

Sofia Dahı

Performers' Movements



How do musicians move – and why?

- The same player may move very differently for a similar setting
- Several different performers may move in the same way....but also extremely differently
- Why is this?
- What is the role of musicians' movements?



After today you should be able to....

- Give examples of what different types of movements that may appear where in a music performance.
- Discuss the role these movements may have.
- Give examples of constraints that may influence which movements we see (body, instrument, tempo...).
- Discuss what may influence what expressive or communicative movements that a performer uses.

Exercise: What types of movements?

- Watch the video excerpt
- Write down
 - What types of movements do you see the musicians do?
 - What role/purpose does the movement serve?

Videos used:

Alexander Rybak live

<https://www.youtube.com/watch?v=JzAASN8PALs>

MERU Concert live - Kaushiki Chakrabarty with Soumik Datta and Vija

<http://www.youtube.com/watch?v=hAlcD8ffv3k>

Functional categorization of players' movement gestures

1. Sound-producing movements:

- Primarily for the production or modification of notes
(Conveying intention and expression through the resulting sound events)

2. Communicative movements:

- Directly expressing intentions of the performer to observers and co-performers.

3. Sound-facilitating movements

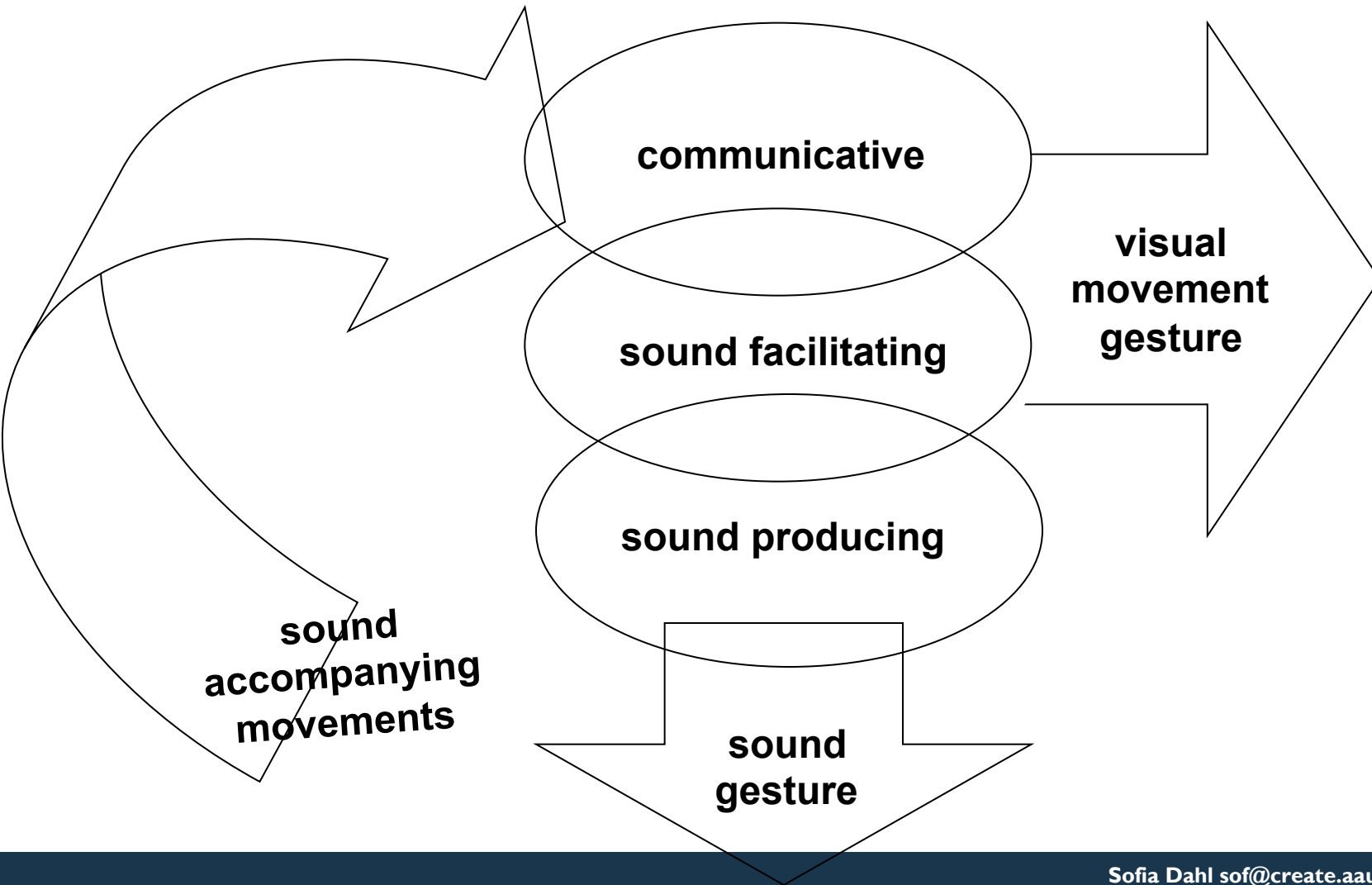
- Movements not directly related to, but *supporting* the production of notes,

