



FAKULTÄT FÜR  
INFORMATIK



Data & Knowledge Engineering Group

# A Survey on the Acceptance of Listening Context Logging for MIR Applications

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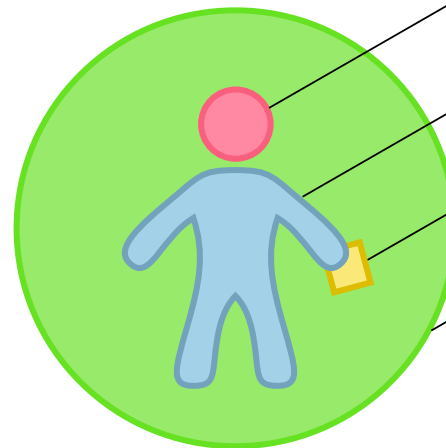
- Motivation: What? Why? &How?
- Survey Design & Context
- Survey Results
- Correlations?
- Conclusions

# Motivation: What?

- context: [Dey 2001]
  - any information that can be used to characterize the situation of a person, place or object of consideration

- four types of primary context [Dey & Abowd 2000]:

- location
- identity
- time
- activity



Psychology

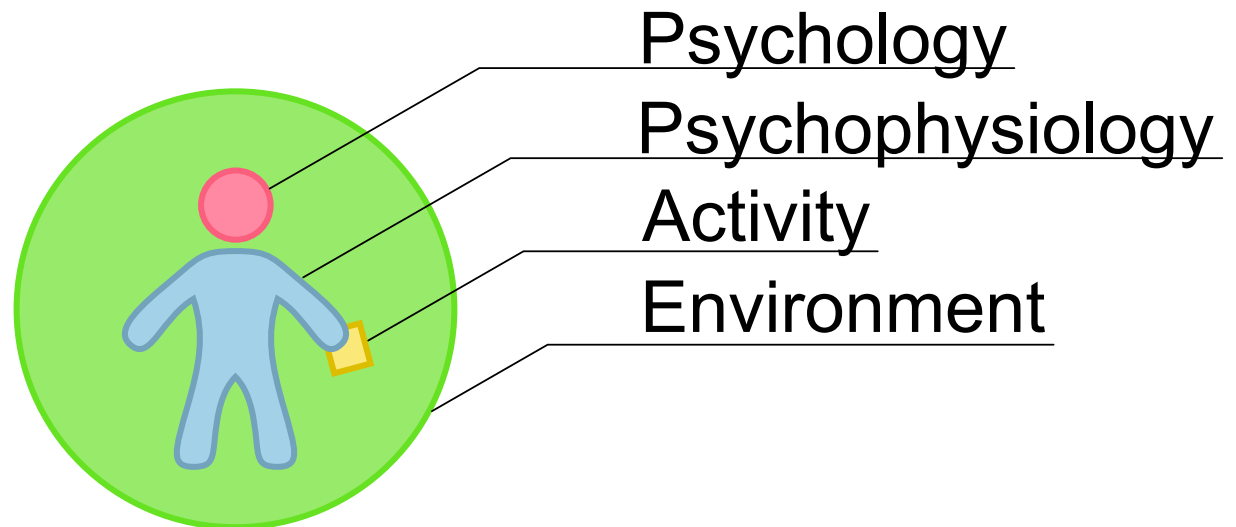
Psychophysiology

Activity

Environment

# Motivation: Why?

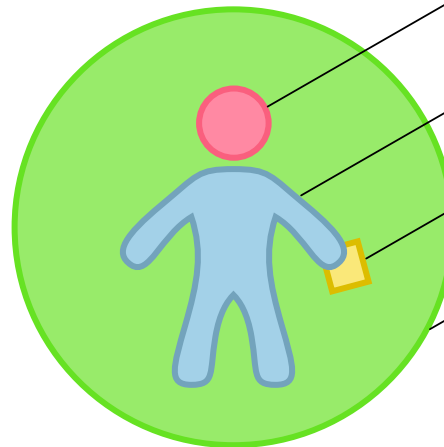
- valuable information for building personalized and user-adaptive MIR applications
- e.g. learn personalized genres like “music I like when I do programming”



