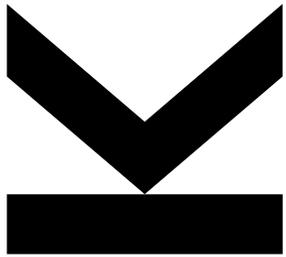


Allowing for equal opportunities for artists in music recommendation



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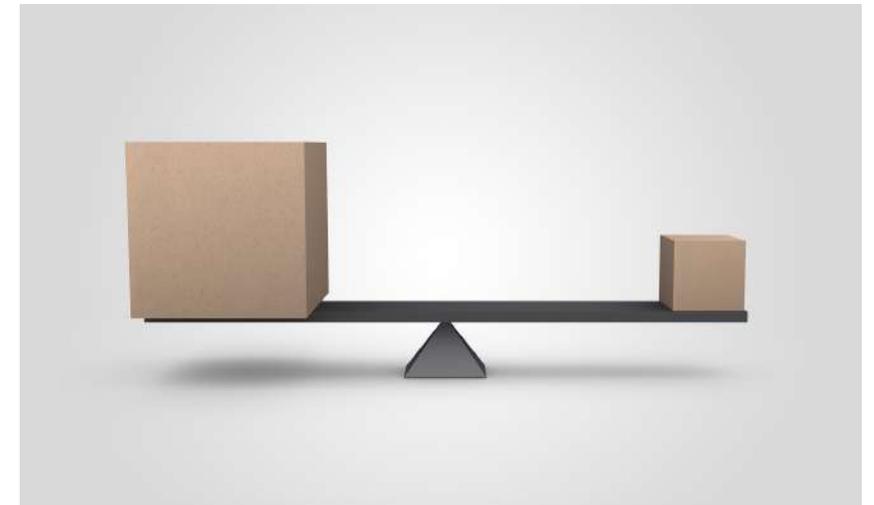
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Institute of
Computational
Perception

ISMIR Workshop on Designing Human-Centric MIR Systems
Delft, The Netherlands, 2 November 2019



Austrian Science Fund (FWF): V579.

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- ▶ what the user likes
- ▶ or what we assume what he/she/they would like...

In music recommendation, it is all about recommending the **right item** to the **right user** at the **right time**.



Do we ever take the artists' perspective?



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▶ what the user likes
▶ or what we assume what he/she/they would like...

Taking a human-centric perspective...



includes considering the artist

Taking a human-centric perspective...



I put the artist in the loop

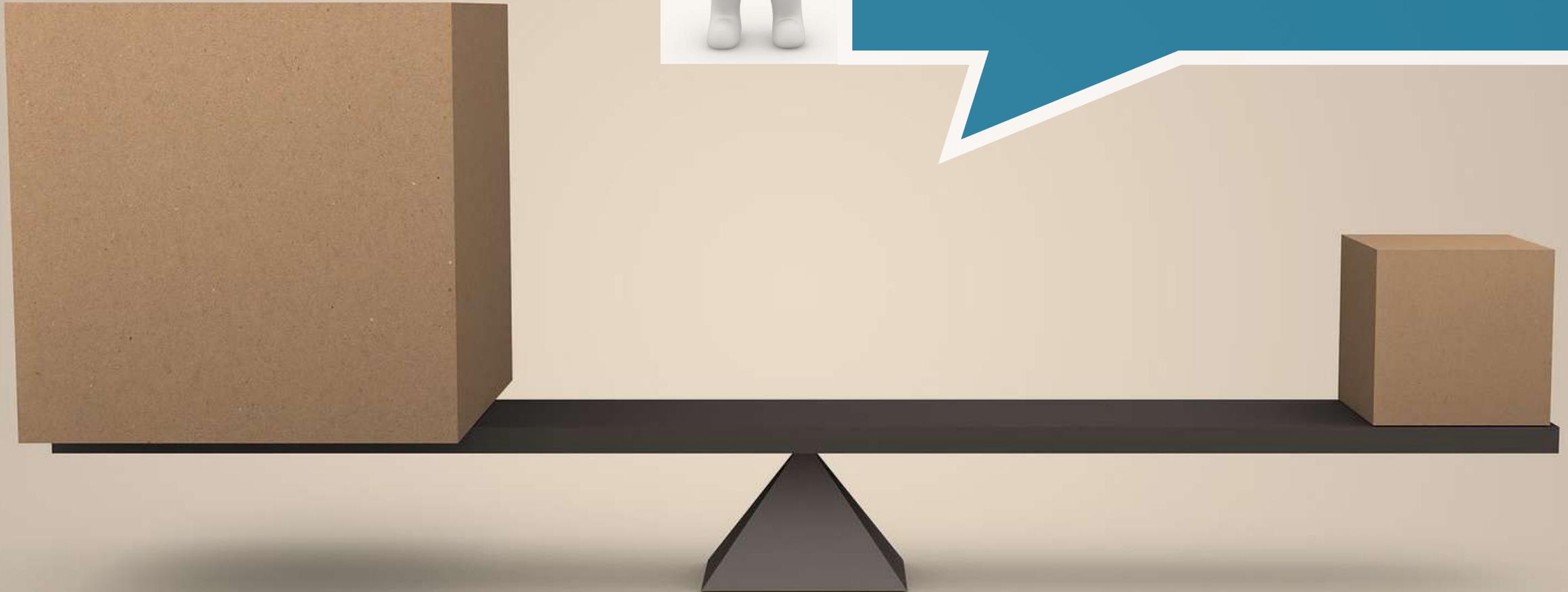
Taking a human-centric perspective...



