

FACULTY OF MUSIC
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Evaluating Timbre in Location Recordings

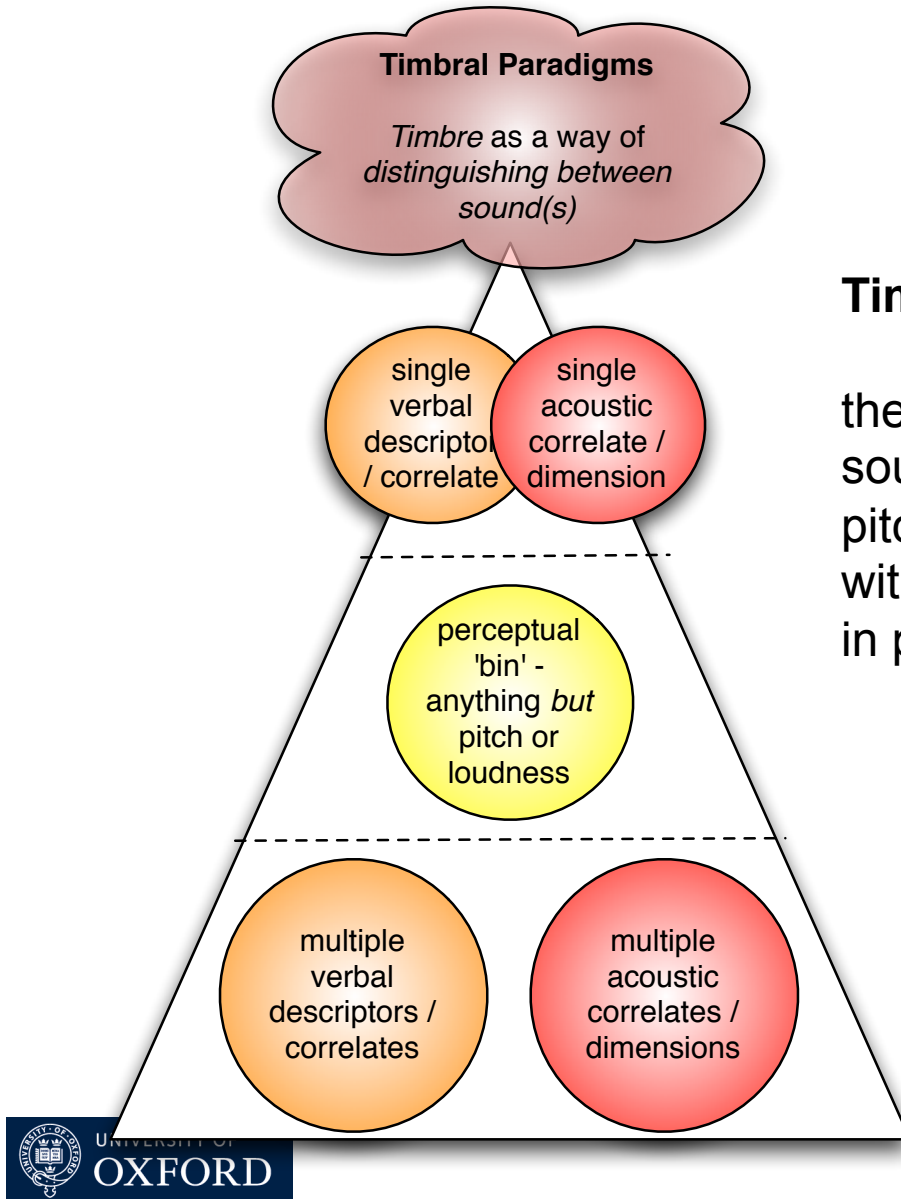
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Overview

- What is timbre?
- Why would we want to control it?
- Compiling stimuli (making recordings)
- Strategies for listener evaluation
- Questions?

What is timbre...