# Motivation: How?

## Possibilities for Automatic Context Logging:

- music metadata
- ambient noise
- GPS position
- keyboard & mouse events per minute
- currently running applications
- facial expression
- bio-information
- ambient light
- status



Psychology

Psychophysiology

Activity

Environment

How much context is too much?  
or  
Where do we encounter privacy issues?

- 8 questions
- 4 groups:
  1. demographic information
    - gender, age & country of residence
  2. general relation to music
  3. use of (web-) applications that collect, access and expose to some extent private data of their users
  4. acceptance of logging information about the listening context
  
- paper questionnaire at CeBIT 2009
  - in German only, 156 participants
- online survey from March till June 2009
  - in English and German, 305 participants

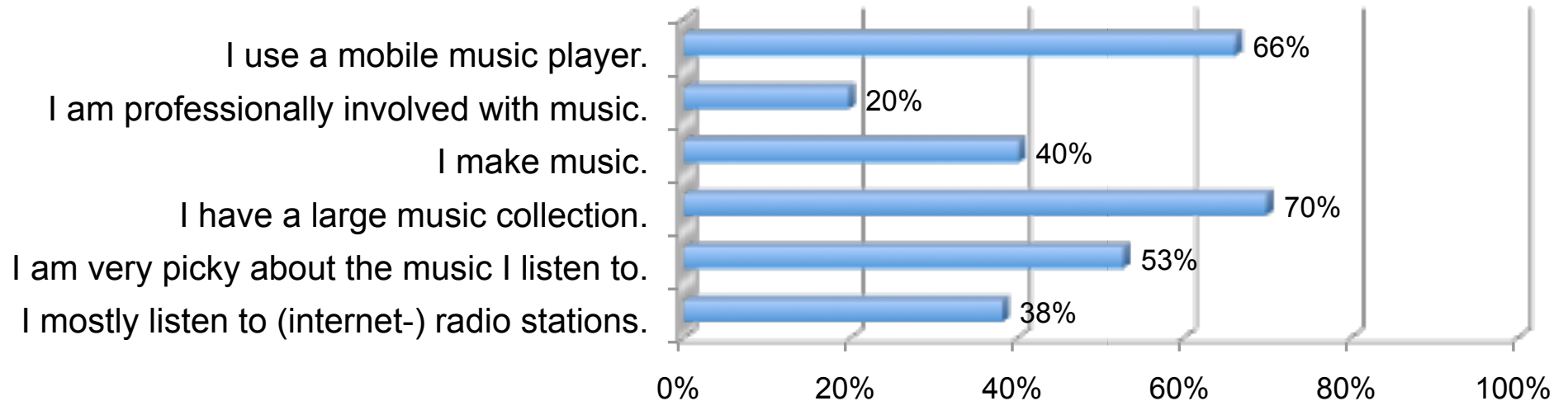
# Demographic Information

Country	Number of Participants	Percentage
Germany	323	70.07%
USA	24	5.21%
Austria	14	3.04%
France	10	2.17%
Turkey	7	1.52%
Switzerland	6	1.30%
Spain	5	1.08%