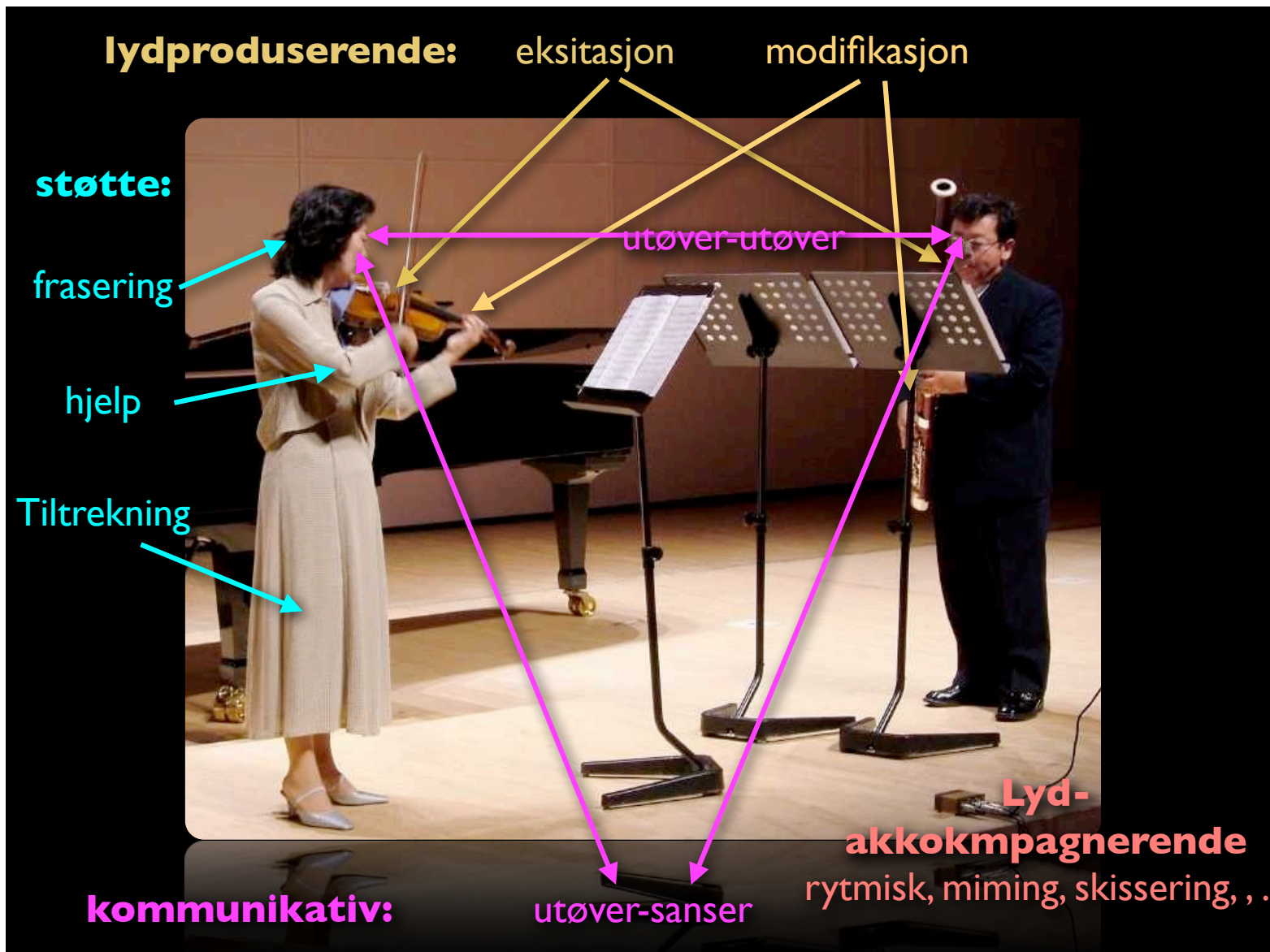
4. Sound-accompanying movements

- Movements not involved in sound production but follow the music or made in the response to sound.

(See Godøy & Leman, 2009)

Categories overlap and interact!