I put the artist in the loop



**I advocate for
reasonable opportunities
for all kind of artists.**

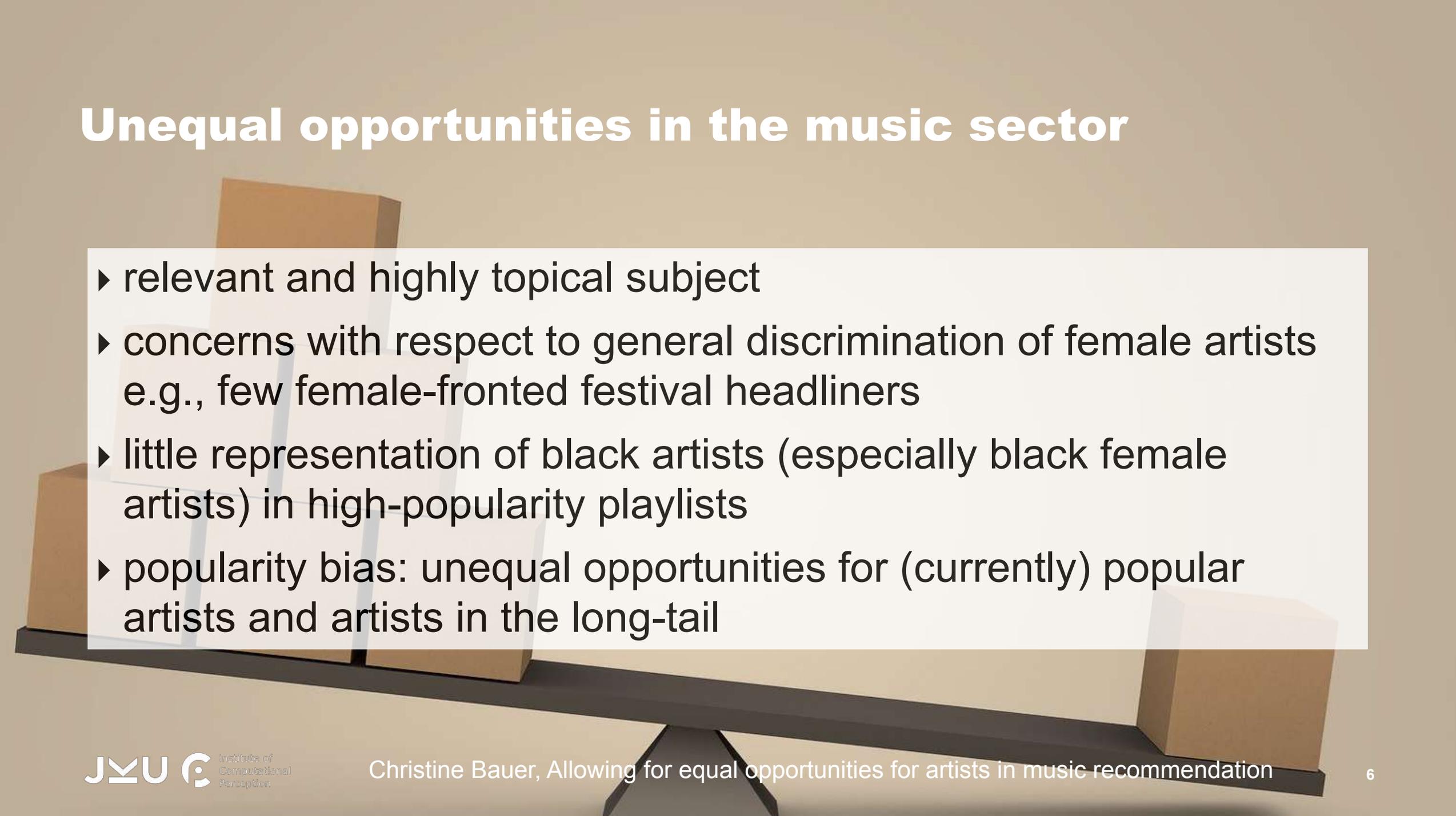




**I advocate for
reasonable opportunities
for all kind of artists.**

**Naturally, this includes
music recommender systems.**

Unequal opportunities in the music sector



- ▶ relevant and highly topical subject
- ▶ concerns with respect to general discrimination of female artists e.g., few female-fronted festival headliners
- ▶ little representation of black artists (especially black female artists) in high-popularity playlists
- ▶ popularity bias: unequal opportunities for (currently) popular artists and artists in the long-tail

The major problem may lie far beneath online music platforms or the music sector at large. Yet...

The vast possibilities of music information retrieval and recommendation may contribute to reinforce or mitigate this problem.

- ▶ reinforce the promotion of the diversity, inclusion, and equity
 - ▶ (intentionally or unintentionally) create or reinforce unreasonable imbalances
- e.g., popularity bias:
does it amplify inequality in the short head of popularity distribution?

My position



We need to understand the biases and inequalities in current systems and underlying data...

...because it is the essential basis to design approaches that provide reasonable opportunities.

Thus, investigate the various reasons that hinder equal opportunity in music recommendation.

The complexity of bias and inequalities



