

Coordination and Creative Collaboration during Music Ensemble Performance

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Der Wissenschaftsfonds.

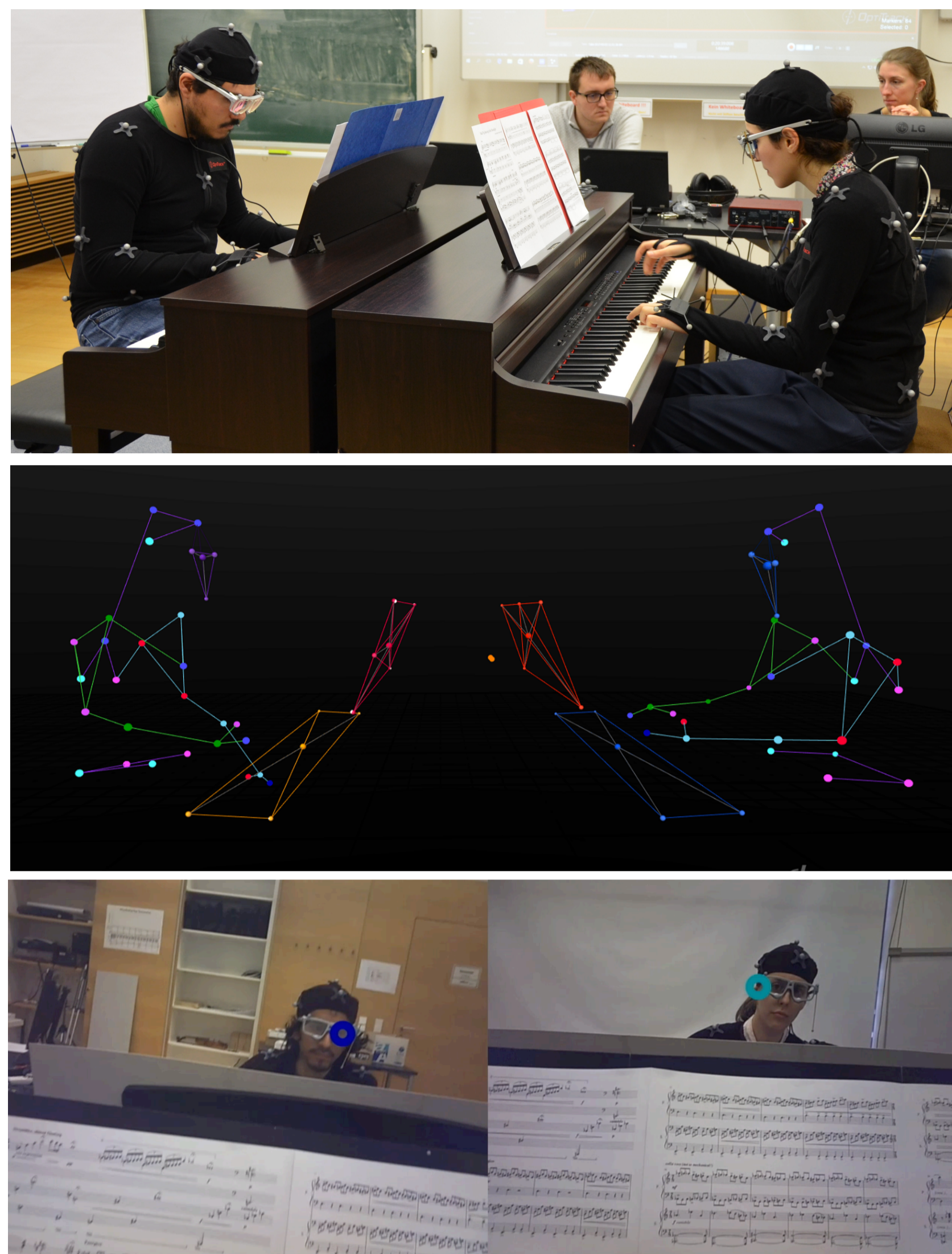
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Background

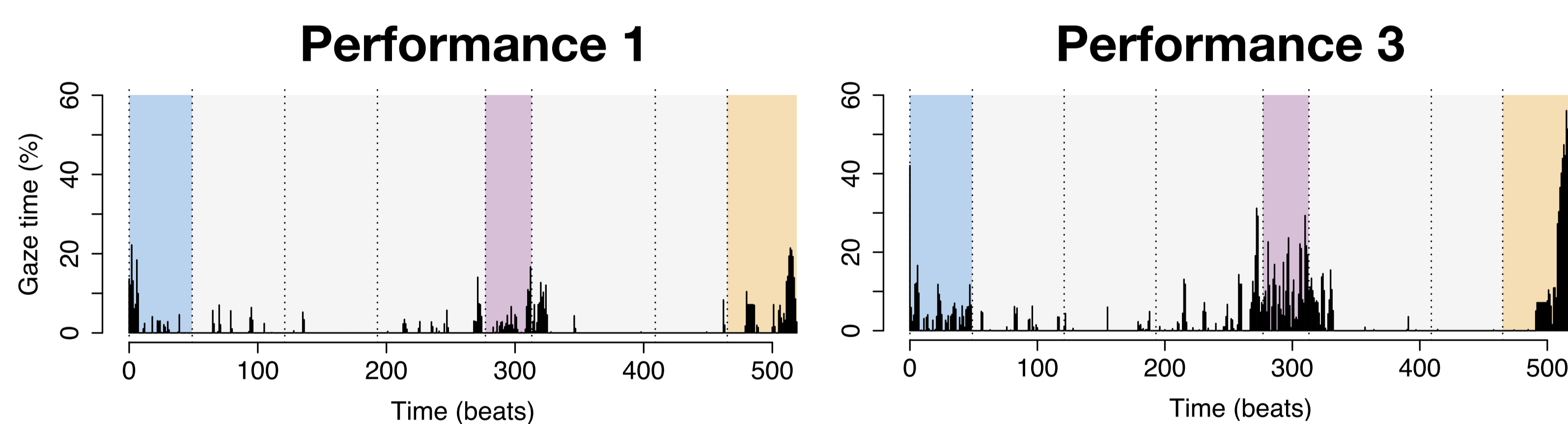
- Ensemble performance requires collaborative creativity
- Musicians must converge on a single interpretation (often in real-time), even though individual interpretations may differ
- What is the function of the **visual modality** in creative ensemble coordination?
- How do visual interactions manifest?

