Artificial Intelligence or Artistic Genius: How Does the Identified Composer of Classical Music Influence the Perceptions of Listeners?

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Abstract

- Recent advancements in artificial intelligence (AI) have sparked skepticism about AI-generated art, including music.
- This experiment investigates how the attribution of classical music to different composers (specifically, famous human composers versus AI) affects listeners' perceptions.
- Participants (n = 80) listened to classical music tracks attributed either to a well-known composer (e.g., Tchaikovsky) or an AI system, then rated the music on perceived quality, emotion, and technicality.
- Results show that music attributed to human composers was rated significantly higher across all categories, while AI compositions received lower ratings, regardless of the actual composer.
- These findings suggest that the perceived composer plays a crucial role in shaping how listeners evaluate classical music.

Background

- Research has shown that humans tend to hold implicit biases against AI-generated art, providing a crucial basis for understanding how these biases might extend to other creative domains, such as music (Zhou & Kawabata, 2023).
- Within the realm of music, studies indicate that music fans often harbor negative attitudes toward AI-generated pop and rap music (IFPI, 2023), prompting questions about whether similar biases apply to classical music.
- These findings suggest that people's perceptions of AI in music may vary by genre, creating an opportunity to investigate how the attribution of classical music—to either human composers or AI systems—shapes listener evaluations.

Methods

- This study involved **n=80** participants, who were randomly assigned to one of four groups, where they:
  - Listened to AI-generated music presented as AI-generated.
  - Listened to a composer's music presented as AI-generated.
  - Listened to AI-generated music presented as a composer's piece.
  - Listened to a composer's music presented as that composer's piece.
- For pieces labeled as AI-generated, the music was attributed to *SunoAI*, a known music-generation platform, and for pieces labeled as human-composed, the specific piece name and composer details were provided (e.g., *Fantasy in F Major (1842)* by Felix Mendelssohn).
- The referenced composers were Joseph Haydn, Felix Mendelssohn, Franz Schubert, and Pyotr Ilyich Tchaikovsky. After listening to each piece, participants rated it on a 1-to-5 Likert scale across three dimensions:
  - Compositional Quality, Emotional Expressiveness, Technical Mastery.

Results

- For music written by classical composers, there was a decrease in all dimensions when presented as AI-generated, across Quality (**-0.72** points), Emotion (**-0.59** points), and Technicality (**-0.64** points).
- For music generated by artificial intelligence, there was an increase across all dimensions when presented as the work of a famous composer, across Quality (**0.54** points), Emotion (**0.36** points), and Technicality (**0.78** points).