(Jensenius slide, 2013)



SPACE

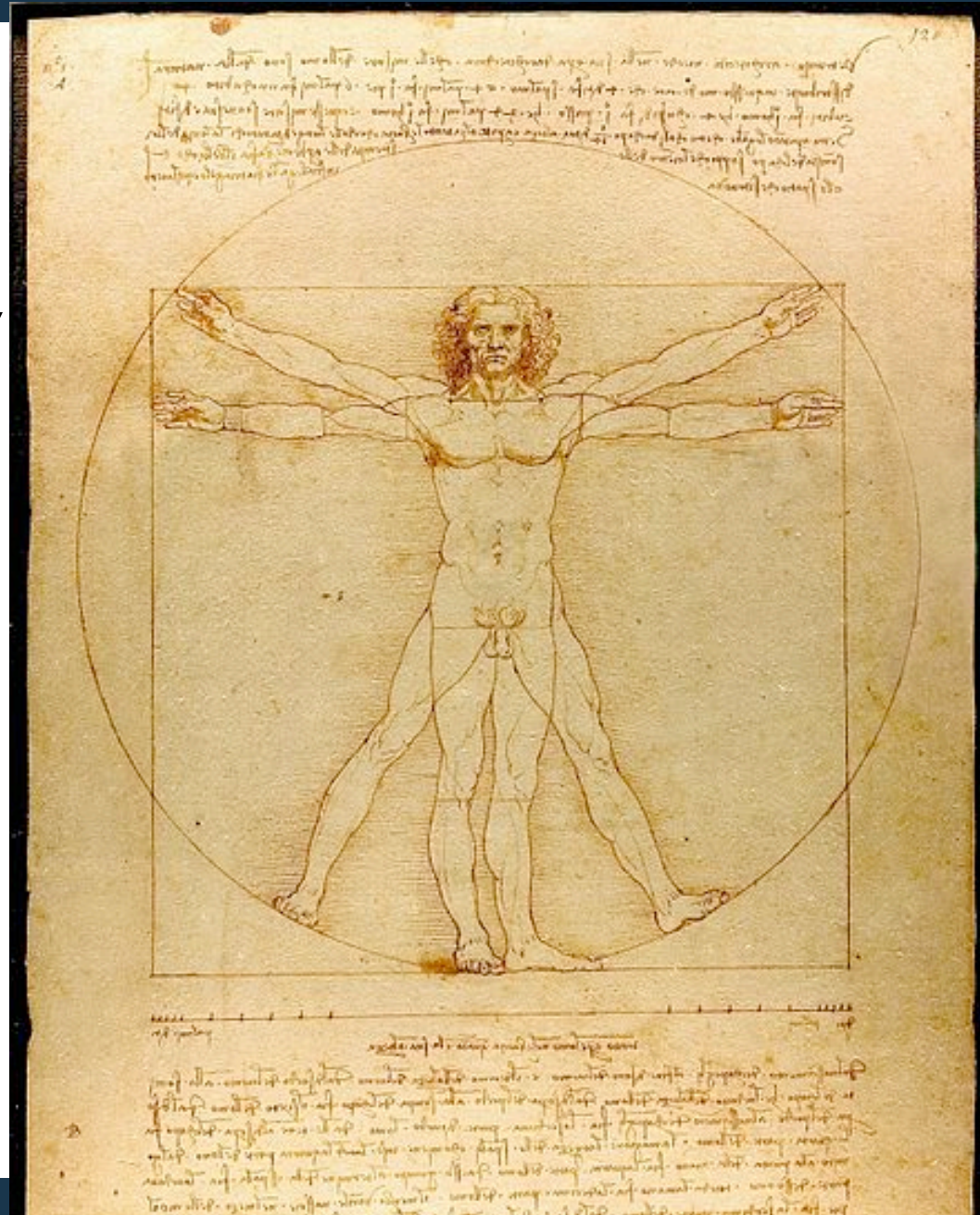
Space

- SCENE space



Space

- PERSONAL space
- The space you occupy and can reach within (Kinesphere)



Space

- ACTION space
- Where in the space do different types of movements occur?



