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Beat Precision and Perceived Danceability in Drum Grooves

Francesco Ganis, Sofia Dahl
Aalborg University - Copenhagen, Denmark

Guilherme S. Câmara, Anne Danielsen
University of Oslo - Oslo, Norway

Introduction

Musicians can place the time-position of events with high precision according to personal preference, genre and tempo [1]. Furthermore, the swing ratio is not kept constant, but it is systematically adapted to a global tempo [2].

The aim of this study is to investigate the influence of micro-timing variations in live-played rhythms on:

- perceived danceability
- timing precision



References

- [1] G. S. Câmara, K. Nymoén, O. Lartillot, and A. Danielsen, "Timing Is Everything...Or Is It? Effects of Instructed Timing Style, Reference, and Pattern on Drum Kit Sound in Groove-Based Performance", *Music Perception*, vol. 38, no. 1, pp. 1–26, Sep. 2020
- [2] H. Honing and W. B. de Haas, "Swing Once More: Relating Timing and Tempo in Expert Jazz Drumming," *Music Percept.*, vol. 25, no. 5, pp. 471–476, Jun. 2008

A

B

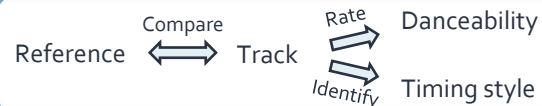


Each drums recording has a **backing track** with bass and guitar.

Methods

Online listening test on Google Forms, 40 participants (M = 28.23 years, SD = 11.80) of which 28 males and 12 females.

Listening test



- 12 audio recordings (2 drummers, 2 patterns, 3 timing styles) in video format
- Randomized order of the listening
- Rating from 1 (not danceable at all) to 5 (very danceable)
- Survey on demographics and musical experience

Discussion

- There is a statistically significant effect of micro-timing variations on perceived danceability.
- On-beat style has been rated with highest danceability.
- Timing style recognition was performed with low rate of correct answers.
- No effect of musical background on correct recognition of timing style.

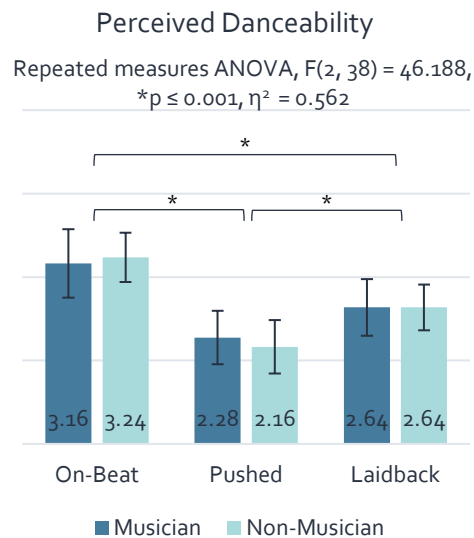
Limitations

Due to constraints of online modality, was not possible to control the environment and conditions in which the survey was taken.

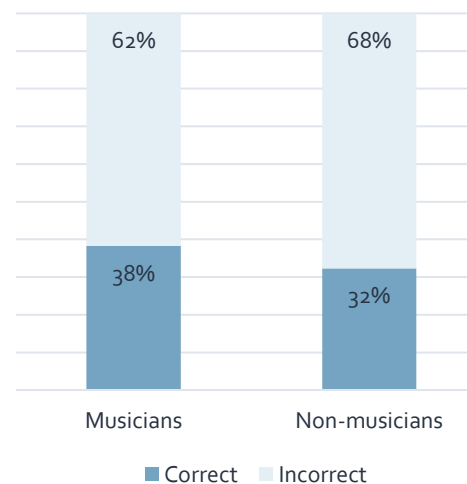
The musical experience was evaluated on a self-report basis.

The backing track could affect the results, but this choice is a trade off between ecological validity and variables control.

Results



Timing Style Recognition



Acknowledgments

Audio recordings collected in TIME project <https://www.uio.no/ritmo/english/projects/time>

Thanks to Prithvi Ravi Kantan for assistance in producing the poster.