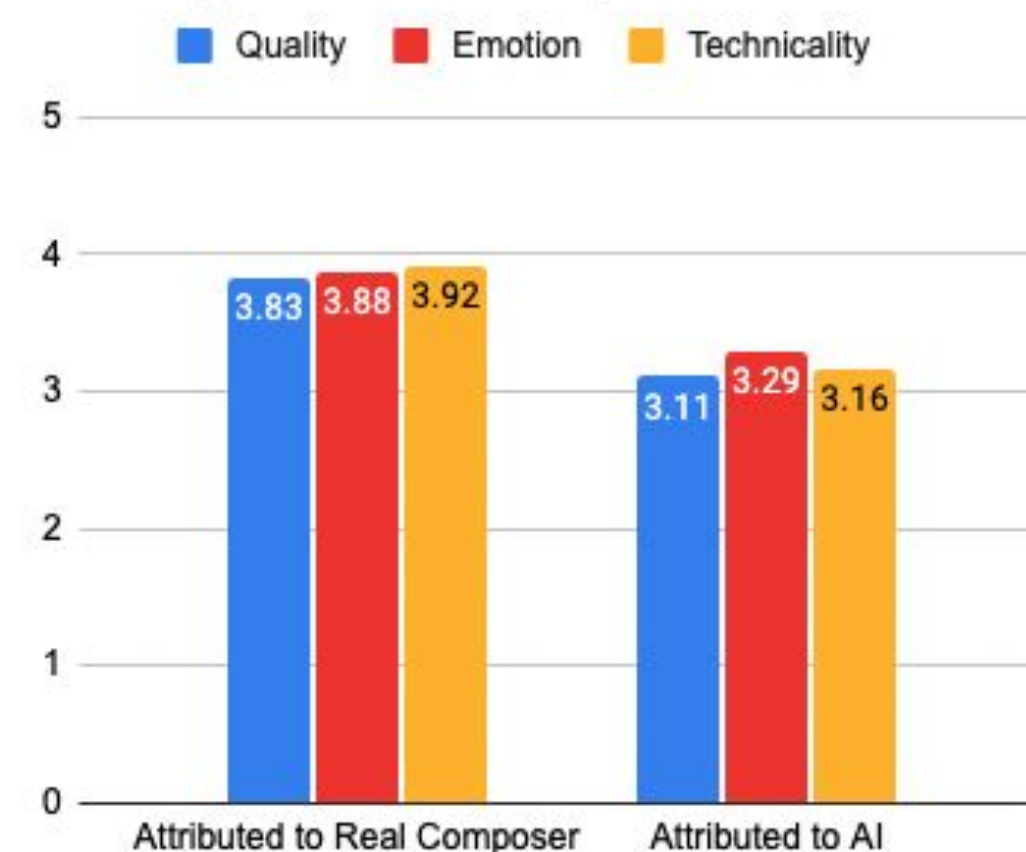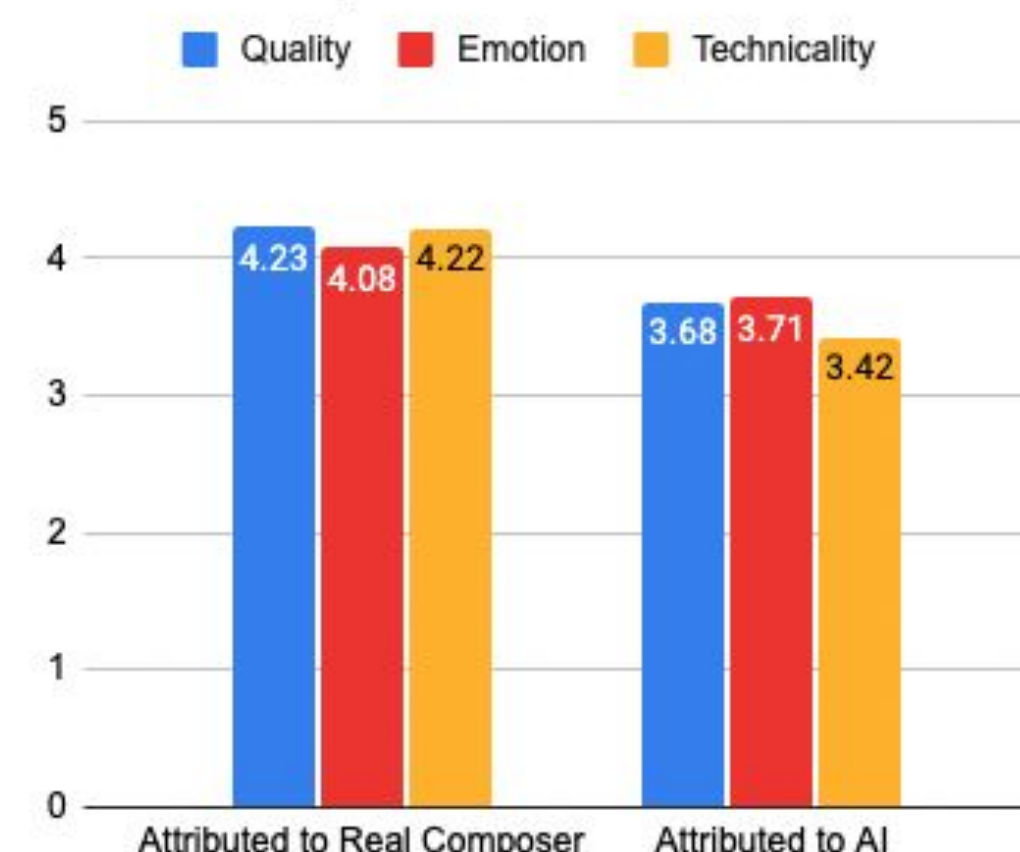Figure 1. Perception of Classical Music Made by Famous Composers