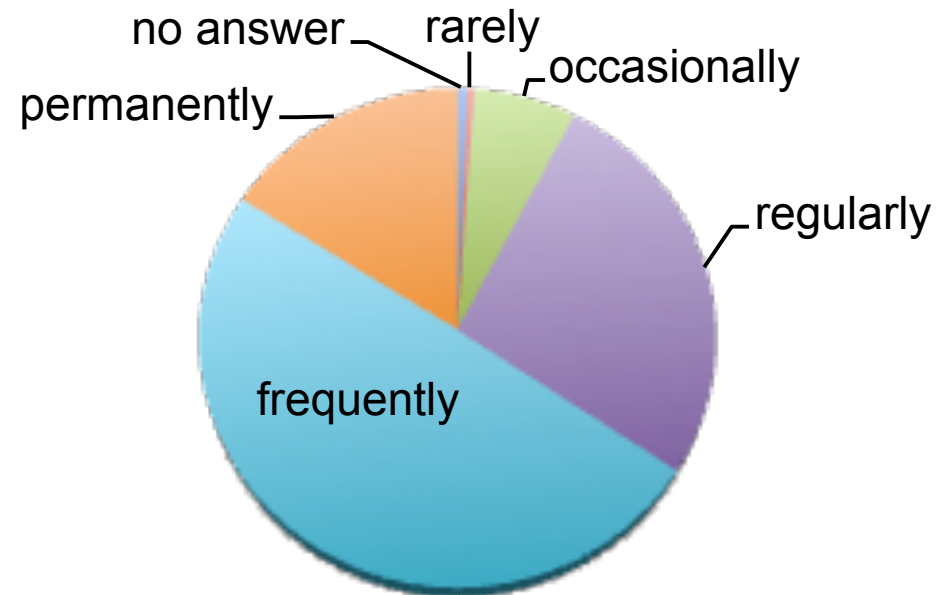
(countries with at least 5 participants)

# General Relation to Music

- Please select **all** statements applicable for you!



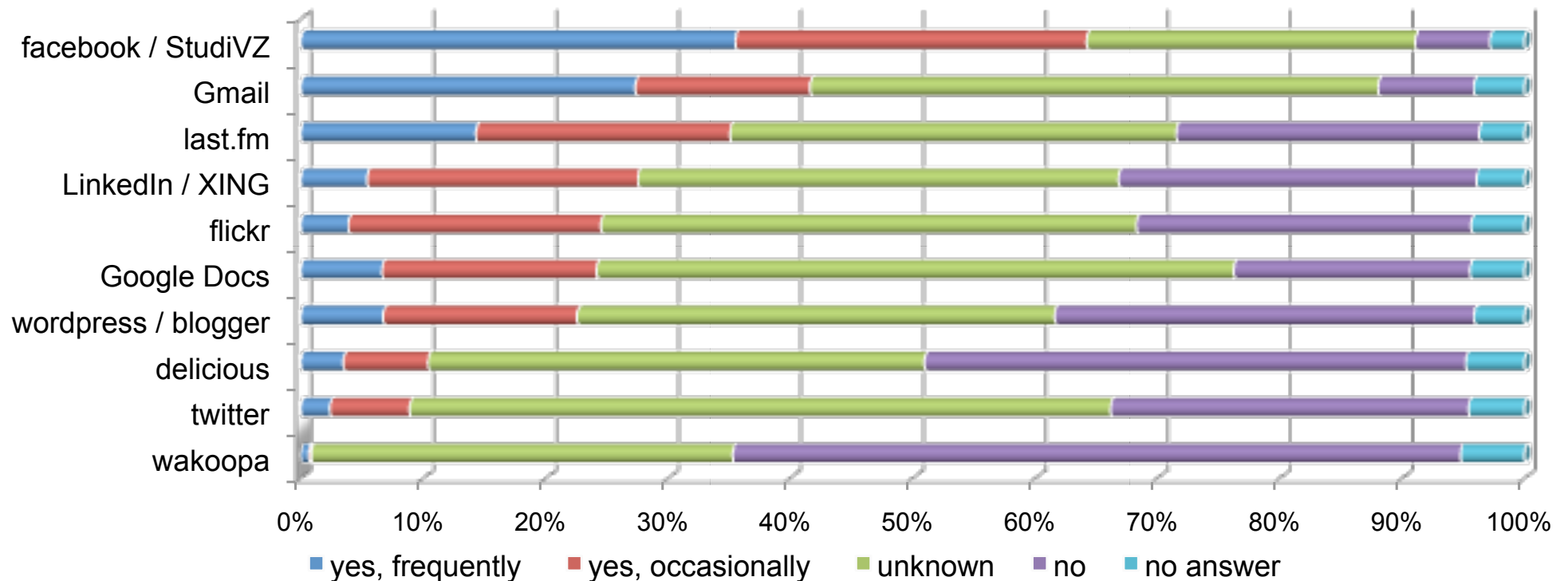
- How frequently do you listen to music?



