The Mozart Effect

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**Introduction**

- **Mozart Effect**
  - Idea that listening to Mozart increases intelligence
  - Short-term effect
  - Replication results mixed
- **Spatial-temporal tasks only ones affected**
• Replication was goal
  o Experiment 1: Half Mozart, half Schubert
  o Experiment 2: Preference-based
    ▪ Short story vs. Mozart preference

• Successful replications used similar control
  o Sitting in silence
  o Relaxation tapes
  o Repetitive music
The study consisted of 84 undergraduates.
- 56 for Experiment 1
- 28 for Experiment 2
Audio and Conditions Used:

Music Conditions:
10 minutes of Mozart’s Sonata
10 minutes of Schubert’s Fantasia for Piano

A computer was used to digitally record both musical pieces from compact disks, but the sound quality was unaffected by the process. Stimulus presentation and response recordings were controlled by a program called PsyScope 1.1. Listeners would receive a stereo signal over headphones in a booth.

Controlled:
Silence for 10 minutes
Excerpt from a short story for 10 minutes
Participants used a mouse connected to a computer to start the 10 minute task and recorded their responses on the PF&C (Paper-folding and Cutting) task.

-Includes 34 items: 20 from the Stanford-Binet-Intelligence Scale, 14 created for the experiment.
-Items showed a rectangular piece of paper with multiple folding and cutting manipulations with 5 possible results.
Design and Procedure

- Two conditions: music and control
- On separate days, within 2 weeks
- 10 minute listening periods
- Immediately followed by 17 PF&C items for max of 1 minute
- Participants chose one of the five unfolded displays shown as correct outcome
- 17 items were in order of least challenging to most challenging
- Different sets of tasks items were used in each condition
- Counterbalanced order of conditions and subsets of tasks
- There was no positive or negative feedback given to the students
- Each session took approximately 25 minutes
Experiment 1

- All 56 subjects were in both the experiment and control group.
- Control Group: All 56 subjects wore headphones in silence for 10 minutes.
- Experiment Group: 28 of the subjects listened to Mozart and 28 listened to Schubert for 10 minutes.
Experiment 1 continued

- After listening to either silence or the music the subjects completed 17 tasks where a rectangular sheet of paper was displayed with folding and cutting lines. They had to choose from 5 possible outcomes.
Experiment 1 continued

- Results showed that when the subjects listened to either the Mozart (12.75) or Schubert (12.36) music their spatial-temporal task scores were higher compared to the scores they received after sitting in silence (11.89 for the first group of 28 and 11.04 for the second group of 28).
Design and Procedure of Experiment Two

- all 28 students listened to Mozart in music condition
- all listened to 10 minute short-story in control condition
- asked which condition they preferred and found the most interesting after 2nd test session
Experiment 2

- The goal of experiment 2 was to test the hypothesis that the Mozart effect is really a result of personal preference. The assumption was that an individual would have better performance on the task following the preferred condition.

- If the participants preferred Mozart, then they would do better on the task than those who did not prefer Mozart.
Experiment 2

- Control Condition: Listening to a short story
- Experimental Condition: Listening to Mozart
- This allowed the subjects to have a preference of listening to the story or to Mozart.
**Experiment 2 Results**

- The Mozart effect did not exist when the control condition was listening to a story rather than to silence.

<table>
<thead>
<tr>
<th>Preference</th>
<th>n</th>
<th>Mozart</th>
<th>Story</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mozart</td>
<td>13</td>
<td>14.62 (2.40)</td>
<td>13.23 (2.35)</td>
</tr>
<tr>
<td>Story</td>
<td>15</td>
<td>11.60 (4.29)</td>
<td>12.67 (3.37)</td>
</tr>
</tbody>
</table>

- The overall performance levels were better in the subjects' preferred condition than in their non-preferred condition.
Discussion

- The Mozart Effect has nothing to do with Mozart!
  - Effect should generalize to Classical or Romantic styles
  - Advantage is not a consequence of listening to music
- Results show no evidence that improvement differs from other pleasant auditory stimuli