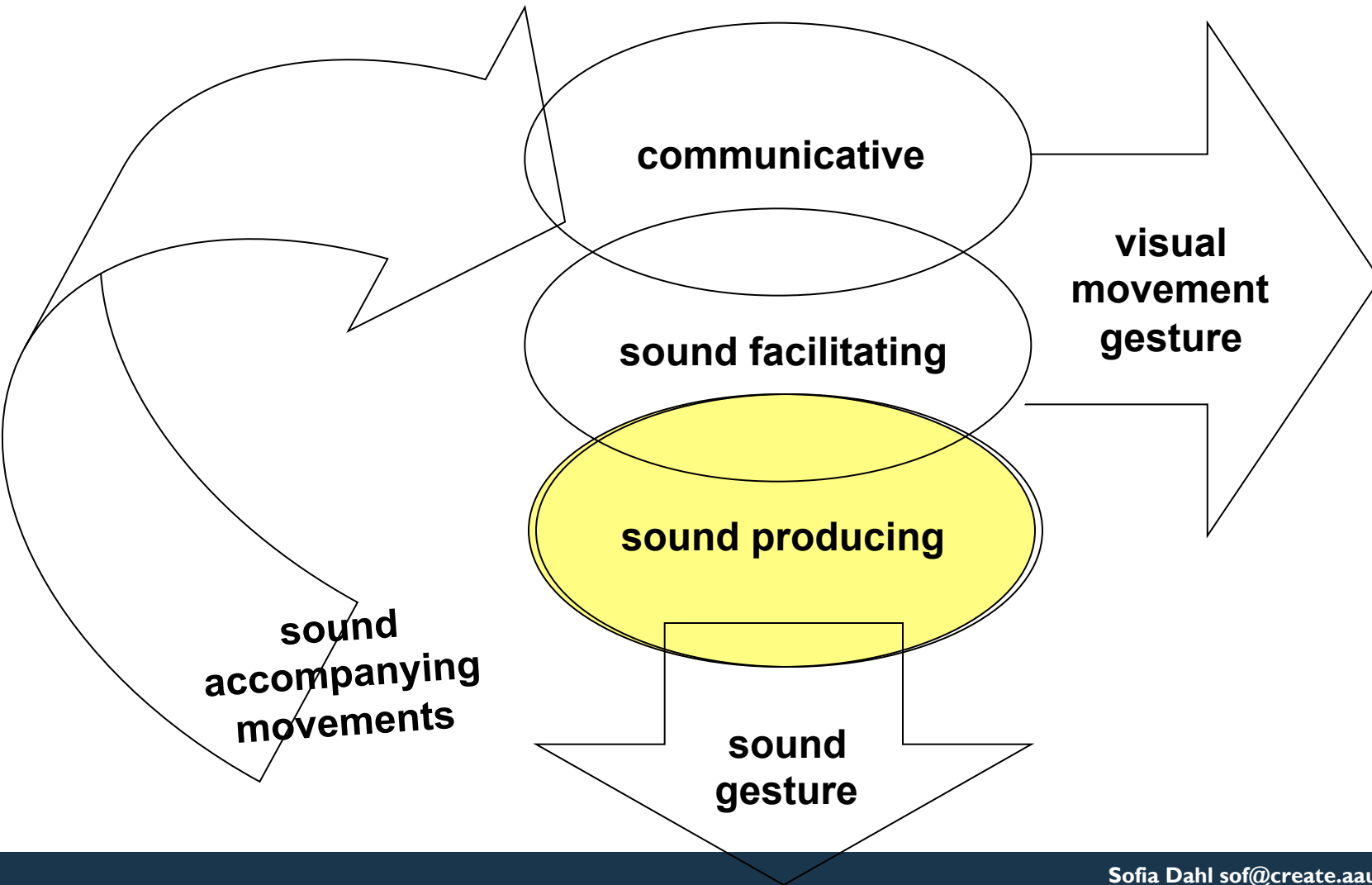
Ancillary,
sound-accompanying,
and communicative

