

Fade-out in popular music and the Pulse Continuity Illusion

Reinhard Kopiez,^{*1} Friedrich Platz,^{*2} Anna Wolf^{*3}

^{*}Hanover University of Music, Drama, and Media, Hanover Music Lab, Germany

¹reinhard.kopiez@hmtm-hannover.de, ²friedrich.platz@hmtm-hannover.de, ³anna.wolf@hmtm-hannover.de

ABSTRACT

Background

In popular music, “fading” as a gradual increase or decrease in the level of an audio signal is a commonly used technique for the beginning or ending of a recording (Fade, 2011). In music history, Holst's composition *Neptune* (from the orchestral suite *The Planets*) seems to be the first piece to have a fade-out ending. In popular music, the primary reason for this type of ending was the limited recording time of 3 min. for a 45 rpm record. In subsequent years, in some musical styles (e.g., disco) this technique was applied to every piece (Olhsson, 2011). However, manuals of audio engineering only describe the technical procedure of fade-out. The psychological effect of the fade-out remains speculative.

Aims

The hitherto intuitive hypotheses on the psychological effect of fade-out, such as the “indefinite closure” (Huron, 2006, p. 318) or “the song goes on forever” (Whynot, 2011) will be tested by experimental means. The continuity hypothesis was operationalised by the duration of continued tap along after the end of the piece. We predict a prolonged tap along behaviour in the fade-out condition (directional hypothesis: $\mu_{\text{Tap along_fade-out}} > \mu_{\text{Tap along_cold end}}$).

Method

We used two versions of a pop song (“Wag das Unmögliche” [Dare the impossible], text and music by Connie Schwarz (Hamburg), ballad style, duration: 2 min 40 s) from the current production of the Pop Institute at the Hanover University of Music, Drama, and Media. Version one exhibited an arranged end (cold end) and version two a fade-out end. A two groups, between subjects design ($N = 54$, music undergraduates) was used in a lab setting. The Sentograph (Mark IV) developed by Manfred Clynes served as an interface for the measurement of the dependent variable “musical entrainment”. Subjects received the instruction to “feel the groove of the music and continue until you do not feel any more entrainment”. Musical background was controlled by the OMSI scale (Ollen, 2006).

Results

Comparison of mean continuation duration after song ending revealed a significant difference between groups: Compared with the cold end group, subjects in the fade-out group continued pulsation about 3 s longer ($t(52) = 2.87$, $p = .007$, Cohen's $d = 0.90$).

Conclusions

Our study revealed a clear psychological effect of fade-out in music which fits into current theories of musical

expectation (Huron, 2006). We call this effect the “Pulse Continuity Illusion” (PCI, say “Picky”).

Keywords

Popular music - mixing - music production.

REFERENCES

- Fade (audio engineering). (n.d.). In Wikipedia. Retrieved November 25, 2011, from <http://en.wikipedia.org/wiki/>
- Huron, D. (2006). *Sweet anticipation. Music and the psychology of expectation*. Cambridge, MA: MIT Press.
- Olhsson, B. (2011, November 25). When did songs stop fading? [Msg 4]. Message posted to <http://prorecordingworkshop.lefora.com/2011/07/13/when-did-songs-stop-fading/>
- Ollen, J. E. (2006). A criterion-related validity test of selected indicators of music sophistication using expert ratings (Doctoral dissertation, Ohio State University, 2006).
- Whynot, J. (2011, November 25). When did songs stop fading? [Msg 14]. Message posted to <http://prorecordingworkshop.lefora.com/2011/07/13/when-did-songs-stop-fading/>