# Use of (Web-) Applications...

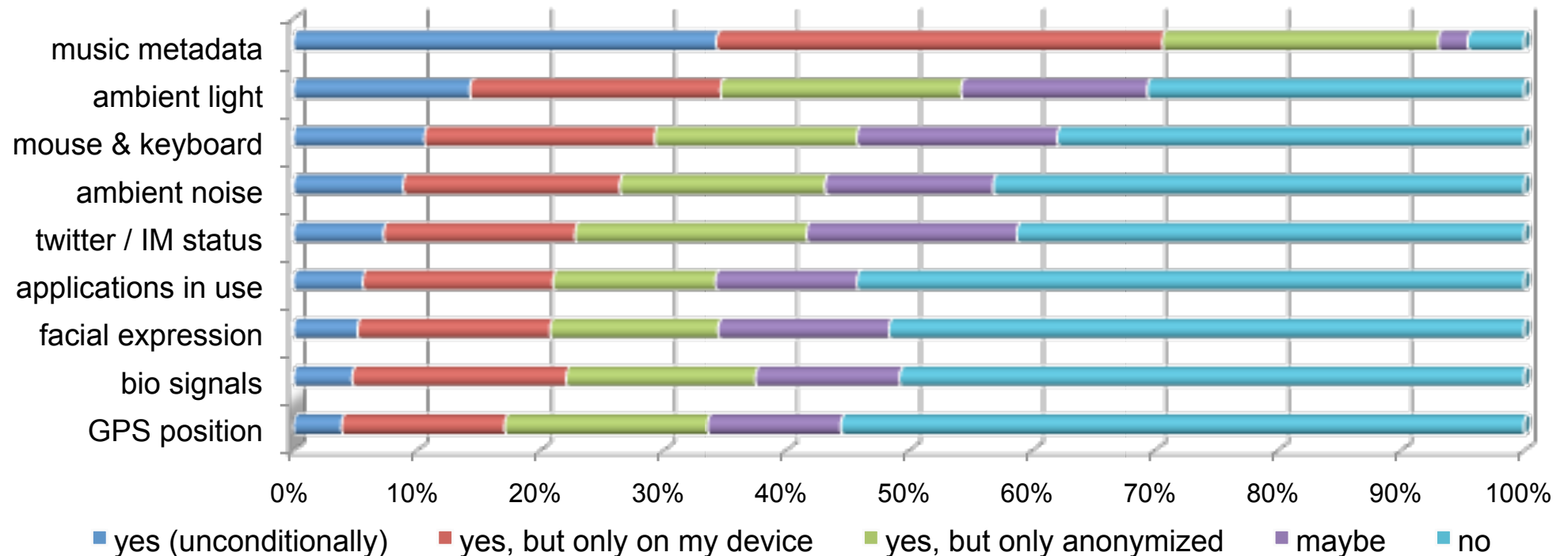
... that collect, access and expose to some extent private data of their users