Sound-producing

Sound-modifying

Video example: Snare drum playing



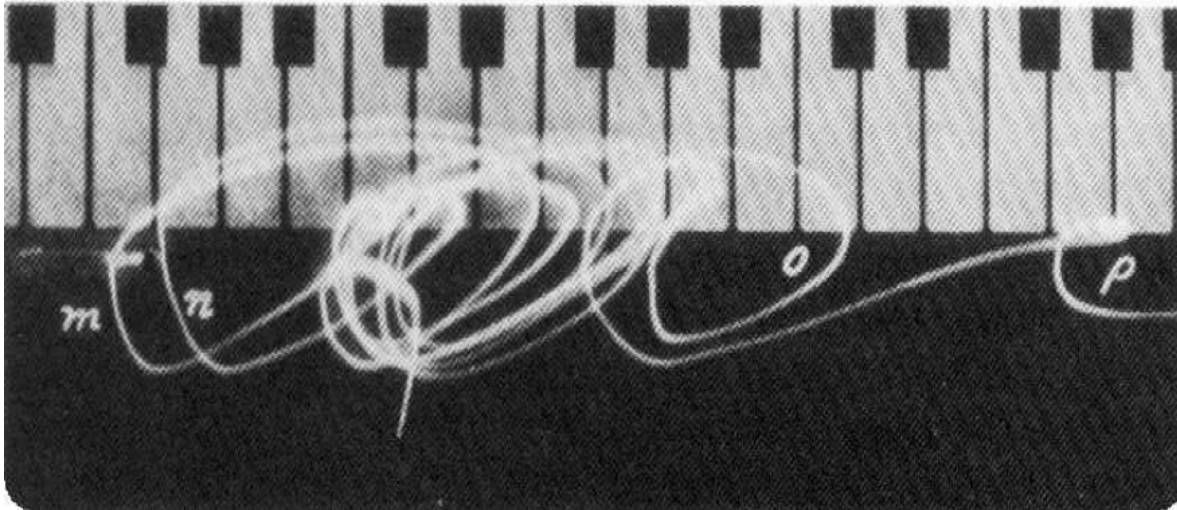


SOUND-PRODUCING and SOUND MODIFYING MOVEMENTS

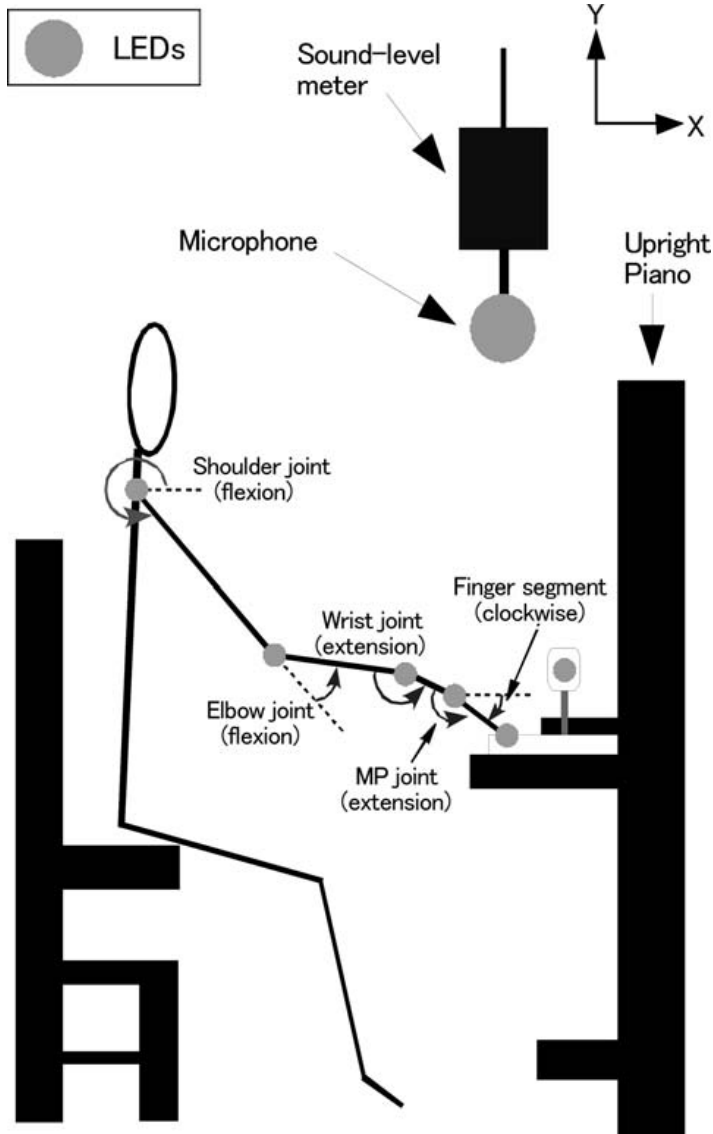
What determines the movement strategies used during playing?

- **Body constraints and physiological differences**
 - Biomechanics: Size and flexibility of limbs and joints
 - Motor control: how a movement path is planned (“Degrees of freedom – problem”).
- **Instrumental constraints**
 - Which range of movements can be used to manipulate the instrument in the desired way?
- **Playing schools and traditions**

