

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:

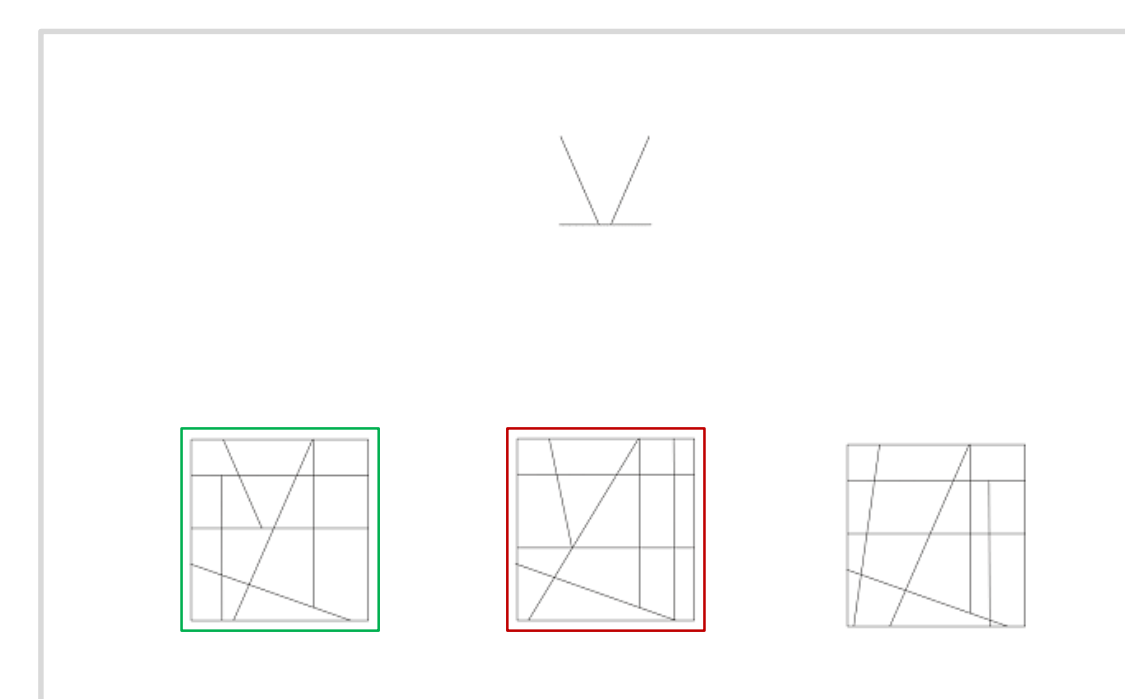
- Short RPM
- L-EFT
- M-EFT
- 3D-EFT

Session 1b:

- Short RPM
- Flanker Task
- Switching Task
- Corsi Tapping Test

Session 2:

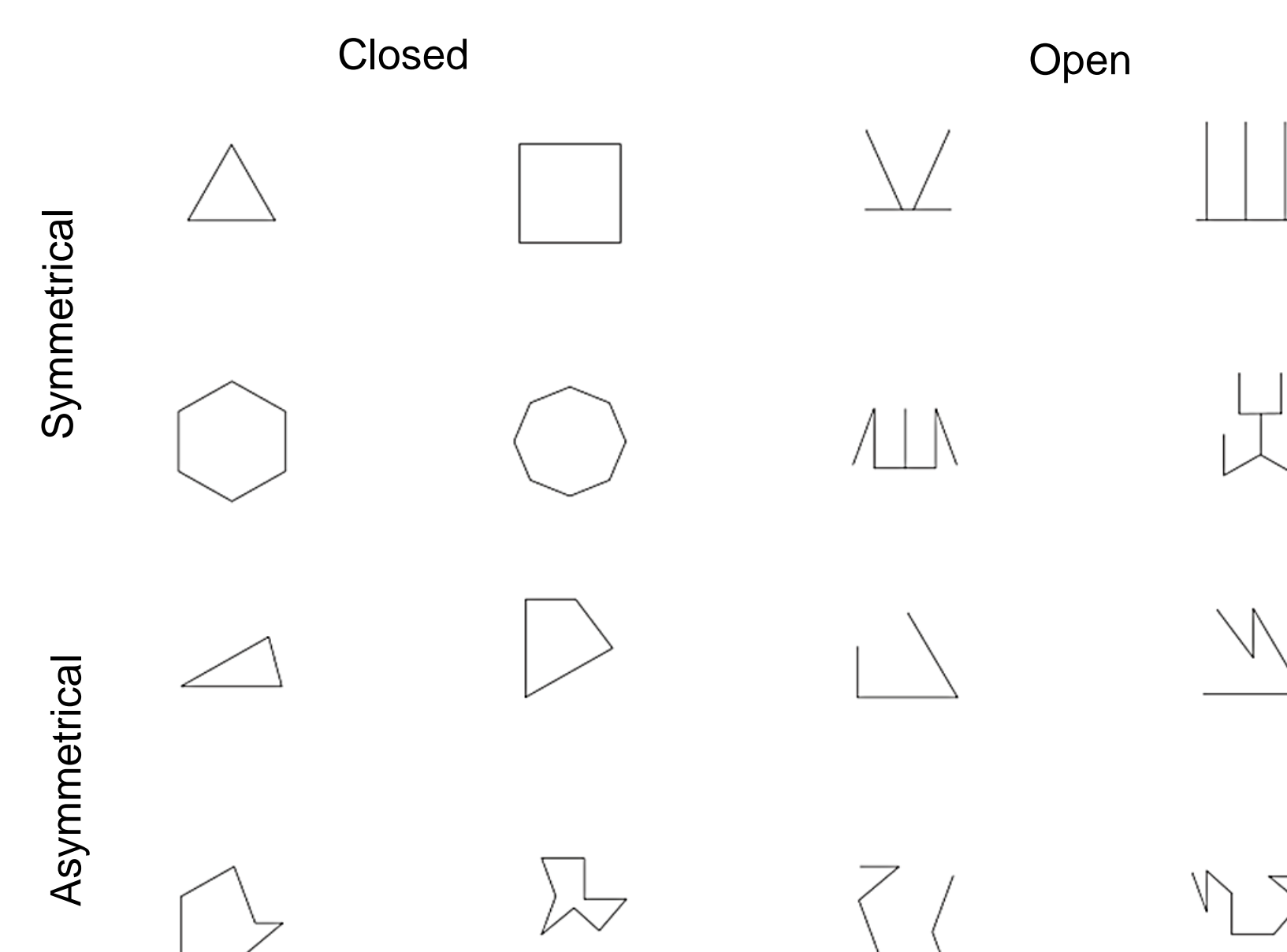
- L-EFT
- M-EFT
- 3D-EFT



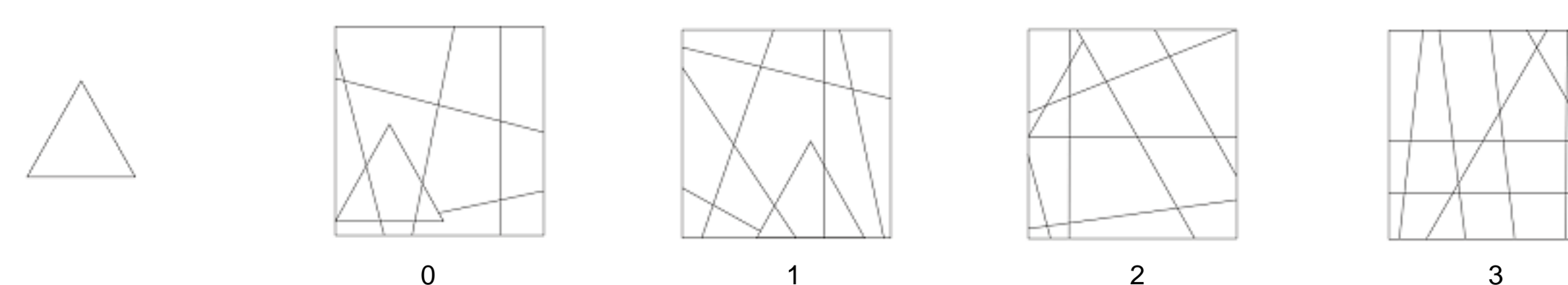
3AFC task

Methods (ctd.)