- *Do you use the following (or comparable) applications?*



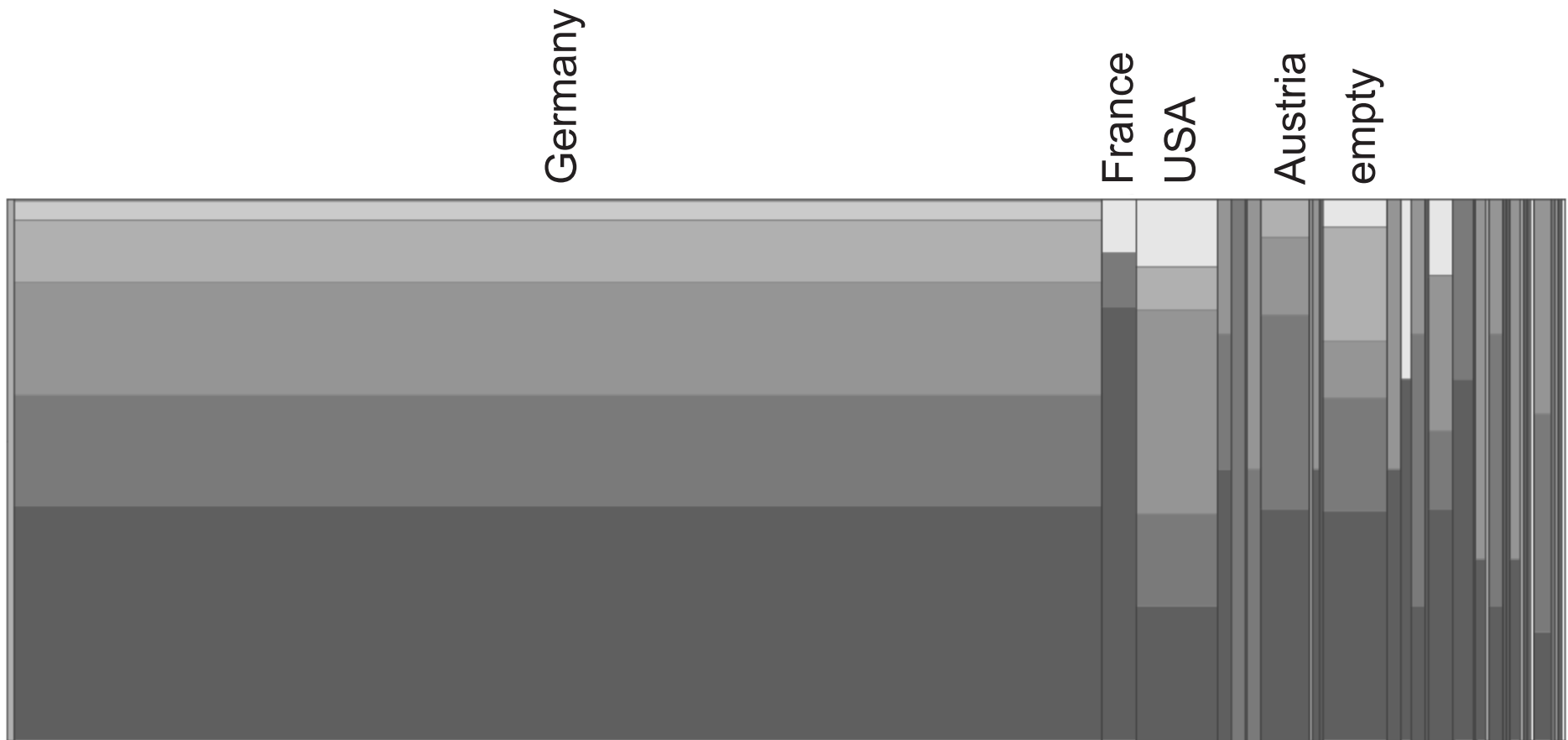
# Acceptance of Listening Context Logging

- *Would you allow your music player (as software or as a self-contained device) to log the following information in order to enable it to learn personalized genres for sorting your music collection?*



