

Using body language metrics to analyse the behavioural effects of soundscape quality

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“You Are What You Hear”



Outline

- Introduction: Effects of 3-D Soundscape
 - Outcome Variables
 - Body Language
- Social Territory
 - Filmed behaviour
- Results of Experiment: \pm 3-D Soundscape
- Public Engagement on Soundscape

Outcome Variables: Measuring Effects of Interventions

Gold standard = crime statistics

- Difficult to have control experiments
- Takes time to accumulate
 - Individual events are more rare

Surrogate measures: Tendencies

- Surveys
 - Emotions
- Films
 - Subconscious behaviours

Method: Filmed Scans

Strengths

- Not as invasive as questionnaires
- Larger N numbers

Weaknesses

- May be selective
- Subjective bias of experimenter

What is easy to read with Body Language

Authority

Affiliations

Activity Level

Agreement

Anxiety

How Crowds Reveal Their Mood

- Relationships
 - Especially self-affirmation
 - Territorial Gestures
- Distance & Touching
- Tempo
- Hand Positions and Gestures

Social Territory: A Cognitive Behavioural Construct

- A need or drive
- Trigger cues or contexts
 - Triggers from the environment that initiate or amplify awareness of the drive
- A set of Driven Behaviours
 - Directed toward satisfying the drive
- Achievement signals from the environment that territory has been achieved
- Rewarding Cognitive states and emotions
 - In response to achieving territory

Social Territory: Back Touching

- Leadership in conflict

Example of Territory Construct: Leadership Conflict

Drive	Alpha female needs to feel in charge of territory
Trigger cue	Has her leadership challenged
Driven behaviour	Back touches challenger
Achievement signal	Woman in blue accepts "being guided" by back touch
Rewarding outcome emotion	Alpha female feels empowered and rapidly rushes back into the lead