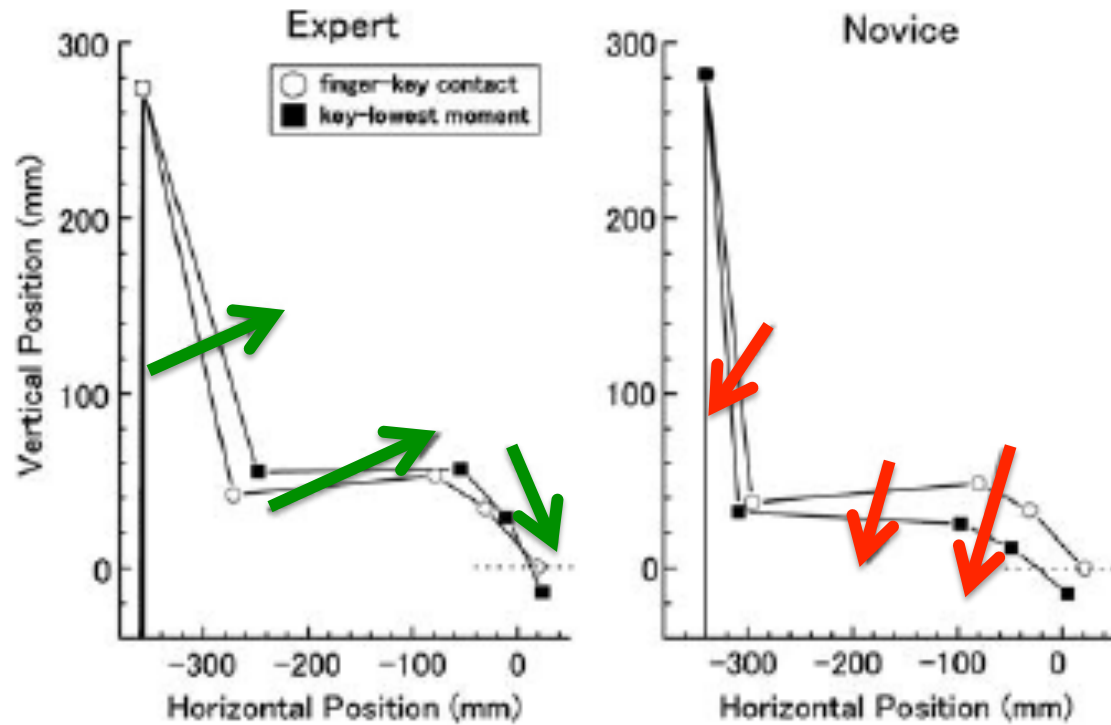
Early movement study of piano playing



Continuous circling movement of the hand in a Chopin etude (Ortmann, 1929).



Experts and novice initiating piano stroke differently.

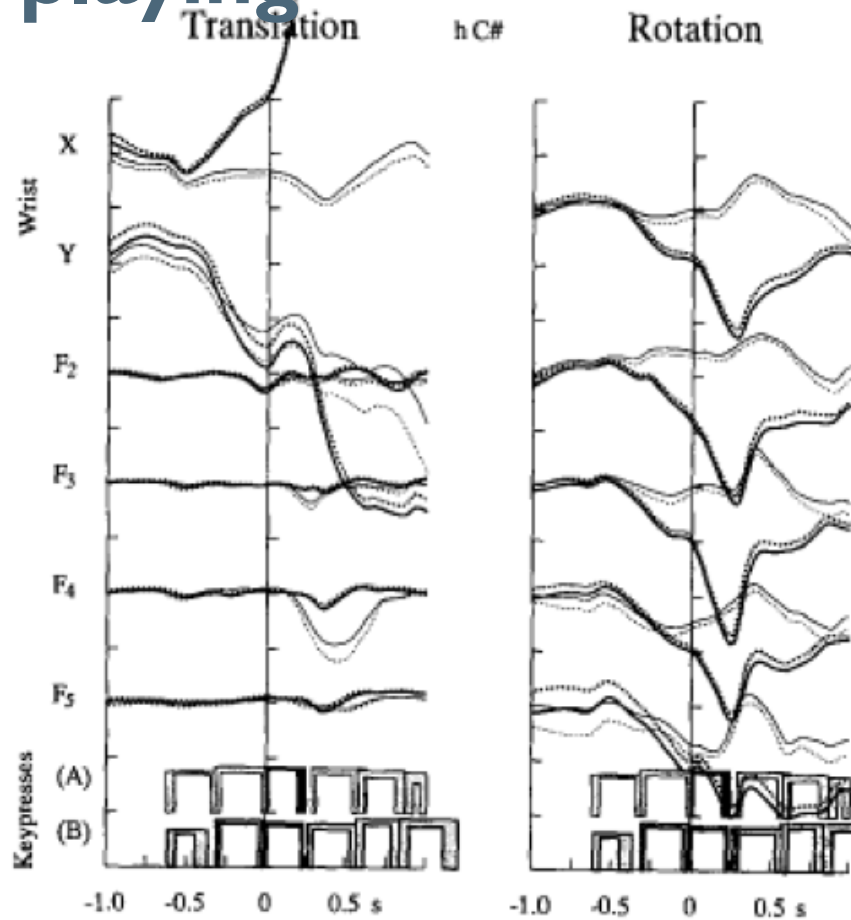
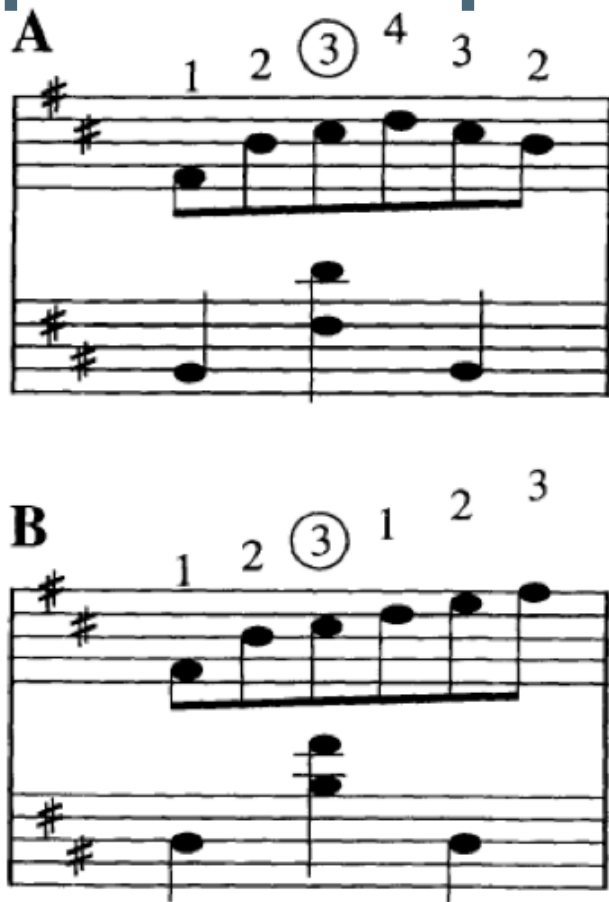