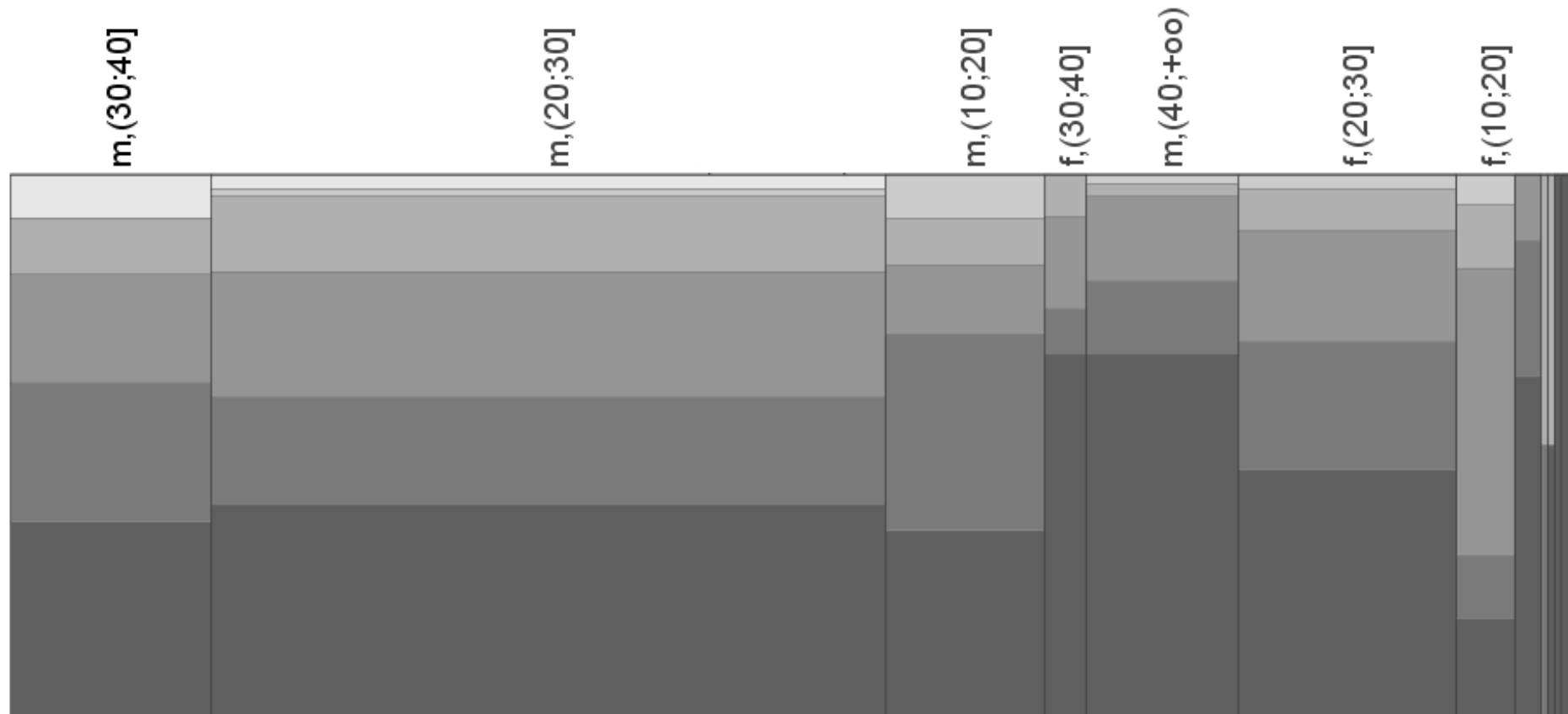
- conversion of answers for different logging options into numerical score:
  - unconditional acceptance = 2
  - conditional acceptance = 1
  - maybe = 0.5
  - no = 0
- sum of scores for different logging options:
  - values between 0 and 18
- binning into 6 equidistant groups as indicators for general acceptance

