



THE MOZART EFFECT:

An Artifact of Preference

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Introduction

◎ The “Mozart Effect”

- Spatial-temporal abilities are enhanced after listening to music composed by Mozart
- Listening to Mozart makes you smarter

◎ Spatial-Temporal

- Being able to mentally rotate 2D and 3D objects

Introduction

- ◎ The “Mozart Effect”
 - Similar to transfer or priming
 - Key difference being that Mozart is listened to passively
 - Cross-modal priming effects are weak

Introduction

⦿ Reason

- Long term improvements have been shown as a consequence of music lessons.
 - What about the short term?

⦿ Why

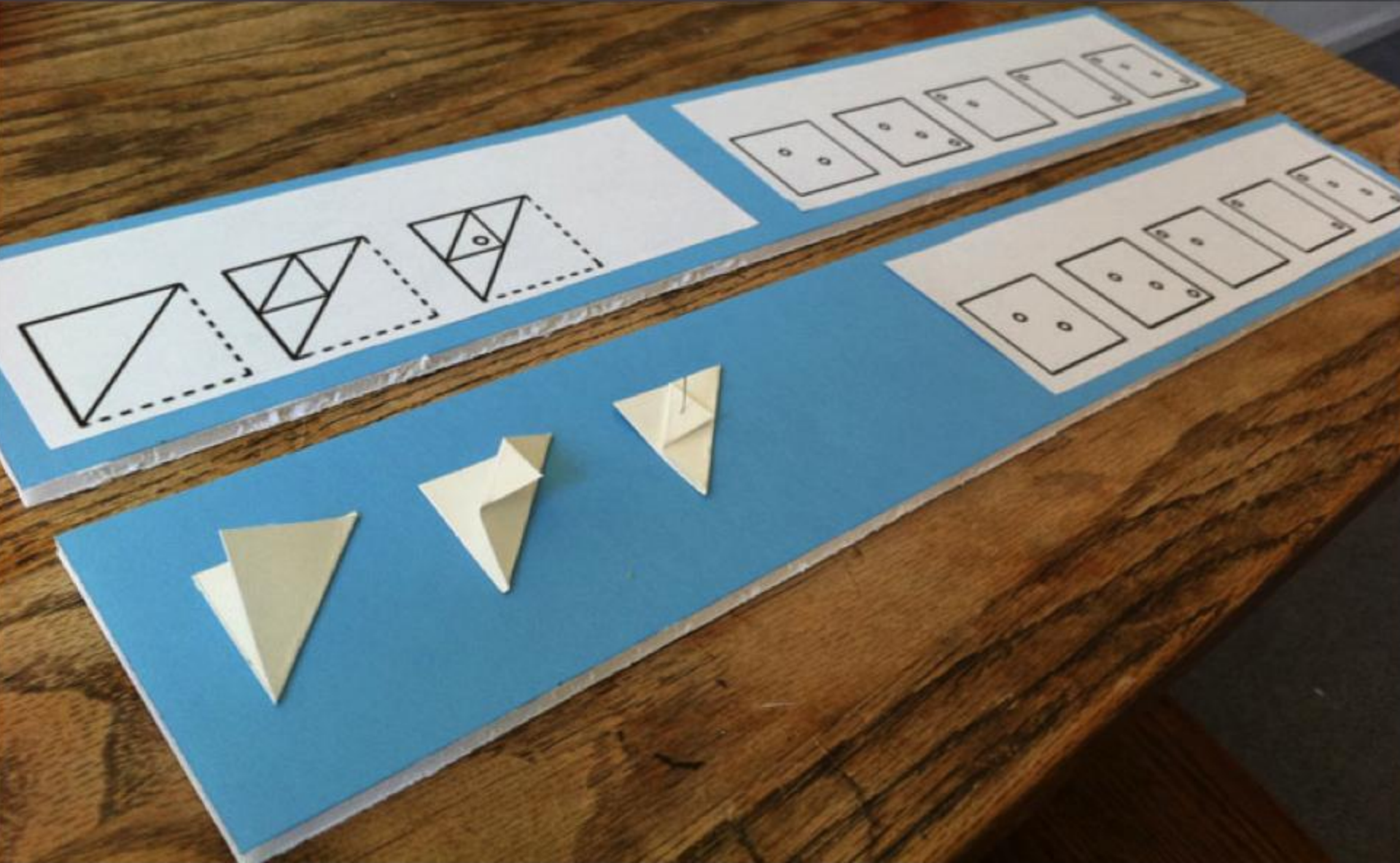
- Effect could improve performance of pilots or spatial engineers
- If proven can argue against independence of function across domains

Introduction

⦿ Problems?

- Past research has been tough to replicate
- Media generalized that Mozart makes you smarter
- Difficult to situate the Mozart effect in known cognitive phenomena

Paper Folding and Cutting Task



Method

- ◎ Experiment 1 – 56 undergraduates
 - Individually tested twice in a two-week period
 - Once for control (silence), once for stimulus
 - One visit sat in silence for 10 minutes
 - One visit listened to 10 minutes of either Mozart or Shubert
 - During both visits, after the 10 minute period participants used a computer and mouse to complete a series of 17 PF&C tests.

Method

- ◎ Experiment 2 – 28 undergraduates
 - Individually tested twice in a two-week period
 - Once for control (short story) once for stimulus
 - One visit listened to 10 minutes of the short story “The Last Rung on the Ladder”
 - One visit listened to 10 minutes of either Mozart or Shubert
 - During both visits, after the 10 minute period participants used a computer and mouse to complete a series of 17 PF&C tests.

Results: Experiment 1

- ⦿ An ANOVA was used to examine performance as a function of condition, musical piece, and testing order.
- ⦿ A main effect of condition revealed that scores on the spatial-temporal task were higher after listening to music than after sitting in silence (which accounted for 20% of the within-subjects variance)

Results: Experiment 1

- ◎ The testing order indicated that performance improved from the first to the second session (which accounted for 8% of the within-subject variance).
- ◎ No other main effects or interactions were significant.

Results: Experiment 2

- ⦿ An ANOVA that examined effects of condition and testing order revealed that performance improved from the first to the second testing session (accounting for 14% of the within-subjects variance).
- ⦿ The main effect of condition was not significant and did not interact with testing order. In other words, the Mozart effect disappeared when the control condition consisted of a story rather than silence.

Results: Experiment 2

- ⦿ An ANOVA with three factors (condition, testing order, and preference) confirmed that preference interacted with condition.
- ⦿ Overall levels of performance were better in participants' preferred condition than in their non preferred condition.
- ⦿ Participants who preferred the Mozart piece scored marginally higher than other participants across conditions.

Discussion

- ⦿ “Mozart Effect” is a misnomer
- ⦿ Same results achieved listening to short story and classical composers
 - No observable difference between musical stimulation and other positive mental stimulation

Discussion

- ⦿ Better results could be explained by heightened mood and arousal, worse could be explained by lowered mood/arousal.
 - Low mood participants could be bored.
- ⦿ Music facilitates emotional change.