Figure 2. Perception of Classical Music Generated by AI

Discussion

- For classical pieces made by famous composers, Figure 1 shows that simply presenting those pieces as being generated by AI **reduces** the score across categories by **0.6** to **0.7** rating points.
- For AI-generated pieces, Figure 2 highlights that presenting the music as being written by a famous composer **increases** the score across categories by **0.3** to **0.8** rating points.
- As validated by the control groups in Figure 3, people rated the music written by **famous composers** slightly higher than the music generated by AI.

Figure 3. Difference Ratings for Classical Music vs AI-Generated Music (Control Groups)
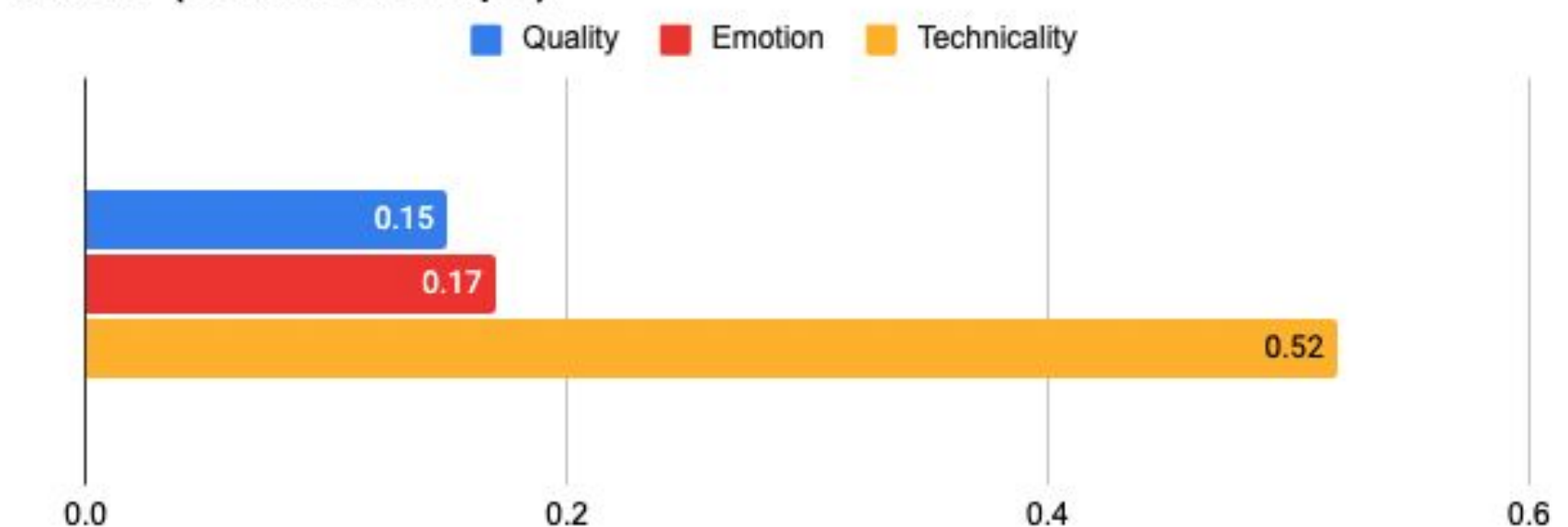
Conclusion

- Music attributed to human composers consistently received higher ratings in quality, emotional expressiveness, and technicality, while music attributed to AI was rated lower even when the actual composer did not align with the attribution.
- These findings underscore the role of attribution bias in shaping listener perceptions, suggesting that preconceptions about AI's creative abilities continue to affect how its contributions are received, especially in human-dominated domains like classical music.
- Future research could explore whether familiarity with AI technology could help mitigate these biases, and identify the factors causing this effect.