(Furuya & Kinoshita 2007)

Anticipation

- Players need to initiate a movement early in order for a note to be played on time. If possible, preparations can start several notes before.

Preparation in piano playing



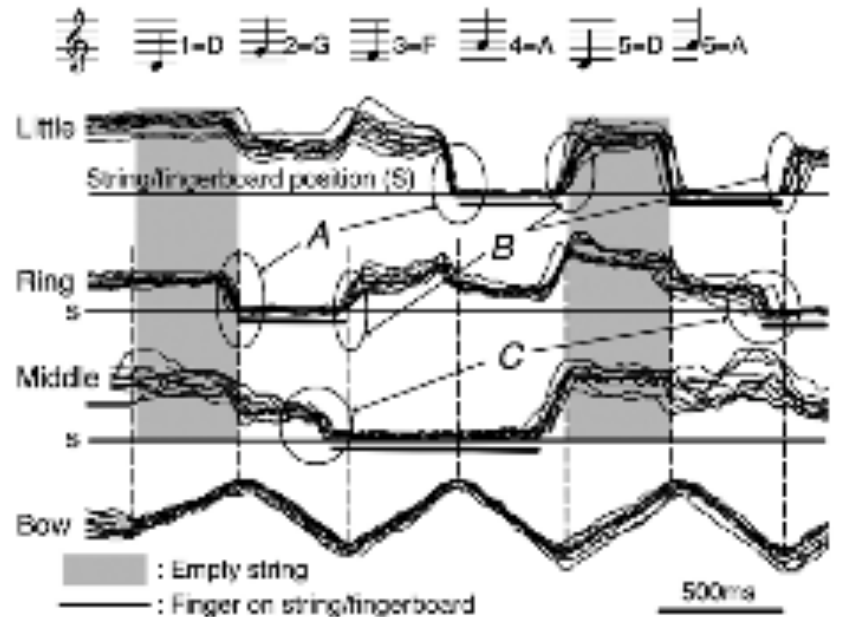
Preparations before "thumb under" can be as early as 500ms before.

(Engel, Flanders & Soechting, 1997)