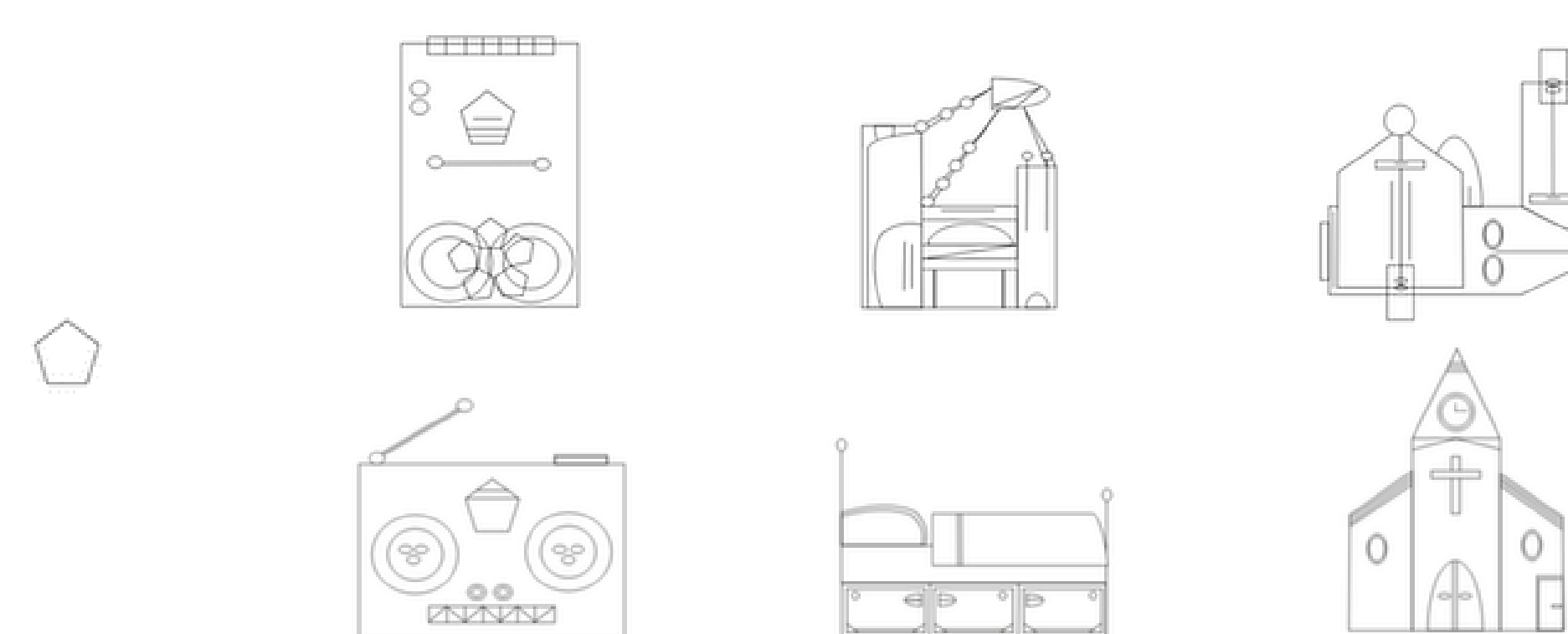
Factor 1: Target differentiation



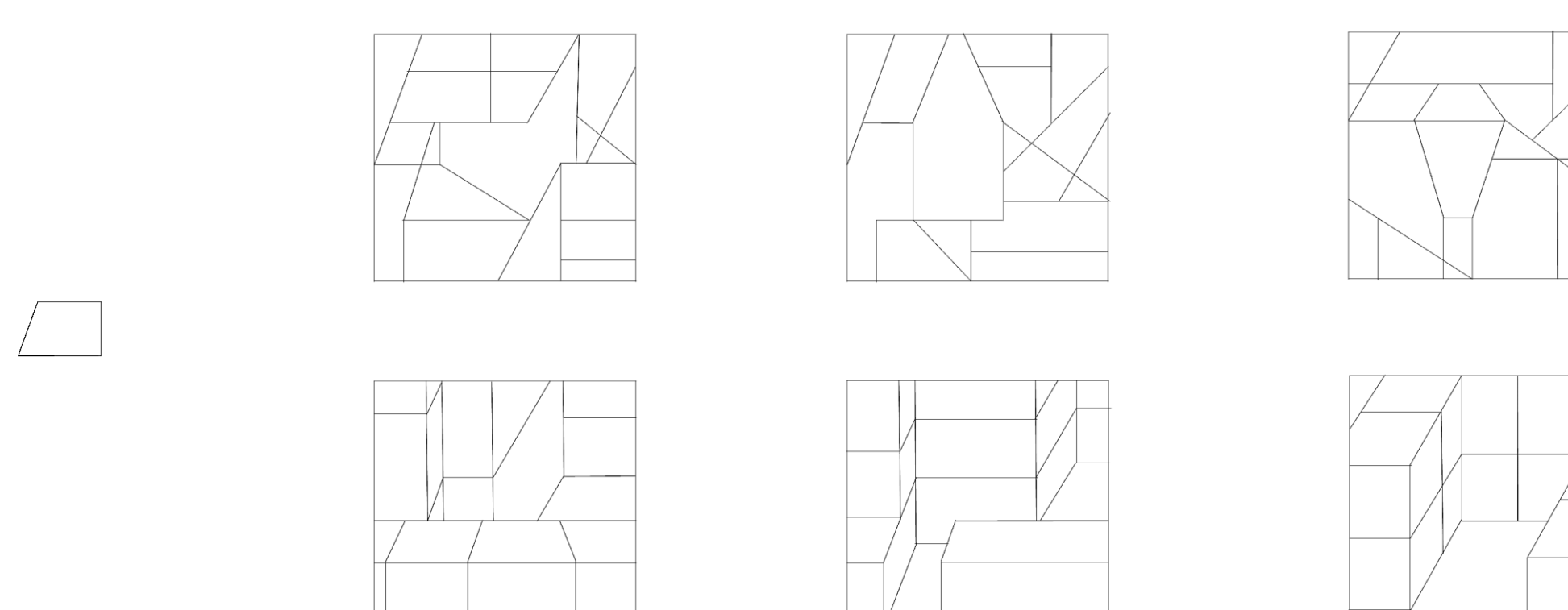
Factor 2: Number of continued lines



Factor 3: Meaningless vs. meaningful embedding contexts (M-EFT)



Factor 4: 2D vs. 3D embedding contexts (3D-EFT)