Methods



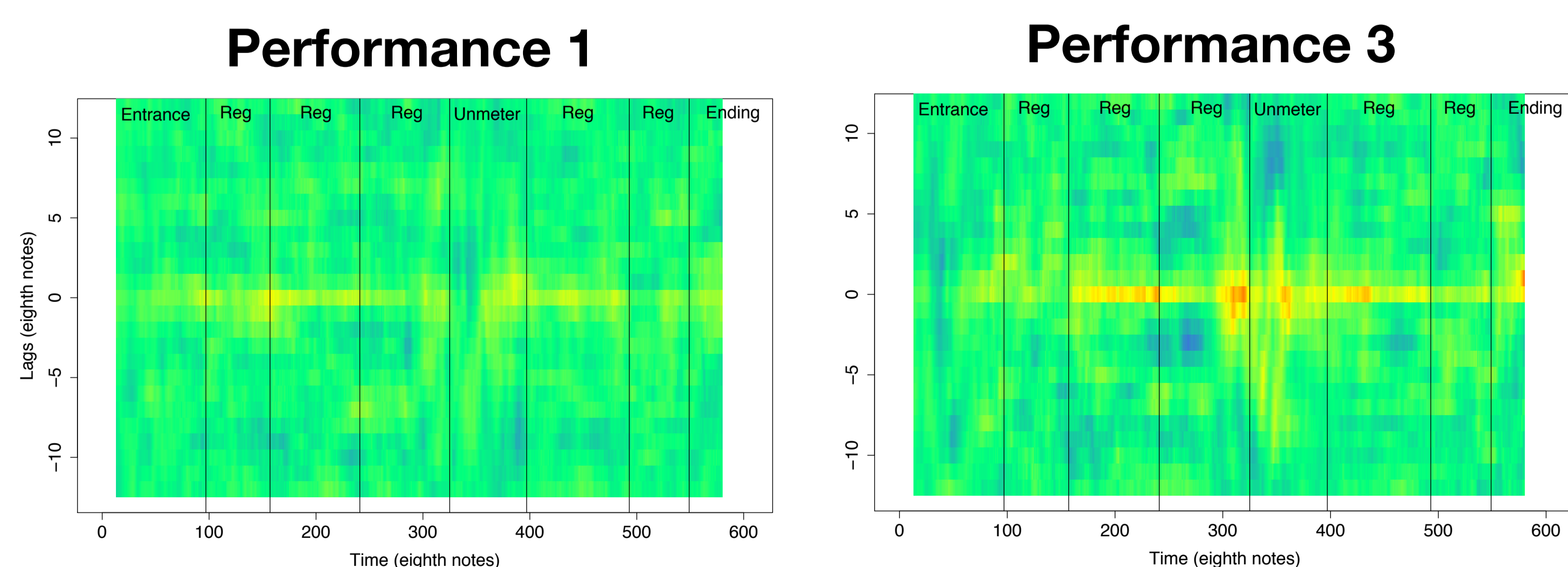
- We used a synchronized motion capture/eye tracking system to align measurements of body motion & gaze direction
- Musicians performed under different conditions:
 - Regular/irregular musical tempo
 - Before rehearsal/after rehearsal
 - Visual contact/no visual contact
 - Solo/duet
- Musical stimuli was composed that provided a challenge for coordination (e.g., synchronized chords, unmetred section)

Eye gaze results



- Musicians watch each other more **after rehearsing** and when **timing is irregular**

Body motion results



- Musicians move more **after rehearsing** and when **they can see each other**
- Movements are more coordinated **after rehearsal** and when **timing is irregular**
- Cueing gestures are exchanged after fermatas

Upcoming research

- Musicians choose to interact visually when they have the opportunity to do so.
- Visual interaction has little effect on note synchronization, so what is it good for?

Hypothesis 1: visual interaction acts as a social motivator that enhances feelings of “togetherness”

Hypothesis 2: audience members are sensitive to visual interaction and degrees of “togetherness” between performers, and take these as cues to performance quality