- ▶ some aspects draw attention in research and on the media
e.g., filter bubble and popularity bias



- ▶ other biases are not addressed or may even not have been identified yet

Fundamental research question #1

How is diversity in terms of, for example, age, disability, gender, ethnic origin, religion, or sexual orientation of artists represented in the long tail of the popularity distribution?

How is diversity represented in the short head of popular artists?

How does the diversity in the long tail and the short head relate to each other, and to the entire population?

Fundamental research question #2

How does the popularity of music items reflect inherent user taste?

How is the popularity of music items affected by what is offered on online music platforms, on playlist, in recommendations, in advertising, etc.?

More concrete research question

What is the influence of using timbre of the singing voice for music recommendation on the artist gender distribution in recommended items?

If recommendations allow for little diversity in timbre, items will likely be sung by same-gender singers.

Goals and ToDo's



- ▶ develop a deep understanding of the biases and inequalities
 - ☞ investigate the various facets that hinder equal opportunity in music recommendation
- ▶ essential basis for designing music recommenders that provide reasonable opportunities for all kind of artists alike

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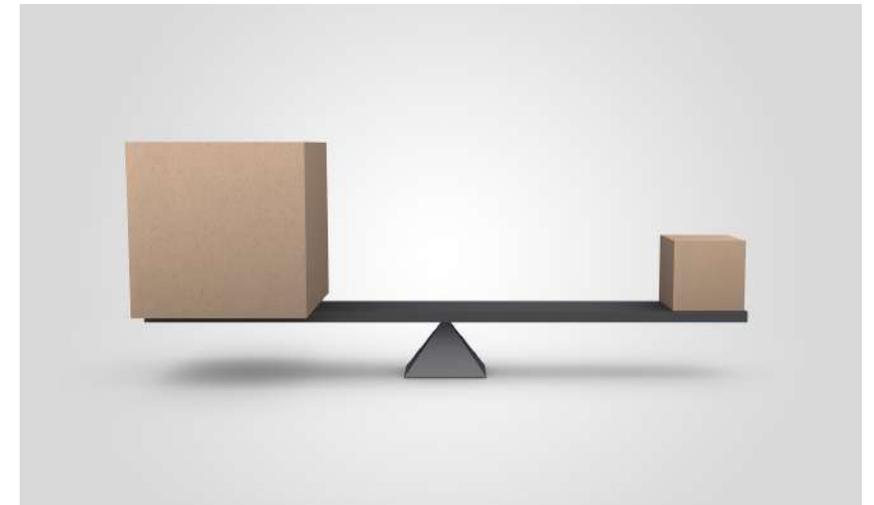
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