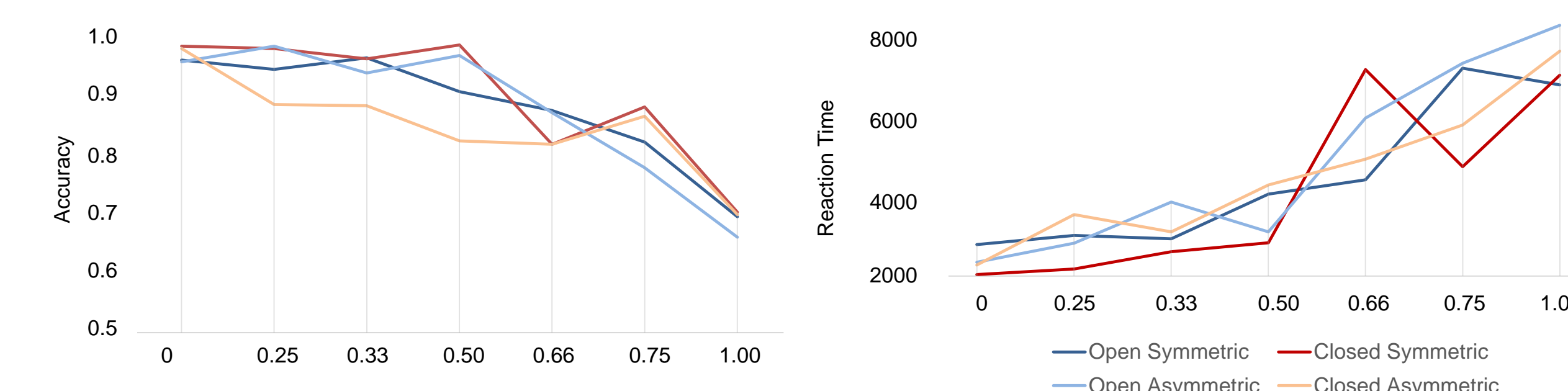


Results

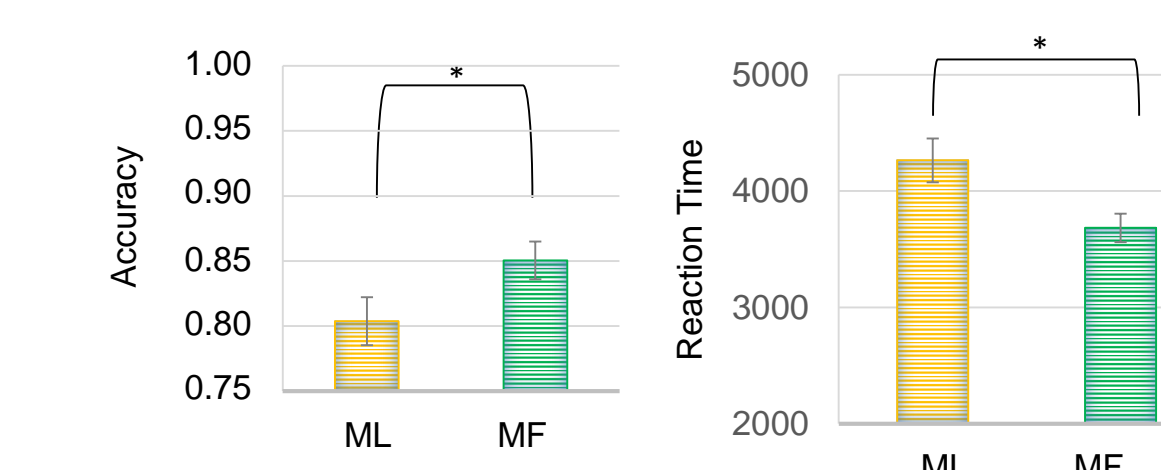
L-EFT overall results ~> more accurate responses for:

