactional** (combine to fulfil their function)
  - **Causal** (one causes or makes the other)
  - **Temporal** (occur closely in time)



Task 1 – Card Sort Task

- Participants to organise the 16 cards into a minimum of two groups that (following Murphy, 2001). The task was completed twice.

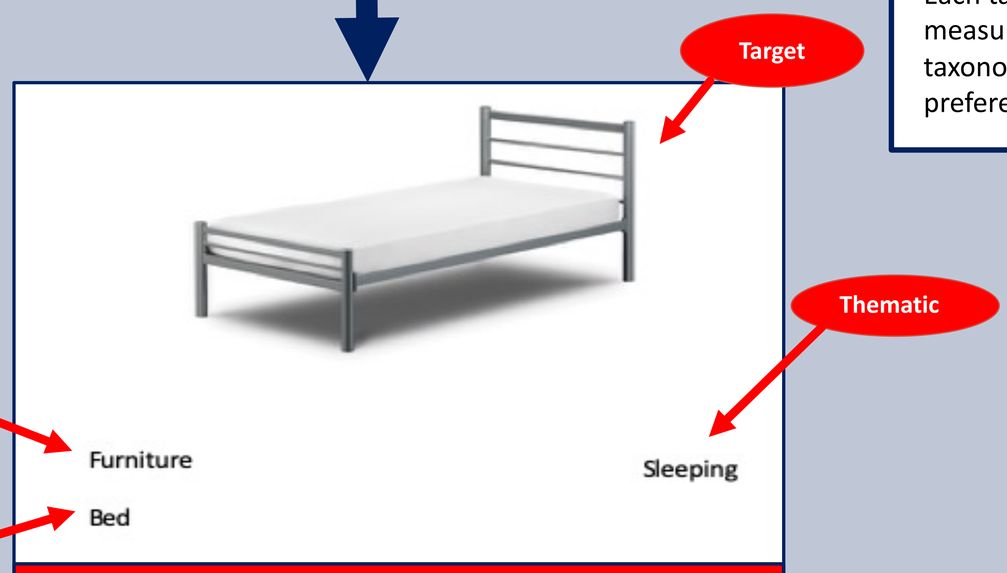


Task 2 – Triad Task

- Participants made a series of judgments regarding which of two choice items was best associated with a target item. One choice item was taxonomically related to the target while the other was thematically related.

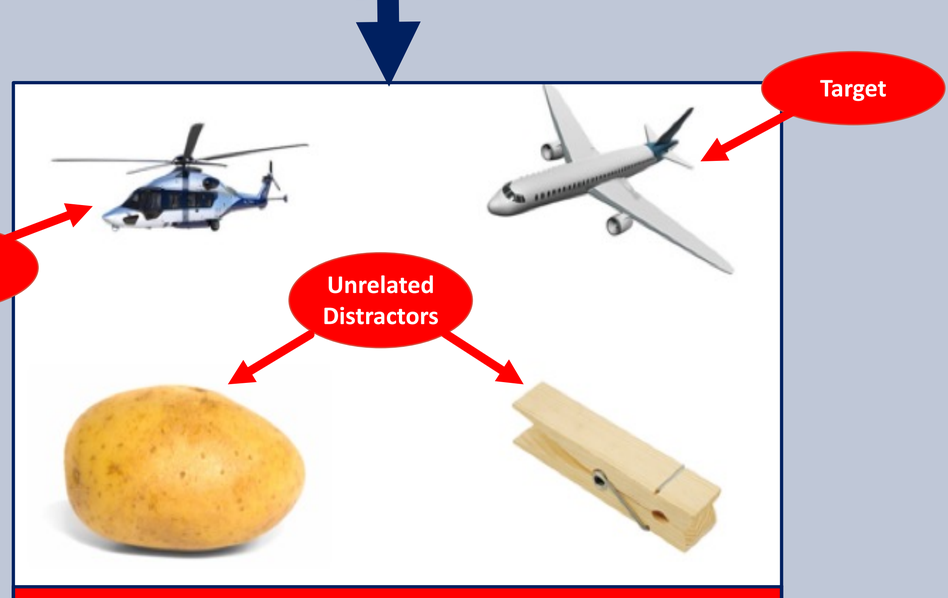
Method

- 50 psychology students (48 females, M_{age} = 22.27, SD = 7.51) completed all four measures in a randomised order.
- Each task was designed to measure preferences for taxonomic and thematic preferences.



Task 3 – Single Category IAT

- Participants completed a novel categorisation task based upon Karpinski and Steinman's (2006) SC-IAT. Categories were designed to be unambiguous (e.g. a table belonged to the category furniture) and the possible categories were thematic and taxonomic.



Task 4 – Word Recognition Task

- Participants completed Mirman and Graziano's (2012) word recognition task using eye-tracking. Four images were presented including the target, two unrelated objects and either a thematic or taxonomic competitor.

Results

- After scoring the tasks, no between task correlations were found indicating no cross-task preference in taxonomic or thematic preference.

Spearman's rho correlation coefficients.

	Sort1	Sort2	SC-IAT	Triad	WRT
Sort1	-	-.41*	.01	-.14	-.23
Sort2	-.41*	-	.25	-.11	-.02
SC-IAT	.01	.25	-	.12	-.25
Triad	-.14	-.11	.12	-	-.24
WRT	-.23	-.02	-.25	-.24	-

*. Correlation is significant at the 0.01 level (2-tailed).

- Converting the raw data into z-scores showed that only 6 participants achieved a significantly different preference ($p < .05$) in either direction. Therefore, nearly all participants showed task-specific mixed-categories.

Discussion

- These results caste doubt on Mirman and Graziano's conclusion regarding a stable and general preference between taxonomic and thematic similarity. Instead they suggest that individuals will use whichever type of similarity they deem to be most advantages to any given task. More so, that individuals may differ on which type of similarity they deem to be most useful for any given task.
- However, care must be taken when drawing such conclusions because similarity has been shown to be influenced by many factors, such as the items being judged or the instructions given (Lin & Murphy, 2001).

References

- Karpinski, A., & Steinman, R. B. (2006). The single category implicit association test as a measure of implicit social cognition. *Journal of personality and social psychology*, *91*(1), 16.
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