

THE ANCHOR MODEL OF MUSICAL CULTURE

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ABSTRACT

In a recent cross-cultural study with participants from an autochthonous African population (Mafa) and Western participants, it was shown that the recognition of several emotional expressions (happy, sad, fearful) in music are likely to be music universals [1]. The Mafa listeners (who were naïve to the Western music) were quite successful at recognizing the emotional expressions in the Western music, although their own music seems not to emphasize, or even comprise this musical feature. Here I propose a model, which is aimed at illustrating how different human musical cultures intersect and “anchor” in a set of musical features that are universally perceived, while also displaying culturally acquired specifics (see Figure 2), that accounts for the Mafa results. It explains also why musical universals cannot simply be determined by specifying the common denominator between the musical features of all cultures, which may actually not exist.

1. INTRODUCTION

It is highly likely that the creation and experience of music is in part furthered by an underlying universal physiology of the human being, because it seems plausible that some form of music has been invented by all human cultures, past and present [2]. In order to identify the physiological mechanisms at work it is useful to determine which musical features are recognized universally. However, in order to investigate musical universals, it is crucial to have a concept of what music may be. This is challenging, because the design features of music are variable and various [3], and the contexts where music is involved differ to a great extent between cultures [4]. Consequently, it is not trivial to agree on what music is. For example many “native” cultures do not even have a term for music at all [1], because it is an integral part of various rituals. If one tried to name a common denominator between what might be considered music in all cultures of the earth, there might be nothing at all besides possibly that it relates to some form of organized sound. However, this does not imply that there are no musical universals.

The investigation of musical universals with Western music stimuli requires participants who are completely naïve to Western music. Even individuals of non-Western cultures who have only listened to Western music rarely, and perhaps without paying explicit attention to the music (e.g. while listening to the radio, or watching a movie) do not qualify as participants because musical knowledge is also acquired implicitly, and thus shaped even through unattended listening experience [5]. However, since the efforts of early pioneers such as Erich M. von Hornbostel at the beginning of the last century, it has rarely been attempted to investigate human individuals who were completely naïve to Western music. Unfortunately, opportunities for intercultural comparisons between individuals exposed to completely incongruent music cultures are becoming increasingly rare, due to globalization. Western music culture mainly spreads with electricity supply (and thus the possibility to operate radios) and Christianization (through Western Christian song).

Evidence from intercultural and developmental studies in humans suggests that relatively basic musical features such as relative pitch, octave generalization, intervals with simple ratios, and tonality are possibly music universals (for a review see [6]). In a recent cross-cultural study with participants from a native African population (Mafa) and Western participants, Fritz et al. [1] showed the intercultural ability to recognize three basic emotions (happy, sad, scary/fearful) expressed in Western music (Figure 1). This indicates that even the supposedly complex musical feature emotional expression can be recognized universally for several emotional expressions in Western music. This is especially interesting for the model proposed here (Figure 2), because the musical expression of a variety of emotions like fearfulness and sadness seems not to be intended by the Mafa, and consequently they seemed to have recognized a putatively universal musical feature, which is not part of their own musical repertoire (their music cultural form).

Therefore, the study by Fritz et al. [1] is described here in greater detail. Both participant groups, the investigated Mafa and the Germans were naïve to the music of the respective other culture. The Mafa are one of approximately 250 ethnic groups that make up the population of Cameroon. They are located in the Extreme North, in the Mandara mountain range, where the more remote Mafa settlements do not have electrical supply, and are still inhabited by many individuals who pursue a traditional lifestyle, some of whom have never been exposed to Western music.

There have been previous investigations of the recognition of emotional expressions conveyed by the music of other cultures, but since the participants were not completely naïve to Western music, these studies allowed conclusions about cultural specifics rather than music universals [7-9]. The study by Fritz et al. was designed to examine the recognition of three basic emotions as expressed by Western music (happy, sad, scary/fearful), using music pieces that had been used previously to investigate the recognition of these emotions in brain damaged patients [10-11]. Stimuli were computer-generated piano music excerpts with durations between 9-15 seconds, which were specifically designed to express the emotions happy, sad, and scary/fearful according to Western conventions such that they varied with respect to mode, tempo, pitch range, tone density and rhythmic regularity (download examples at <http://www.sendspace.com/file/0b17qa>). During the experiment the music stimuli were presented from a CD player and only audible to the participant over headphones to avoid response biases through the experimenter. The participants had to indicate which facial expression from the Ekman archive (happy, sad, scary) [12] fit best with the expression of each music excerpt (forced choice).

The results showed that the Mafa recognized happy, sad and scary/fearful Western musical excerpts above chance (Figure 1), indicating that the expression of these basic emotions in Western music can be recognized universally.