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

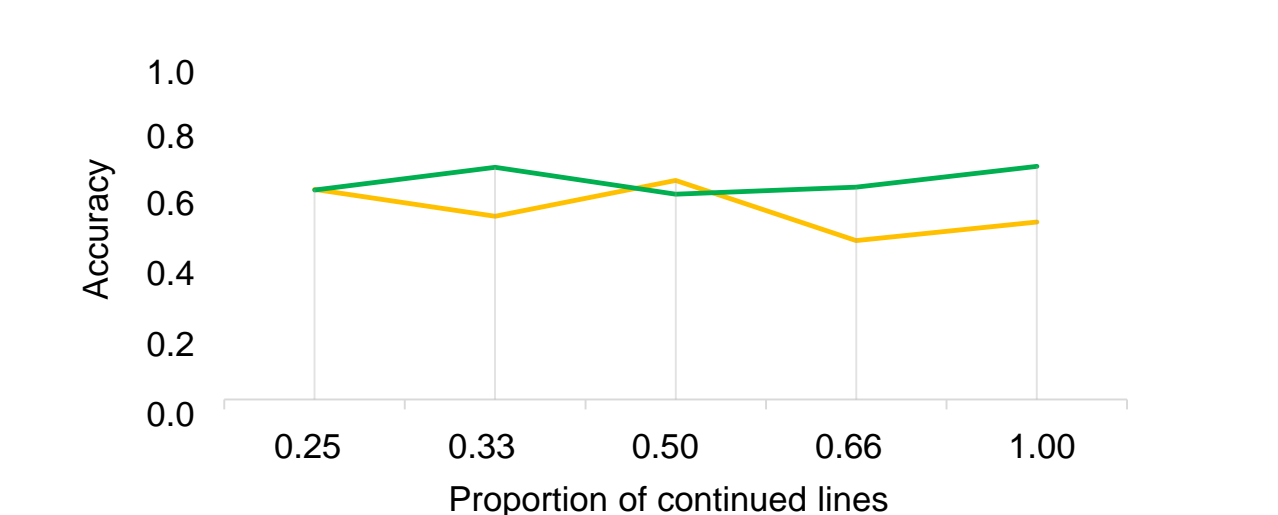
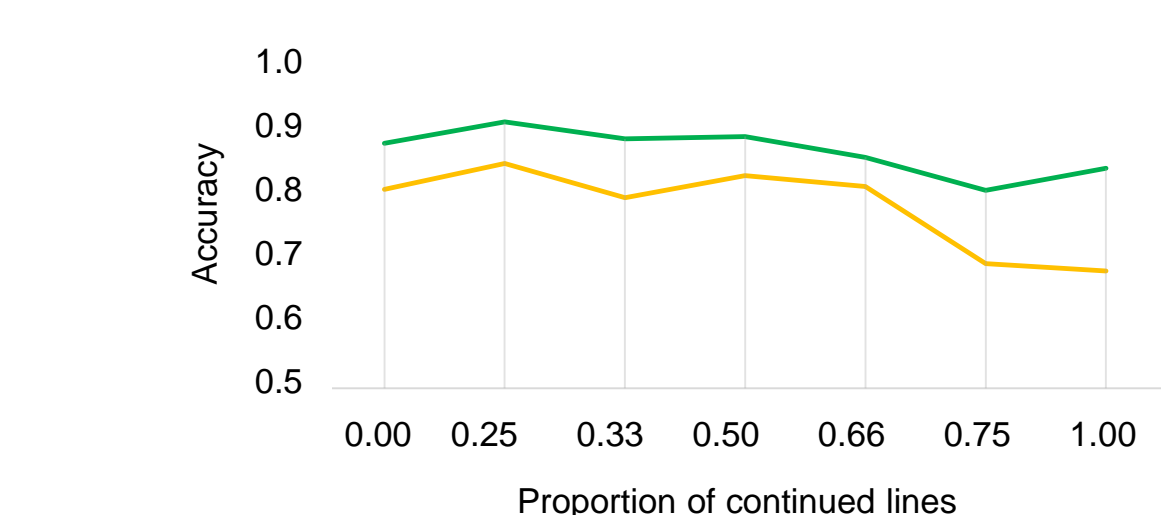
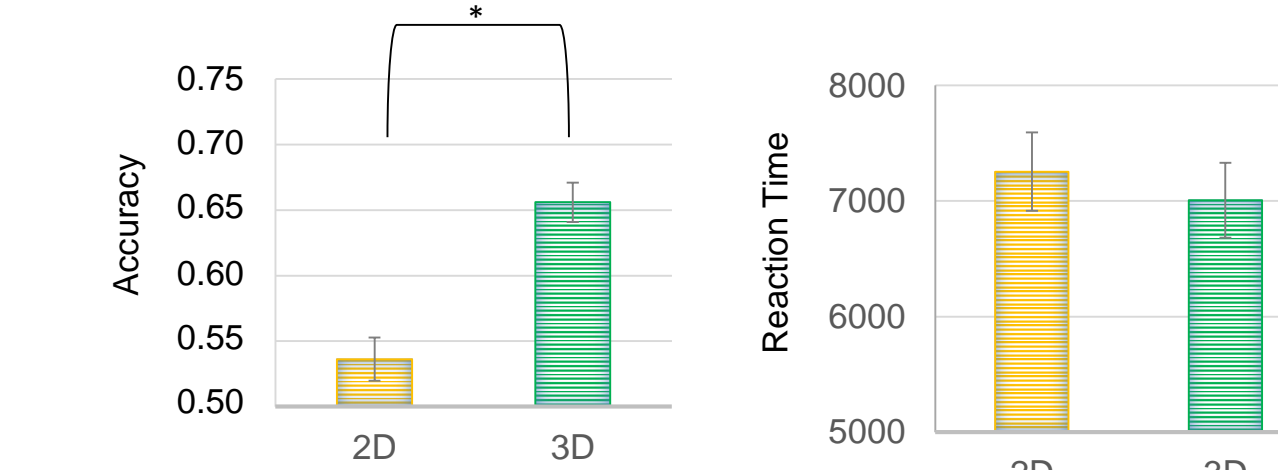
Effect of proportion of continued lines:



Meaningless vs. Meaningful



2D vs. 3D



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