Timbre | *ˈtambər; ˈtä n brə* | (noun)

the character or quality of a musical sound or voice as distinct from its pitch and intensity (“trumpet mutes with different timbres”, “a voice high in pitch but rich in timbre”)

- New Oxford Dictionary

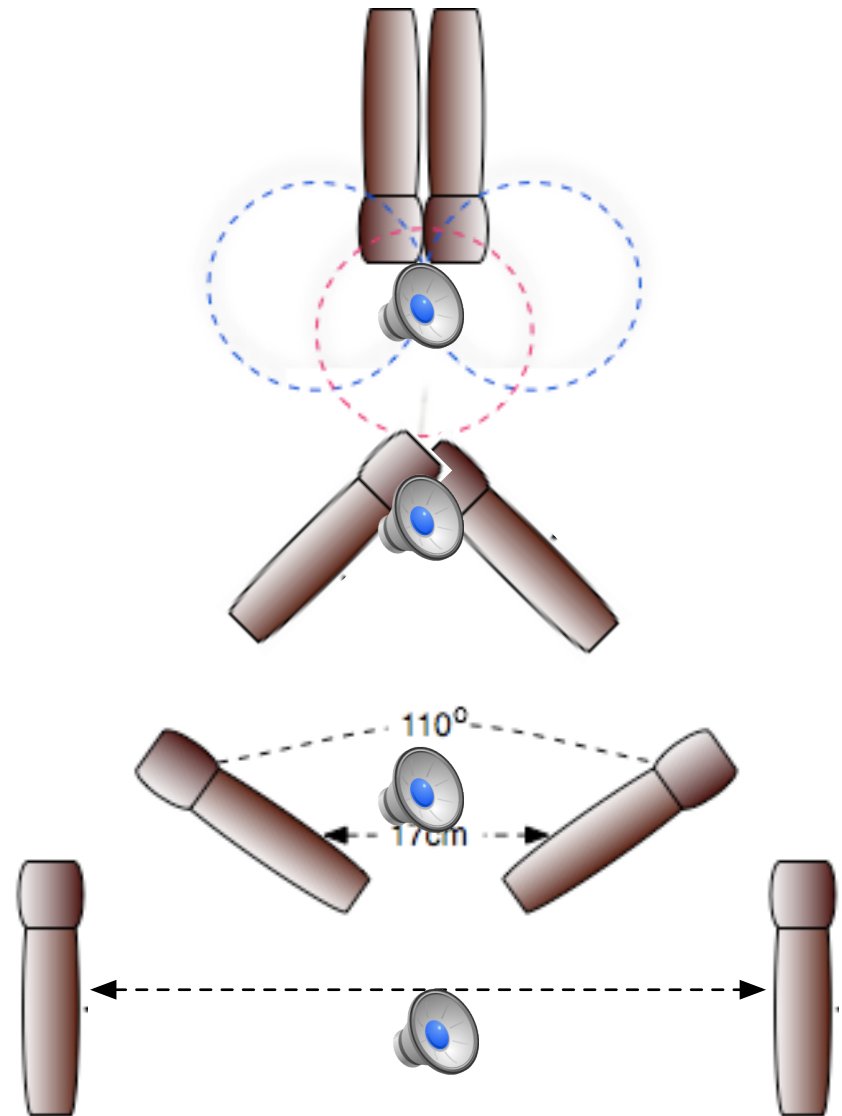
... and why would we want to control it?

- In order to *manipulate* individual timbral attributes, or overall timbre, in sound recordings
- Here are a few choice quotes illustrating the use of timbral attributes by musicians when describing recorded sound(s):
 - “This recording is really *clear*”
 - “The ‘cello is too *bright*”
 - “The kick drum is not *punchy* enough”
 - “The vinyl sounds much *warmer* than the CD version!”



... and why would we want to control it?

- An engineer recording on location might find that compromises in monitoring due to the recording environment can force decisions to be made about microphone placement without the luxury of direct comparison.
- The 'big four' microphone techniques (M/S, ORTF, A/B, X/Y) were used to create stimulus recordings for listener evaluation