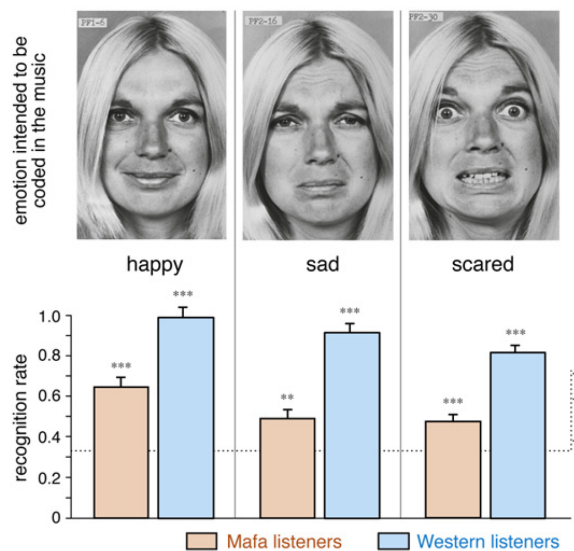


Figure 1. The figure shows the mean performance (M) in percent for the recognition of each emotional expression from the Ekman archive (above) in Western music excerpts, chance level: 1/3 (***) $p < 0.001$, ** $p < 0.05$), standard error (SEM), t-values (df = 20 for the Mafa listeners and df = 19 for the Western listeners), figure from Fritz et al. [1].

The expression of emotions is a basic feature of Western music, and the capacity of music to convey emotional expressions is often regarded as a prerequisite to its appreciation in Western cultures. This is not necessarily the case in non-Western music cultures, many of which do not similarly emphasize emotional expressivity, but may rather appreciate music for qualities such as group coordination in rituals.

Although some of the data presented by Fritz et al. [1] may be interpreted to corroborate the idea of music as a medium to universally mediate emotion, a possible absence of a variety of emotional expressions in Mafa music would rather suggest a different interpretation. If music were in its essence indeed a universal language of emotions, how come Mafa music seems to not express a comparable variety of emotions as occur in Western music? The appropriate answer to this is that although emotional expressions in music are perceived universally, this may not be the principal function of music (as already pointed out by Hanslick in his 1854 essay [13]). Despite the observed universals of emotional expression recognition one should thus be careful to conjure the idea of music as a universal language of emotion, which is partly a legacy of the period of romanticism.

2. THE ANCHOR MODEL OF MUSICAL CULTURE

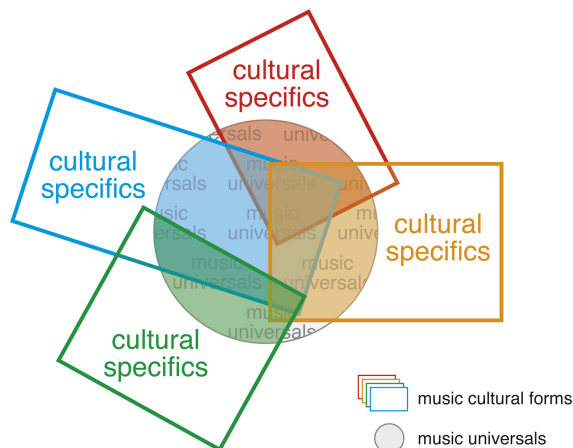


Figure 2. Anchor model of musical culture.

The model (Figure 2) suggests that all music cultures contain both music universals and cultural specifics. The more two cultures share a music cultural influence, the more their musical codes (music cultural forms) overlap. It suggests that despite a universally shared understanding of a partly common code (music universals) in which all music cultures “anchor”, no music culture has implemented the whole set of universal musical features in its musical repertoire. Furthermore it shows how the musical repertoires of two cultures can be “anchored” in the set of music universals but do not overlap (the red and green boxes).

The question arises, why the Mafa music does not include a variety of emotional expressions like for example sadness and scaryness/fearfulness if the Mafa were capable of recognizing these expressions in the Western music. The answer may be that the recognition of emotional expression from music is not exclusively a musical capability, but instead a capability that evolved as an adaptation to a different challenge, and was then co-opted for music. While emotional expression may be a sub-category of the musical design feature a-referential expressiveness [3, 14], this does not entail that the capability for emotional expression processing is an exclusively “musical” capability. Like the capability for the production and perception of many other design features of music, emotional expression processing is probably a spin-off of one or several more general-purpose mechanisms. It has even been argued that all the so-called musical capabilities are such spin-offs, and that human music may thus hardly be regarded a special evolutionary adaptation [6].

The universal capability to identify emotional expressions in Western music is presumably at least partly due to the universal capability to recognize

nonverbal patterns of emotional expressiveness [15] such as emotional prosody. Emotional prosody has been observed to be mimicked by Western music as a means of emotional expression [16], and other findings indicate that emotional prosody can be recognized universally [17]. This interpretation is consistent with the notion that similar emotion-specific acoustic cues are used to communicate emotion in both speech and music [18-19].

The discussed findings thus demonstrate that music as a means of emotional communicative expression, although probably universal, had to be culturally discovered, and probably transferred from a more general-purpose means of communicative expression. Emotional expression is clearly not a prerequisite for music. Music cultures may have discovered and developed emotional expression in music at some point, but this does not necessarily have to be the case. In Western music, emotional expression is possibly such a prominent feature, because Western music is the result of a very long cultural integration process, a common denominator between the many musical cultures. This probably promotes the cultural transmission of musical features that can universally be understood. In more local cultures such as the traditional Mafa culture, it is not necessary that the music is understood by people from different cultural backgrounds, because the musical rituals are passed on to the following generation along with a culturally learned semantic imbuement.

The Anchor Model of Musical Culture (Figure 2) provides a theoretical framework to discuss music cultural intersection, and hopefully, to further our understanding of what musical universals are, and how they relate to musical culture.

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