4-17-2013

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Aesthetic Evaluations and Emotional Responses Evoked by Paintings and Classical Music in Artists, Musicians, and Non-Experts

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Introduction

• In most research examining emotional response, whether the auditory stimuli are music or the visual stimuli are pictures or paintings, participants have received only one type of stimulus presented to the corresponding sensory system. However, real-life emotional experiences involve the presence of stimuli simultaneously affecting different sensory modalities, such as vision and hearing.

• Unimodal studies have acted as a comparison for the fewer but more complex studies of emotion that involve stimuli that can be responded to by two sensory systems, so-called bimodal studies, such as a musical excerpt and a painting. Unfortunately, few studies have used bimodal stimuli, and those that have done so have not examined auditory or visual expertise (musicians and artists) and previous art experiences.

• Interactions between visual and auditory perceptual systems have been well established (e.g., McGurk & MacDonald, 1976). McGurk and MacDonald reported that visual information had a profound influence on what the participants heard in the auditory stimulus presentation. In particular, when the visual stimuli (e.g., lip movements of /ga-ga/) and auditory stimuli (e.g., hearing the syllable /ba/la/) were inconsistent, or incongruent in the information they contained, participants experienced processing difficulties where they reported neither hearing nor seeing the actual stimuli being presented, but reported something completely different (i.e., perceiving /da-da/), a phenomenon called the McGurk Effect (McGurk & MacDonald).

• In short, inconsistencies between visual and auditory stimuli negatively interfered with the processing of both stimuli, whereas consistencies between visual and auditory stimuli enhanced perception of each type of stimulus. The McGurk Effect has been replicated consistently in language domains under different conditions and across different domains (e.g., incongruent audiovisual displays of a plucked and bowed cello), and demonstrates that visual information influences what is heard and auditory information influences what is seen.

Objectives and Hypotheses

• The main objective of this study is to document the differences in aesthetic evaluations and emotional responses evoked by paintings and classical music in musicians, artists, and non-experts.

• The present research is expected to demonstrate a strong emotional enhancement effect, where the simultaneous presentation of two emotional stimuli to different sensory systems results in greater emotional responses compared to emotional stimuli presented individually, as measured by subjective ratings following the presentation of art and music congruent in emotion.

• The following four hypotheses will be investigated in this study:
  1. Musicians will provide higher ratings of arousal than artists and non-experts for all auditory stimuli.
  2. Musicians and non-experts will provide higher ratings of arousal than will artists for all visual stimuli.
  3. Musicians and artists will provide higher ratings of arousal and valence for all emotional congruent audiovisual stimuli compared to the non-experts.
  4. For all participants and regardless of expertise, congruent audiovisual stimulus presentations will receive the greatest and most accurate ratings of valence (whether the emotion is positive or negative) and arousal for emotions compared to the valence and arousal responses to the unimodal presentation of the auditory stimuli or the visual stimuli.

Method

Participants

• 40 non-experts
  - undergraduate students recruited from participant pool
  - no formal training in music or visual arts

• 40 artists and 40 musicians
  - recruited from School of Visual Art and School of Music
  - Junior- or senior-class standing
  - experience with two or more visual artistic media or musical instruments
  - formally enrolled in art courses or music courses for at least 4 years
  - used a primary medium or played a primary instrument for at least 4 years

Audio and Visual Stimuli

• 18 musical excerpts

<table>
<thead>
<tr>
<th>Composer</th>
<th>Piece</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beethoven</td>
<td>Piano Concerto no. 4, 3rd mv</td>
<td>1808</td>
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<tr>
<td>Ravel</td>
<td>Tombeau de l’amour, Ravel</td>
<td>1907</td>
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</table>

• 18 images of paintings

<table>
<thead>
<tr>
<th>Artist</th>
<th>Piece</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cassatt</td>
<td>Van Gogh</td>
<td>1888</td>
</tr>
<tr>
<td>Seurat</td>
<td>Picass</td>
<td>1889</td>
</tr>
<tr>
<td>Degas</td>
<td>Ballet Dancer</td>
<td>1874</td>
</tr>
</tbody>
</table>

Measures of Characteristic Emotions and Aesthetics

• Self Assessment Manikin (SAM; Bradley & Lang, 1994)

• Eight, binary, 9-point rating scale questions of aesthetics (Berridge, 1977)

Preliminary Results

• Significant main effect of presentation mode, F(2,10) = 27.77, p < .0001
• Significant interaction between presentation mode and emotion, F(4,20) = 7.20, p < .0001

Discussion

• Preliminary analyses reveal a significant effect of stimulus presentation mode on both ratings of arousal and valence. In general, the audio-only presentation results in greater ratings of arousal and valence compared to the visual-only presentation.
• Data collection of musicians and artists is currently underway. Further analyses will examine the effect of expertise on levels of arousal and valence for emotion eliciting stimuli.
• A future condition employs eye-tracking equipment which will record measures of ocular gaze, such as visual scan path, visual fixation times, and pupil dilations.

References


Acknowledgements

This work has been supported in part by the University of Dayton Office for Graduate Academic Affairs through the Graduate Student Summer Fellowship Program.

Thank you to Dr. Donald Finkbeiner and Dr. Greg Eams for their input on this study.

Thank you to Dr. Audra Hupnica and Dr. Sharon Gatto for their assistance in recruiting artists and musicians.

Thank you to Hannah Leib, Margaret Weidell, and Kristen Kemp for assisting in data collection and data entry for this study.