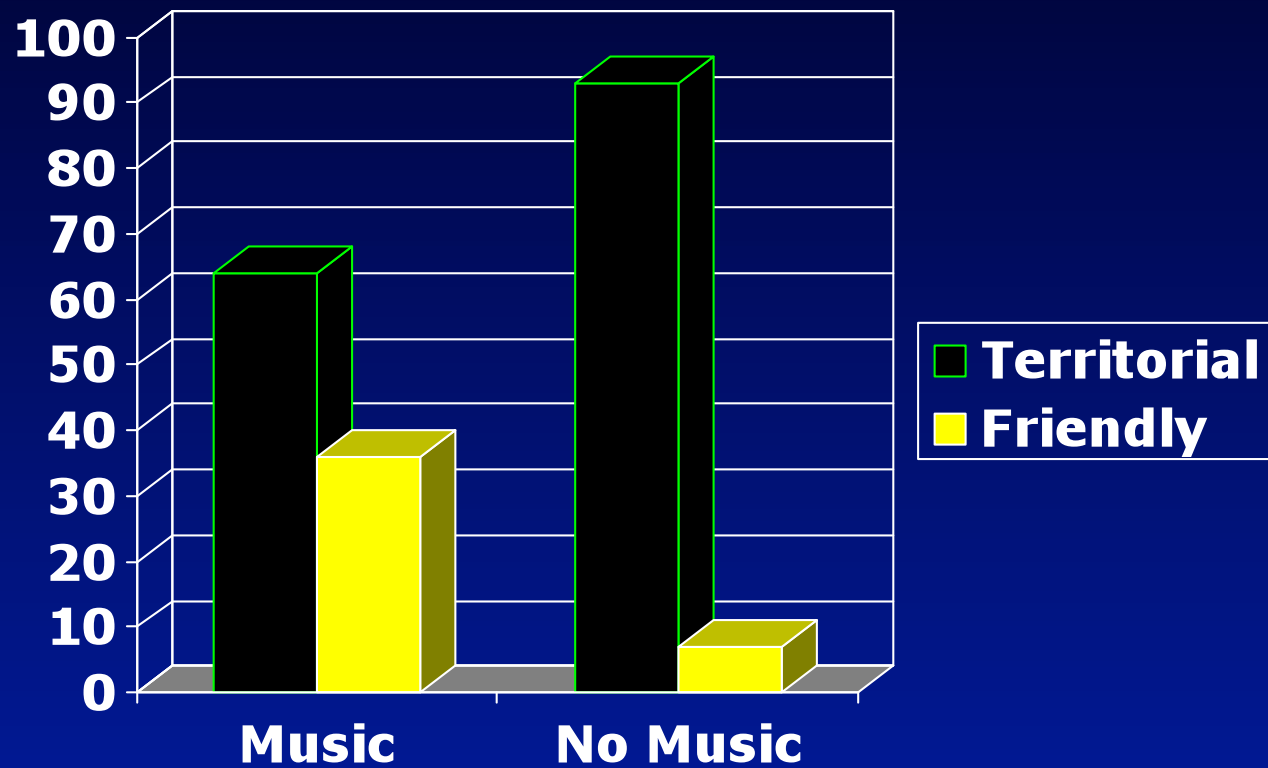
Aggression & Territory

- Showing ownership or possession
 - Grabbing, pulling, pushing
 - Especially another person
 - Showing off
 - Rude finger gestures
- Closed queuing
- Friendly & open
 - Waving
 - Open queuing