# Looking for Correlations: Country



- USA : considerable fewer reservations against collecting context information

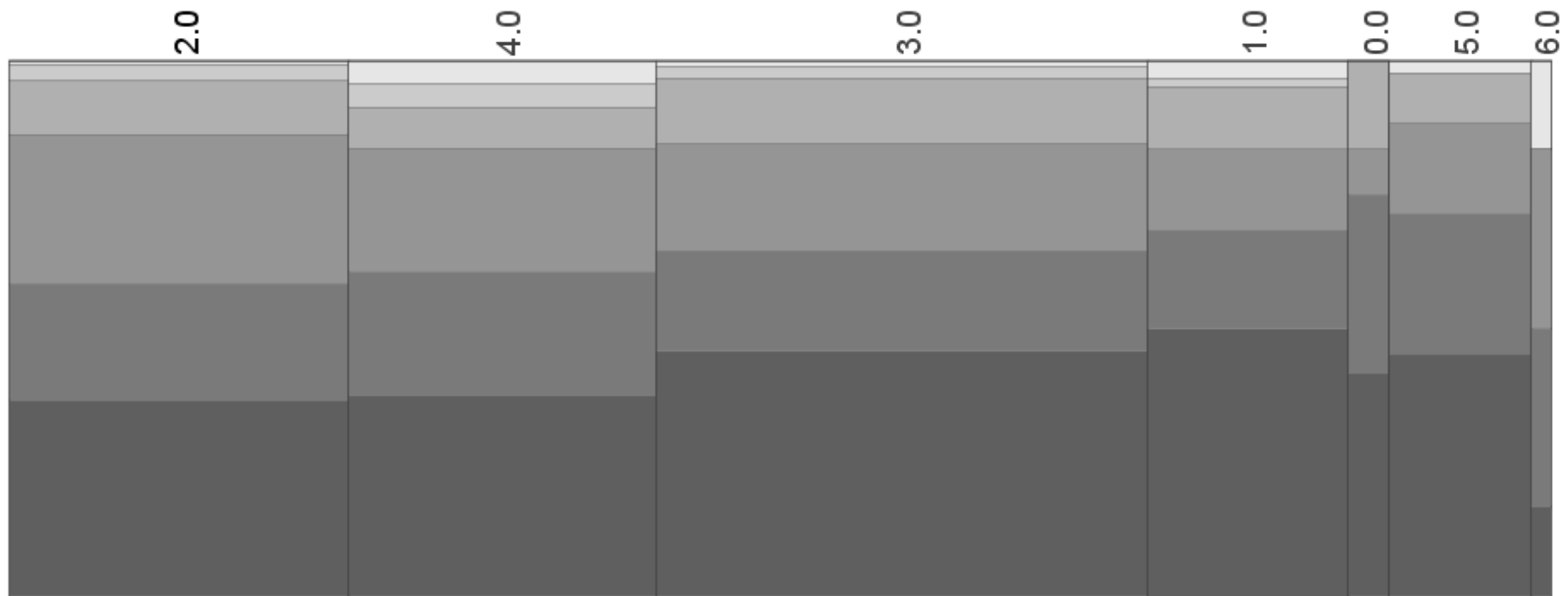
# Looking for Correlations: Gender & Age



- majority: male persons between 20 and 30
- < 20: most drastic difference in distribution by gender
- < 20: surprisingly reluctant

# Looking for Correlations: Relation to Music

(number of statements chosen)



- no significantly differing subgroups  
(neither for the aggregated affinity to music nor for the individual relations)

