

# Free-Hand Gestures for Music Playback

Deriving Gestures with a User-Centred Process

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# Free-hand gestures...



from Minority Report

# 1. Usage context and playback functions

# Understand the situational context

- Find an initial set of functions
- Users' reaction to a probe
- Explorative study
- Semi structured interviews
- Nine participants



# Music listening habits

- Listening situations
- The role of music
- Music players
- Handling patterns



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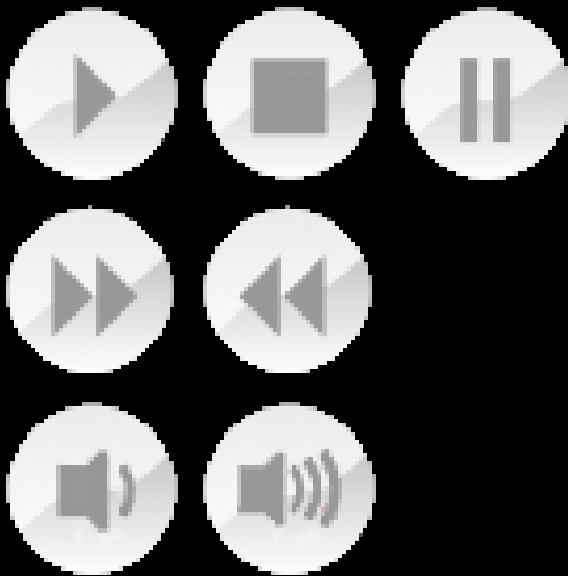
-> Parties





# Comments on the probe

- Advantages/disadvantages
- Desired functionality





## 2. Function validation and participatory gesture design

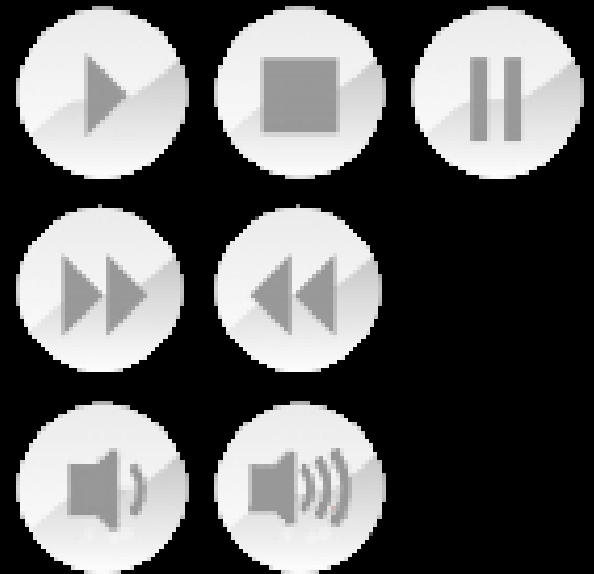
# Participatory design and validation

- Validating initial functions
- Find an initial set of gestures
- Ten participants



# Validating initial functions

- Consistent with first study
- and the related work



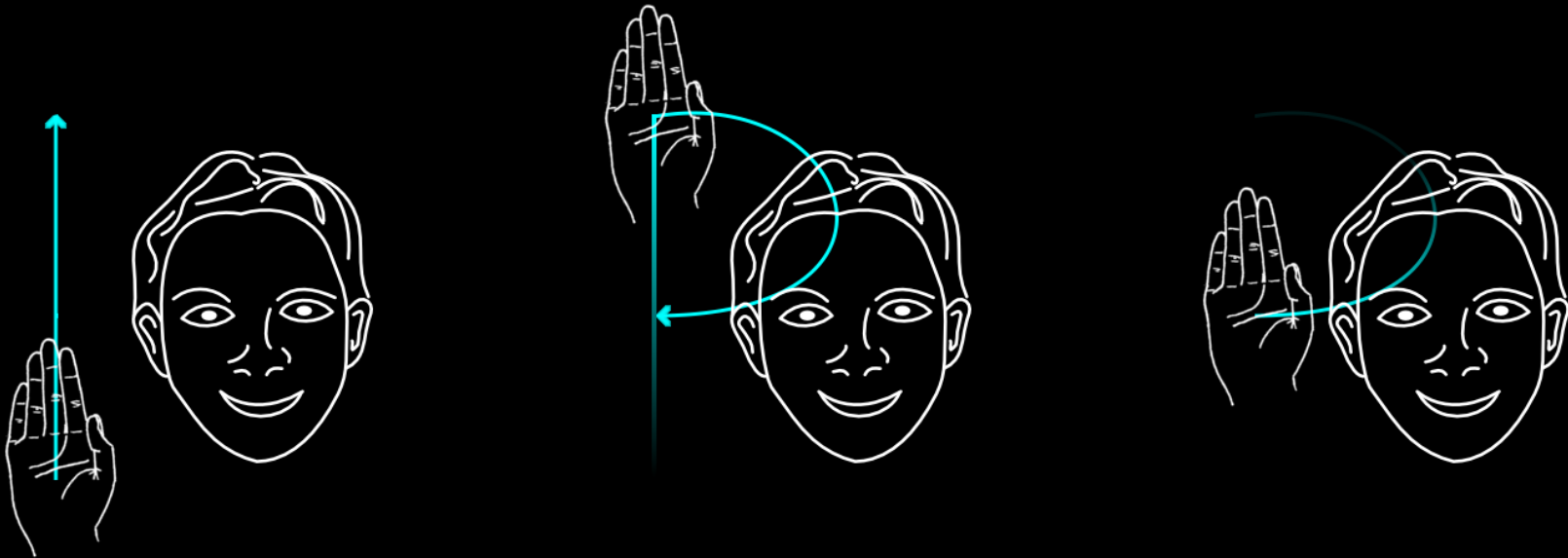
# Inventing gestures

- Jewel case only used for switching albums



# Three classes of gestures

- Dynamic gestures



# Three classes of gestures

- Dynamic gestures
- Static gestures



# Three classes of gestures

- Dynamic gestures
- Static gestures
- Hybrid gestures





### 3. Definition of gesture sets

# Two gesture sets

- Static gestures



# Two gesture sets

- Static gestures
- Dynamic gestures



## 4. Evaluation and refinement

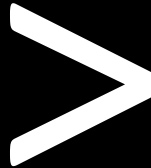
# Controlled experiment

- Comparing the two gesture sets
- Within-subject Design
- 5 Subjective ratings per gesture
- 12 participants
- Wizard-of-Oz



# Results

- No significant differences between the sets
- But significant differences between individual gestures
- e.g.



# Revising the design

- Mixed static/dynamic gesture set
- Revised individual gestures



# Used process

- Functions
  - Participatory design
  - Definition of gestures
  - Evaluation
- 
- Basically the process proposed by Nielsen et al.

# Used a refined process

- Functions <- usage context
- Participatory design
- Definition of gestures
- Evaluation

# Used a refined process

- Functions <- usage context
- Participatory design <- validated functions
- Definition of gestures
- Evaluation

# Used a refined process

- Functions <- usage context
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- Definition of gestures <- different sets
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