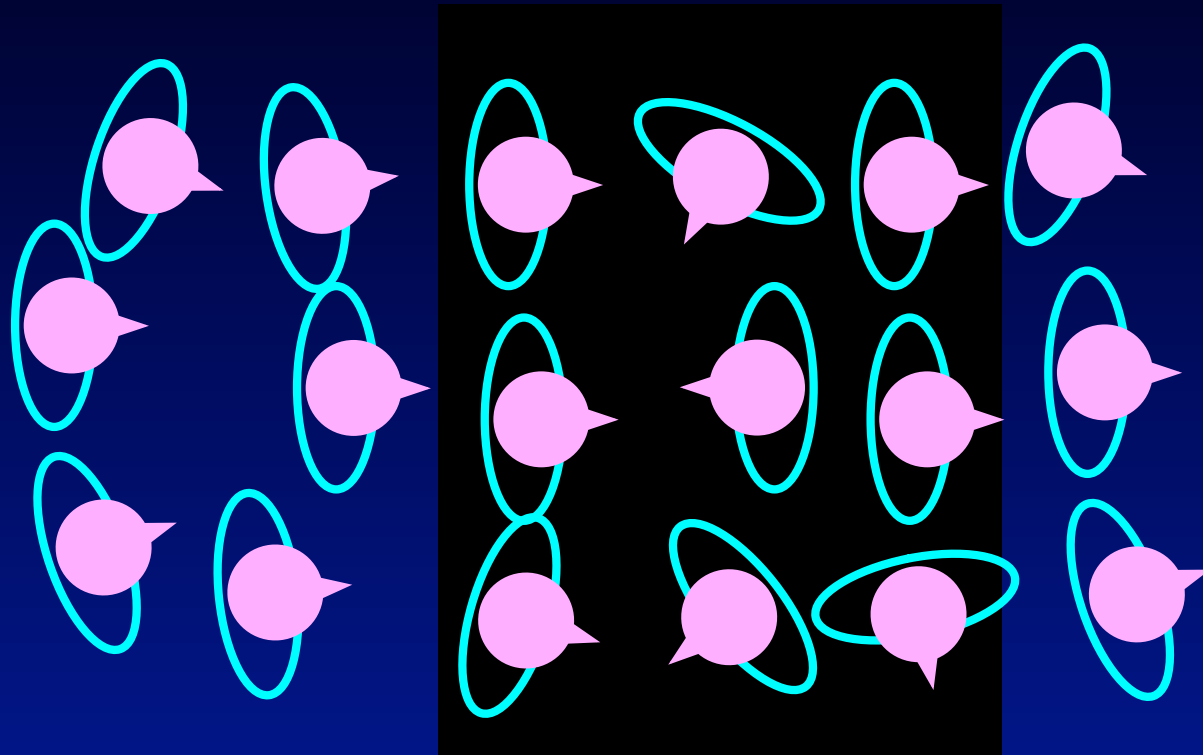
Film: Territory: Look At Me

Film: Non-territorial Behaviour

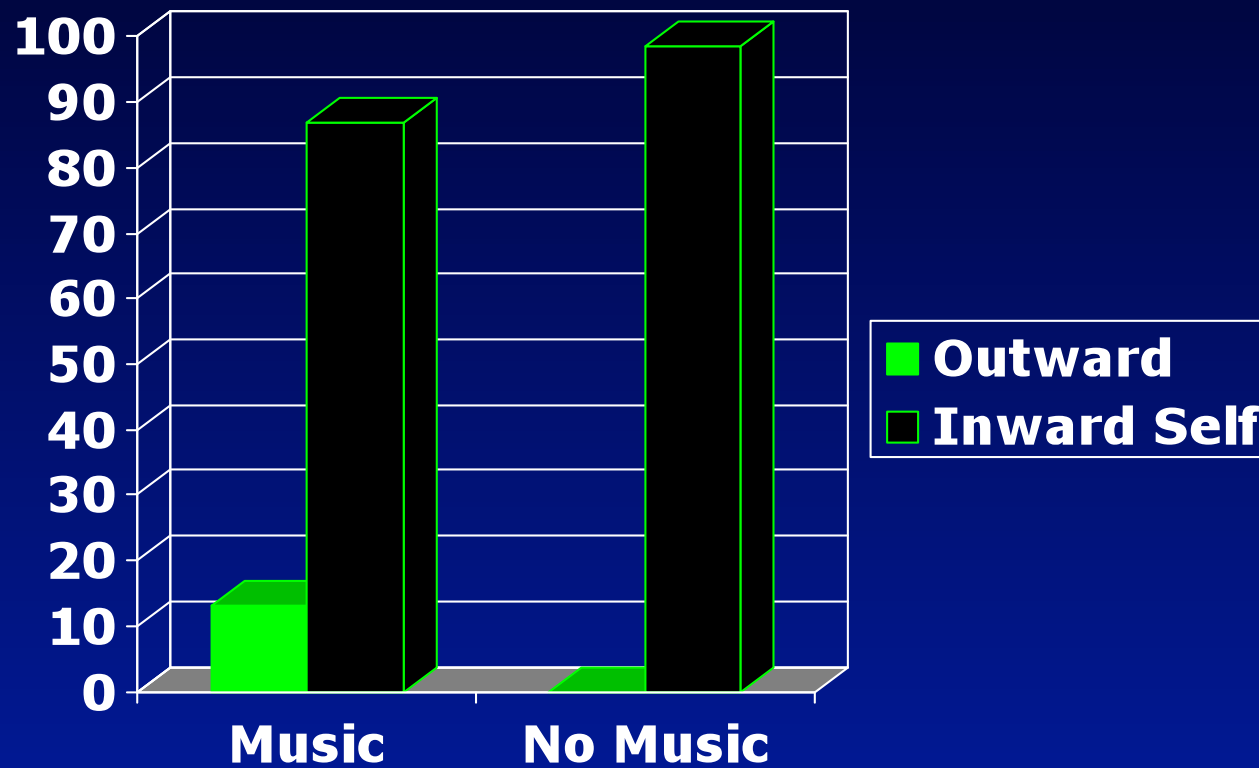
Interacting with the Camera



Queuing: Open or closed



Queue Formation



Future Experiments

- Higher N numbers
 - Especially for non-music condition
- Stationary cameras also
 - To test for experimenter bias
- Problem:
 - The choice of music makes a difference

Public Engagement on Soundscape

- During the Experiment: Thousands
- Lectures: Hundreds
 - Cheltenham Science Festival
 - White Night (Come Together)
 - Brighton Science Festival
- Radio 4: ~3 Million
 - You and Yours

Acknowledgments

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- Brighton Science Festival