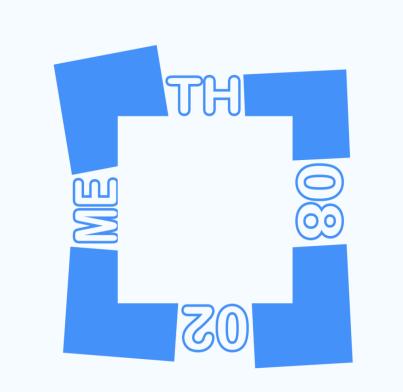


The Leuven Embedded Figures Test (L-EFT): Re-embedding the EFT into vision sciences



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Summary

Background

- In 1950, Witkin developed the Embedded Figures Test (EFT)
- In its pure form, the EFT is a valuable measure of perceptual bias
- Since Witkin, however, the perceptual demands of the task have been subsumed by aspects of intelligence, executive function and personality.

Goal

 To re-investigate the perceptual factors that predict effective embedding and develop a new EFT which systematically manipulates those perceptual factors.

Conclusion

 This novel Leuven-EFT (L-EFT) offers a more sensitive and controlled measure of perceptual bias, and is better able to differentiate between genuine perceptual, as opposed to executive, contributions to EFT performance.

Methods

First experiment (N=250)

 To evaluate the impact of several perceptual factors, such as line continuity, complexity, closure, and different part-whole relationships, on the degree of perceptual embedding.

Second experiment (N=45)

To evaluate test-retest reliability and sensitivity to individual differences

Participants

- 250 first year bachelor students
- 2 collective testing sessions

Session 1a:

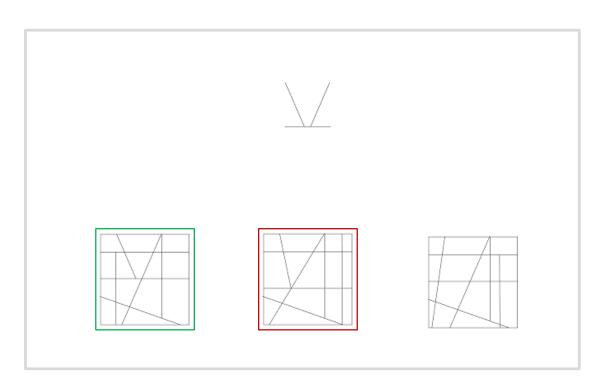
- Short RPM
- L-EFT
- M-EFT
- 3D-EFT
- Session 1b:
- Short RPM
- Flanker Task
- Switching Task
- Corsi Tapping Test

Session 2:

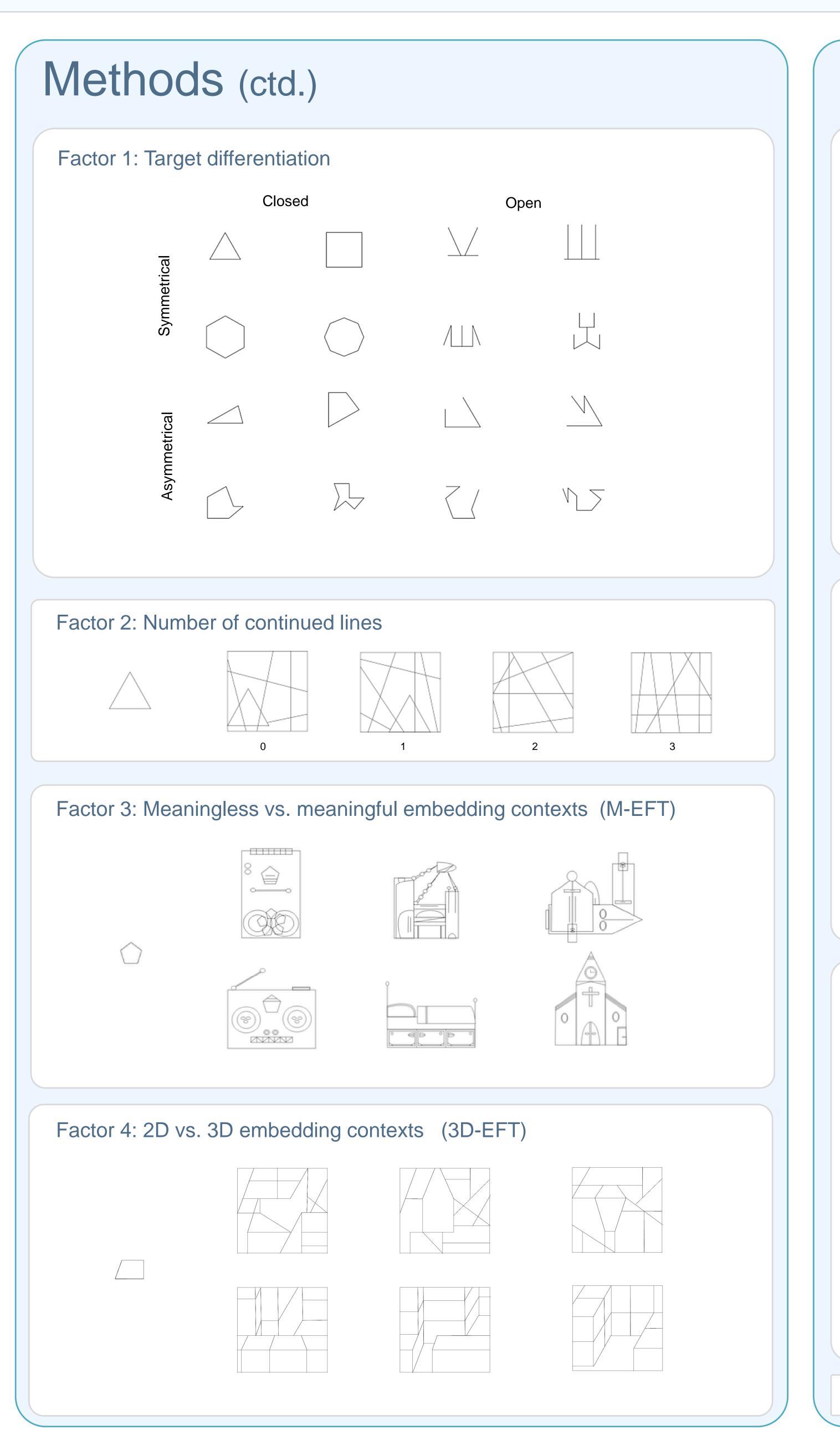
L-EFT

M-EFT

• 3D-EFT



3AFC task

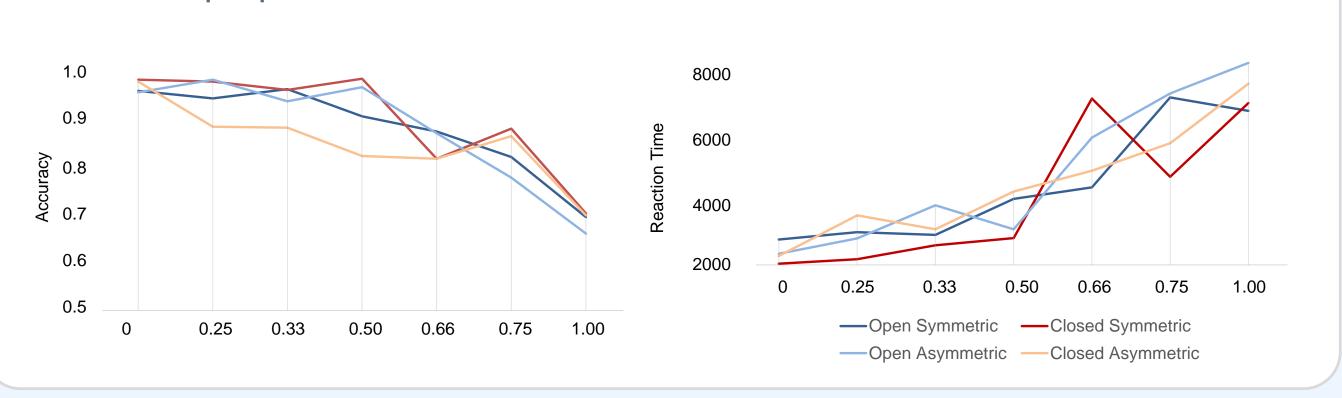


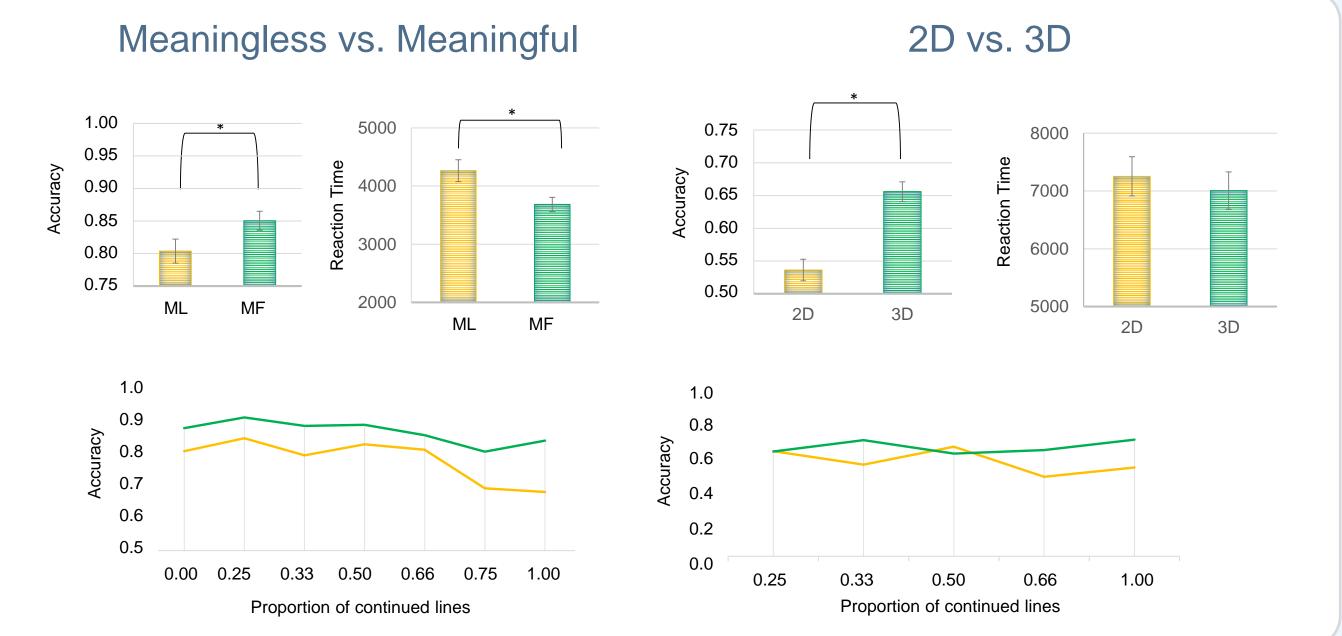
Results

L-EFT overall results ~> more accurate responses for:

- Complex > Simple targets
- Closed > Open shapes
- Symmetric > Asymmetric shapes
- Smaller proportion of continued lines
- Fewer number of lines crossing the target

Effect of proportion of continued lines:





Correlations

Amongst the different EFT versions:

	Accuracy	L-EFT	3D-EFT	M-EFT	RT	L-EFT	3D-EFT	M-EFT
-	L-EFT	0.54 ¹			L-EFT	0.68 ¹		
-	3D-EFT	0.39	/		3D-EFT	0.40	/	
-	M-EFT	0.64	0.66	/	M-EFT	0.51	0.65	/

¹ Refers to the test-retest correlation.

With tasks measuring executive functioning or IQ:

		RPM	Corsi Tapping	Flanker Task	Switching Task
_	L-EFT	0.23	0.21	0.09	0.12

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