# Looking for Correlations: Applications

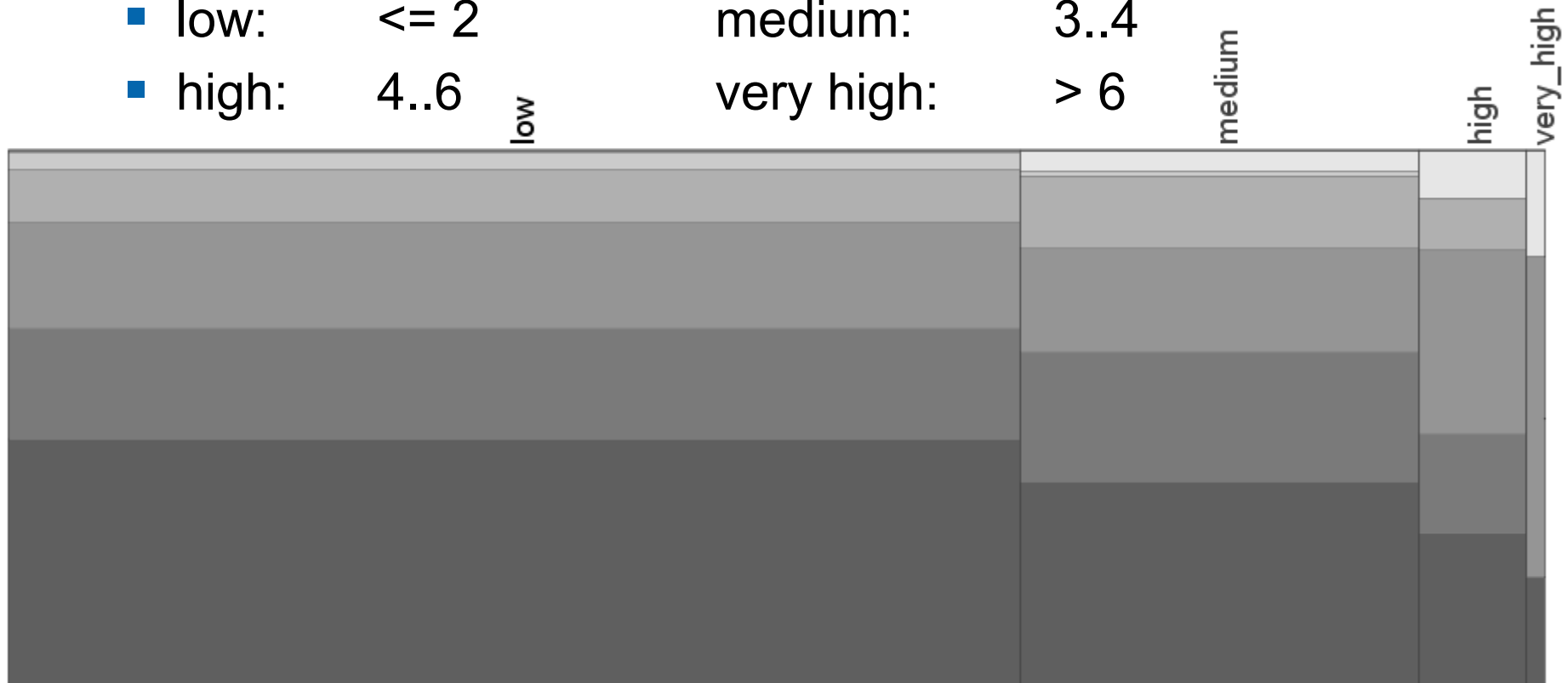
- values aggregated (number of applications used):

- low:  $\leq 2$

- medium: 3..4

- high: 4..6

- very high:  $> 6$



- more applications used / involvement in online communities  
→ higher acceptance

# Reasons

- concerns about privacy
- against any kind of data collection
- no logging unless for visible benefit
  - doubts about relevance of collected information
- fear of being patronized by player's "intelligence"
- misuse of information for marketing purposes
- requirement of additional storage and processing power
  - increase of costs for hard- and software
- information leakage through hacking

# Conclusions

- users must be:
  - fully informed about
    - when and
    - what information is logged,
    - where it is stored and
    - who has access to it
  - in full control of
    - the logging process
    - the adaptation of the MIR system

# THANK YOU

## Questions?