

MUSIFEAST-17 STIMULUS COLLECTION METHOD

All music stimuli used in this study can be accessed via the MUSIFEAST-17 repository on OSF, https://osf.io/5ebz2/?view_only=919e021881ad4f898967fab7191b4174.

A systematic approach was used to select music clips across diverse genres and familiarity levels. 17 genres, selected based on UK and US listening statistics (Statista, 2024, 2024b), were targeted for stimuli collection. We aimed to reflect popular listening habits and ensure a broad representation of Western musical styles while excluding less clearly defined categories such as ‘world music’ and ‘religious music’. Genres chosen were: Ambient, Classical, Country, Dance, Electronic, Film music, Folk, Funk, Hip-hop, Jazz, Metal, Pop, Rhythm & Blues (R&B), Rock, and Video game music. We also included two subgenres from specific time periods—Sixties pop and Eighties pop—to facilitate future research comparing responses across different age groups. Our inclusion criteria specified that clips should have sections of at least 30-seconds with no lyrics, although non-lexical vocables (e.g., ‘oh’ or ‘la’) were acceptable (occurring in 90 of the 356 clips).

A total of 357 music clips were selected, 21 from each genre, with 7 clips per genre anticipated to be high, medium, and low in familiarity. To obtain data on the genre and familiarity of the clips, we used online platforms IMDb (for Film and Video game music) and Last.fm (for all other genres) With Last.fm, we navigated to the specific genre tag page (e.g., for Metal, <https://www.last.fm/tag/metal>) and viewed results by ‘Top artists’.³ For high familiarity clips, the artists on the first page of results were examined in order; their ‘Top tracks’ viewed by ‘All time’ were considered until a track was found with an instrumental section of at least 30 seconds long. If no suitable tracks were found from a particular artist, the next artist in the ‘Top artists’ list was considered. The above process was repeated for low and medium familiarity excerpts. For low familiarity, collection started from the final page of artists and worked backwards, and for medium familiarity, we navigated to page 12 of ‘Top artists’ and proceeded forwards from there.

For the purposes of our study, we required that the artist’s music was on Spotify and that the song belonged to the selected artist (i.e. their name was first credited under the song, not a feature or remix of someone else’s song). For Sixties and Eighties music, the song had to be originally released in 1960-1969 or 1980-1989, respectively. For low familiarity Sixties and Eighties, the extra tag ‘pop’ was added (e.g., <https://www.last.fm/tag/60s-pop>) to keep these subgenres stimuli within the broader ‘pop’ genre (i.e., not merely collecting 7 obscure tracks released in that decade). To overcome challenges in sourcing low familiarity Classical clips (well-known pieces performed by lesser-known artists tended to dominate the last pages of ‘Top artists’ in Last.fm), we used Classical music from a previously validated stimulus set rated as low familiarity (Jakubowski et al., 2024). The criterion that the track must belong to the artist was less relevant to Jazz, given that Jazz standards frequently become popular through covering artists. Jazz stimuli were thus selected slightly differently, by including popular and recognisable Jazz standards (Standard Repertoire, 2021) in the high familiarity sets, and ensuring that tracks chosen for medium or low familiarity sets weren’t popular Jazz standards being covered by a lesser-known artist.

Film and Video game music were identified via IMDb, by selecting the ‘Advanced title search’ option with title type ‘Movie’ sorted by ‘US box office’ and title type ‘Video

game' sorted by 'Number of ratings' for the genres, respectively. For high familiarity, 'Movie' was sorted 'high to low' and 'Video game' by 'descending', starting from the top and working down. Maintaining this sort for medium familiarity, the total number of entries (659,777 in 'Movie', 36,974 in 'Video game', as of January 2024) was divided by 200, rounded up to the nearest whole number, and worked down from that entry number (3299 for 'Movie', 185 for 'Video games'). For low familiarity, 'Movie' was sorted 'low to high' and 'Video game' by 'ascending', starting from the top and working down. Criteria for inclusion of Film and Video game music were that the original soundtrack album was available on Spotify, the track had to be composed specifically for the respective film or video game (i.e. not licensed songs from other bodies of work), and only one track per series or title would be included (the first appearing title in the list). For example, regarding 'Video game', there were several *The Last of Us*, *God of War*, and *Uncharted* games in the top-rated game series, so music was chosen only from the first appearing title (e.g., music collected from *The Last of Us* and skipping *The Last of Us 2*). The same approach was taken with 'Movie' (e.g., several *Avengers* and *Star Wars* movies in the top US box office numbers).

We added a 0.5-second fade in and out to every 30-second music clip using *ffmpeg*. The decision was made not to normalise the clips across the stimulus set or within genres; stimuli were collected from Spotify which has volume limits on uploads so the volume would already be set within a safe boundary, and volume dynamics are an important, defining feature of different genres (Kirchberger & Russo, 2016).

REFERENCES

- Kirchberger, M., & Russo, F. A. (2016). Dynamic range across music genres and the perception of dynamic compression in hearing-impaired listeners. *Trends in Hearing*, 20, 2331216516630549.
- Standard Repertoire (2021). The Top 25 Jazz Standards. <https://standardrepertoire.com/pages/the-top-25-jazz-standards.html> (accessed Feb 4th 2024).
- Statista (2024). Preferred radio content by genre in the UK 2023. <https://www.statista.com/forecasts/997920/preferred-radio-content-by-genre-in-the-uk> (accessed October 2023).
- Statista (2024b). Streamed music consumption in the U.S. by genre 2021. <https://www.statista.com/statistics/475667/streamed-music-consumption-genre-usa/> (accessed October 2023).