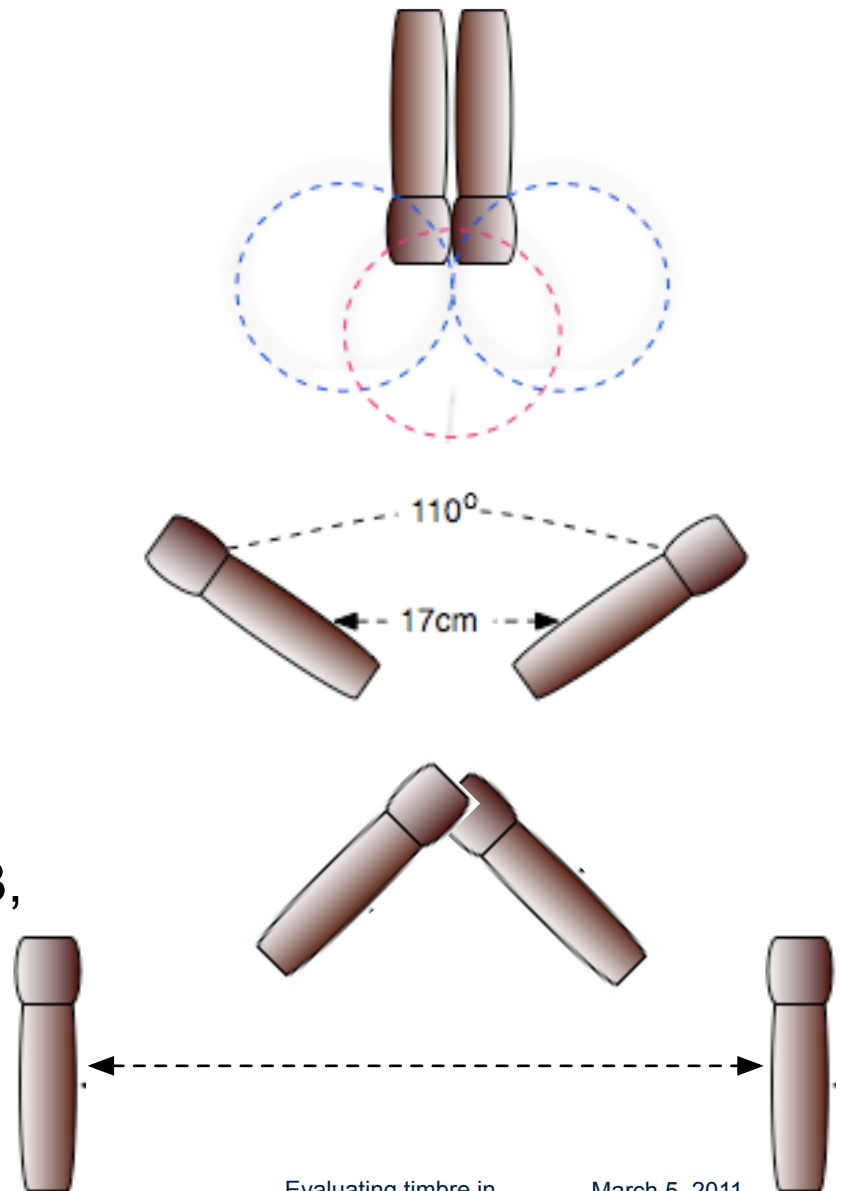
... and why would we want to control it?

- Usually we ask listeners to describe, then quantify differences in a stimulus set
- If the stimulus set has limited acoustic variation, we can correlate this variation with the described/quantified listener responses to create *timbral metrics*



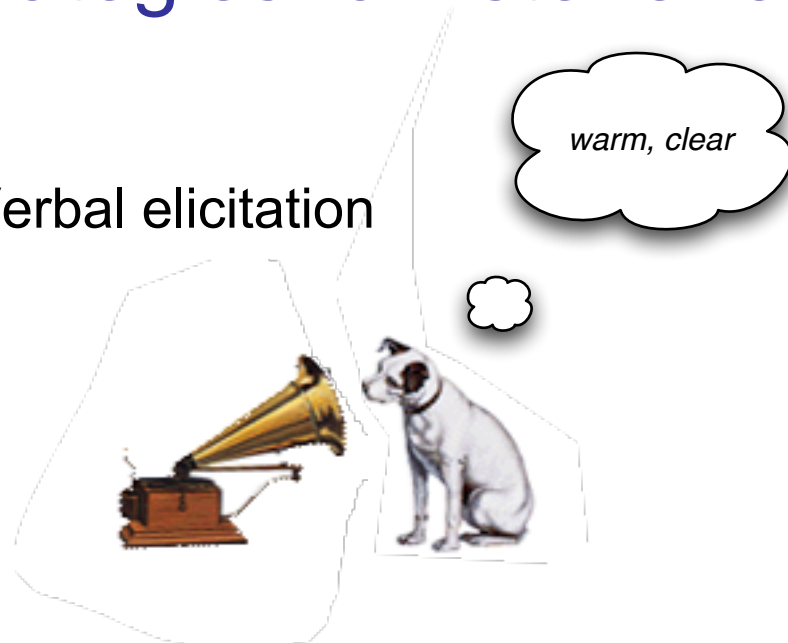
Compiling Stimuli

- An engineer recording on location might find that compromises in monitoring due to the recording environment can force decisions to be made about microphone placement without the luxury of direct comparison.
- The 'big four' microphone techniques were used (M/S, A/B, X/Y, and ORTF)



