DM2350

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Introduction

This project explores how a **synesthetic experience** related to **music** perception and **color** association **varies across cultures**, and whether music with more energetic expressions elicits richer color responses.

A total of **165 participants** from Brazil and 18 different countries took part in a survey using a customized webpage. They were presented to **six samples of songs** from a Brazilian musical genre known as ”Choro”, or ”Chorinho”.

The results showed important differences in color preferences for each emotional expression studied. Furthermore, a correlation between the subjective intensity of the excerpt (considering that, in terms of intensity, Joy > Tender > Sorrow) and the variety of colors chosen by the participants was observed.

Background

Studies have shown that people tend to follow certain patterns when associating emotions to colors [1].

These patterns are also present when associating music to colors [2], since this association is mediated by emotion [3].

There is a reasonable degree of consistency between users' associations of colour and music [4].

This can lead to new possibilities of representing musical information in a visual, graphical, non-verbal way, which in turn can be used in the construction of engaging interfaces for exploring and managing musical collections and databases.

Method

Six excerpts chosen to express the emotions **joy**, **sorrow** and **tender**

All excerpts were chosen from a popular **Brazilian instrumental genre**, “Choro”, or “Chorinho”.

165 Participants (120 from Brazil, 45 from other countries) listened and chose between **eight colors** (magenta, pink, blue, cyan, green, yellow, orange, red)

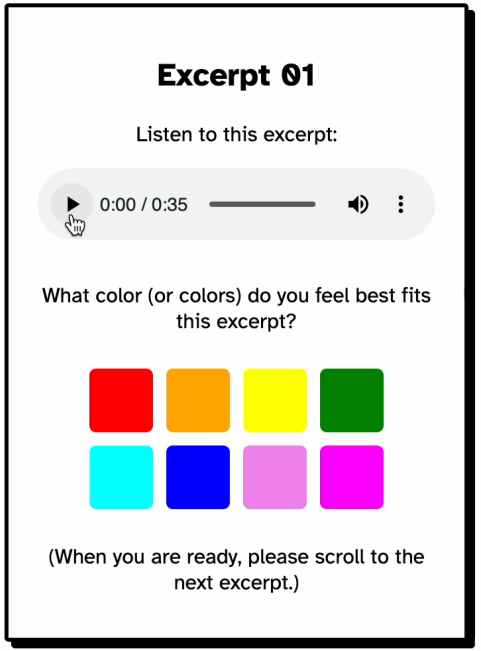
No mentions of emotions were made at any moment to the participants.

Data was analyzed with R, by counting and normalizing music-color associations across groups

Data, code for analysis and code for the webform/webpage available at: https://github.com/tiago-kth/human-perception

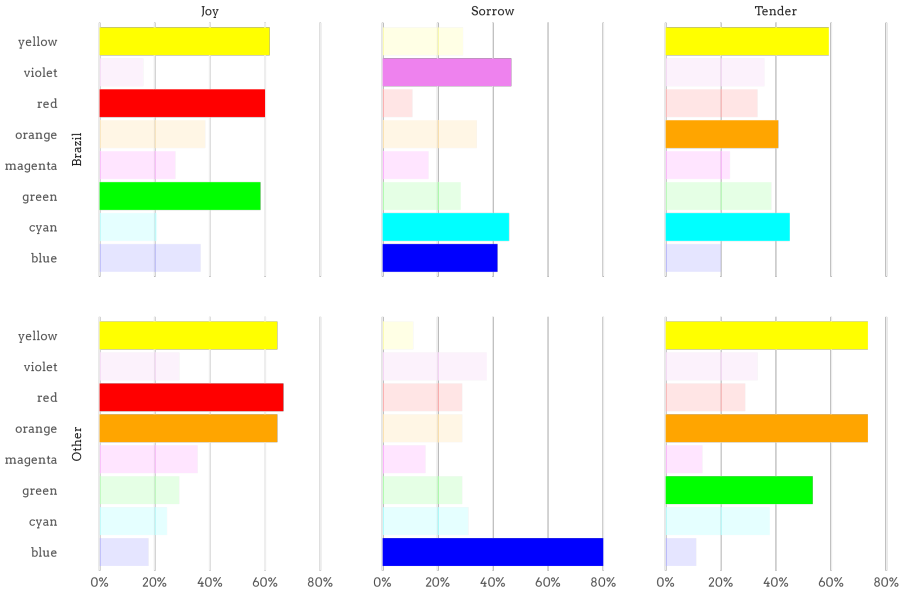
Method

Multiple colors could be chosen, and the website background changed accordingly



Results

Percentage of users that chose a given color to an excerpt of a given expression
(colors picked by less then 40% of the users are transparent to highlight the main picked colors)



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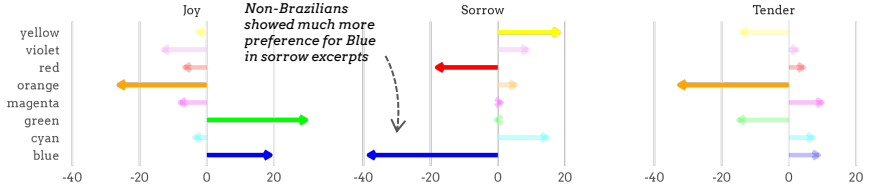
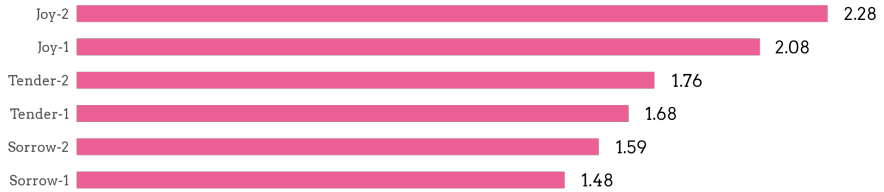


Average number of different colors chosen by participants for each excerpt



References

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2. Bresin, R. (2005). What is the color of that music performance?, In Proceedings of the International Computer Music Conference - ICMC 2005, 367-370

3. Lindborg P, Friberg AK (2015) Colour Association with Music Is Mediated by Emotion: Evidence from an Experiment Using a CIE Lab Interface and Interviews. PLOS ONE 10(12): e0144013

4. Voong, Michael (2007). Music organisation using colour synaesthesia. CHI EA '07: CHI '07 Extended Abstracts on Human Factors in Computing Systems. April 2007. Pages 1869–1874. https://doi.org/10.1145/1240866.1240913