Franco, F., Swaine, J. S., Israni, S., Zaborowska, K. A., Kaloko, F., Kesavarajan, I., & Majek, J. A. (2014). Affect-matching music improves cognitive performance in adults and young children for both positive and negative emotions. Psychology of Music, 42(6), 869-887.

Summary by: Nahal Emami

Purpose: The Mozart Effect refers the improvements in cognitive performance when listening to any music. Arousal and Mood Hypothesis proposes that improvements are because of positive affect prompted by music. This paper disagrees with these theories and provides support for a different hypothesis.

Hypothesis: Improvements in cognitive performance are facilitated by listening to affect-matching music (music that the listener believes expresses emotions congruent with their current affect/mood).

Methods: Three experiments were done with an opportunity sample of 92 adults, 40 children aged 3-5 and 40 aged 6-9. To avoid personal associations/confounding factors of familiarity, a new composition by Joel Swaine was used. Tempo differentiation and major and minor scales were used to create the effect of mood. Participants were induced to have an initial mood of happy, sad or angry, assessed via the Profile of Mood States questionnaire, and then were randomly assigned to mood-matching or mood-mismatching conditions. To control for individual differences a pre-/post-test design was used, where scores were compared.

Results: Experiment 1 revealed a small significant influence of "happy" and "angry" mood-matching music. However, this was only with adult females. Experiment 2 using "happy" vs. "angry" affects with preschool and school-aged children did not reveal significant association. Experiment 3, with preschool children using "happy" vs. "sad" music revealed significant improvement without gender differences.

Conclusions: The results support the hypothesis that improvements in cognitive performance are produced by listening to affect-matching music. The reason Experiment 3 showed a significant effect could be because it had a longer mood-induction phase (3 mins instead of 1), which might be more effective. One source of error could be if the listener did not perceive the emotion that was intended, which means affect-matching was unsuccessful. Future studies should have an accurate representation of affect in music, perhaps through consideration of demographics and personal variables.

Simple terms:

The Mozart Effect claims that listening to any music improves cognitive performance. The Arousal and Mood Hypothesis says improvements in cognitive performance are because of the happy feeling we get with music. However, these views are flawed because they assume any music produces happiness or that sad music only makes

people sad. Listening to music that matches one's current affect or emotion can improve cognitive performance. This is shown by Franco et al. who conducted three tests with adults and young children. The participants completed an initial recall test. The experimenters made them happy, sad or angry and assigned them to listen to mood-matching or mood-mismatching music while taking another memory test. To make sure familiar songs do not impact mood, the experiment uses new songs. Experiment 1 revealed a small improvement in scores with either "happy" or "angry" mood-matching music, but only with adult females. Experiment 2 using "happy" and "angry" music with 3-5- and 6–9-year-olds were not better with matched music. In Experiment 3 using "happy" and "sad" music, preschool children improved their scores with appropriate music, without gender differences. The reason Experiment 2 did not show amelioration while 3 did could be because the music was played for longer in Experiment 3. Another error could be, for example, if the participant was happy but the music sounded sad to them unlike what was intended. Future studies should consider cultural and individual differences when choosing music.

Potential Songs:

Happy Throwback Playlist
- Happy by Pharrell Williams
- Mamacita by Ozuna
- Temperature by Sean Paul
- Dynamite by Tao Cruz
- I Gotta Feeling by Black Eyed Peas
- Party Rock Anthem by LMFAO
- Last Friday Night by Katy Perry
- Party in the USA by Miley Cyrus
- Get Lucky Pharrell Williams and Daft Punk

Sad Playlist
- Turning Tables by Adele
- Hurt by Johnny Cash
- Younger Days by MT Joy
- When the Party's Over by Billie Eilish
- Jealous by Labrinth
- Nothing Else Matters by Metallica

Listen When You're Angry
- Do I Wanna Know by Arctic Monkeys
- Paranoid by Black Sabbath
- Sad but True by Metallica
- Heart of Glass by Miley Cyrus
- So What by Pink

Gonzalez, M. F., & Aiello, J. R. (2019). More than meets the ear: Investigating how music affects cognitive task performance. Journal of Experimental Psychology: Applied, 25(3), 431-444. doi:http://dx.doi.org.libaccess.lib.mcmaster.ca/10.1037/xap0000202

Summary by: Harshdeep Dhaliwal

Purpose: This study examined the relationship between the characteristics of music, tasks, and the task performer, along with how variance in external stimulation (i.e. music) preference influences task performance.

Hypothesis: Suspect that people with stronger preferences for external stimulation will pay greater attention to music, which may make them less susceptible to boredom (and prevent mind wandering) or cause individuals to become unable to focus because of the distracting stimulus.

Methods:
- Recruited 150 undergraduate students who are enrolled in various psychology courses. The participants first completed personality measures (i.e. Boredom Proneness Scale and Wonderlic).
- The participants then completed two cognitive tasks; a simple search task and a complex computer-based word-association task, which were counterbalanced for each participant.
- The participants also heard simple or complex instrumental music (depending on the condition) at a soft or loud volume while completing these tasks (the control group did not listen to any music). The participants then completed a questionnaire that uses the Likert scale, after conducting each task.

Results:
- Results showed that participants who had a high preference for external stimulation performed better in the simple task, when listening to simple music at a loud volume. Also, individuals with low preference for external stimulation performed better in this task when listening to complex music at a soft volume.
- Results also showed that stronger preferences for external stimulation may be associated with greater levels of engagement in complex tasks, when listening to music.

Conclusion: Therefore, music's influence depends on the performer and the context.

Simple terms:

This study examined the relationship between the characteristics of music, tasks, and the task performer, along with how different music preferences influences task performance. It was determined that individuals with a high preference for music performed difficult tasks better when listening to music, and performed easier/more basic tasks better when listening to simple music at loud volumes. Also, this article

concluded that listening to complex music at soft volumes allows individuals with a lower preference for music to complete easier tasks more efficiently.

Potential Songs:

Simple instrumentals (recommended for individuals with high preference for external stimulation at a loud volume)
- Dynamite (Instrumental) by BTS
- Wish (Seokjin Theme) by BTS
- Hope & Glory by Black Red Gold
- Stellaristique vision by degravitated
- Delta state by nite sky
- Every breath you take by Tomas Lee
- (Everything I do) I Do It For You by Benji Noor
- Luna by 15
- River flows in you by Yiruma, Johannes Bornlof

Complex instrumentals (for individuals with low preference for external stimulation at a soft volume)
- Flying (Taehyung theme) by BTS
- Not Alone (Jungkook theme) by BTS
- You are here by Lee Hyun
- It's definitely you (instrumental) by V
- when the party's over by Fiona Floyd
- Magic Shop - Orchestra Mix by MDP
- Fake Love (Alternate) by MDP
- Piano music for concentration by Arthur Byron
- silbermond by Flavia Cortez
- Ballerina by Anna Straub
- Stars by paris91