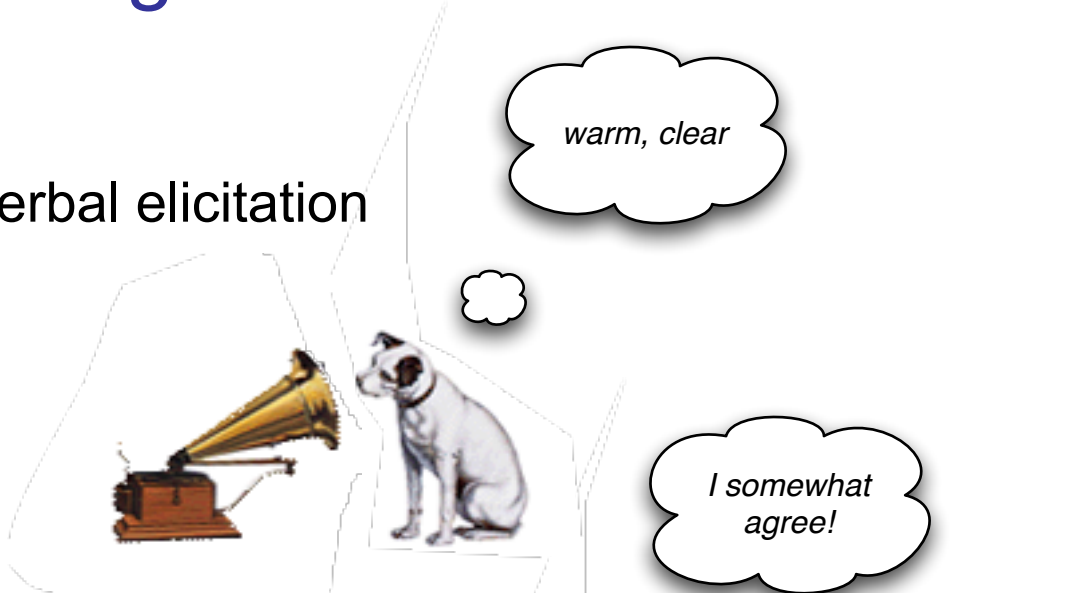
Strategies for listener evaluation

- Verbal elicitation

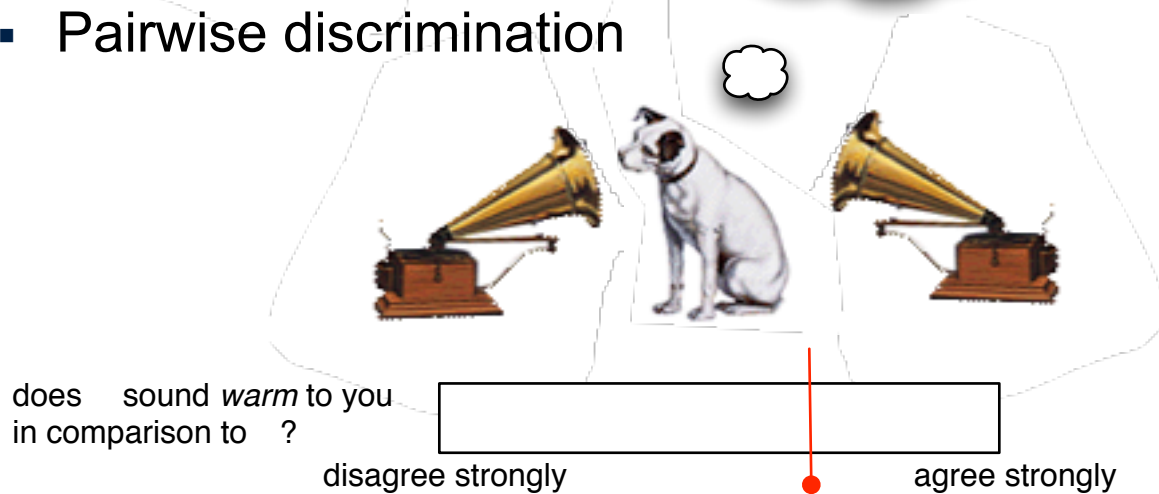


Strategies for listener evaluation

- Verbal elicitation



- Pairwise discrimination



Strategies for listener evaluation

- Verbal elicitation



- Analysed by VPA to determine prominence of given terms

- Pairwise discrimination



- Analysed by MDS to show dimensionality and movement in a timbre space (based on RSQ and s-stress)
- OR analyse mean and standard deviation
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The End...

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- Questions are welcome (time allowing!)