Anticipatory movements

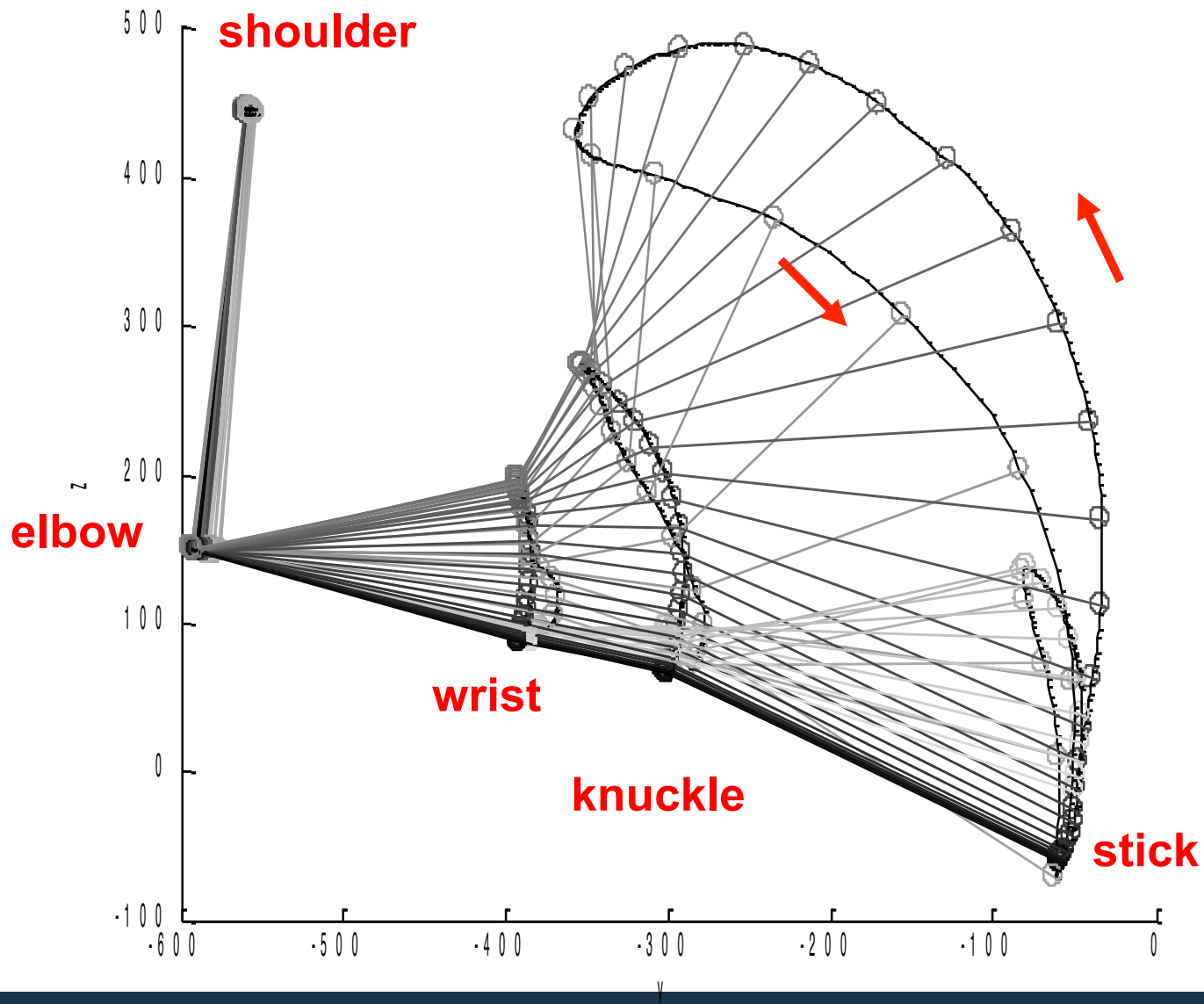
- If string is not sounding, violinists start moving fingers well before the note

Baader, Kazennikov & Wiesendanger (2005)



- A: Serial: actionfinger down controls timing and pitch*
- B: Serial: finger-lift controls timing only*
- C: Parallel & Anticipation: actionfinger controls pitch, not timing*

Drummer playing single *mf* stroke



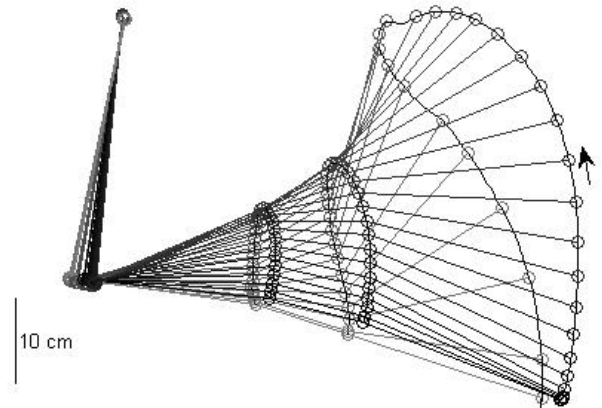
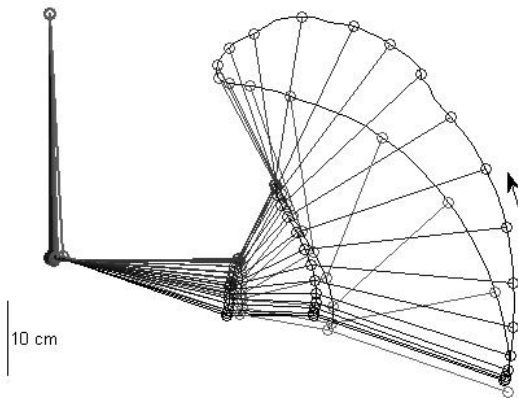
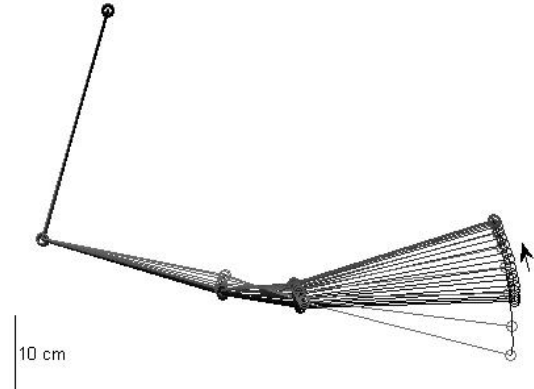
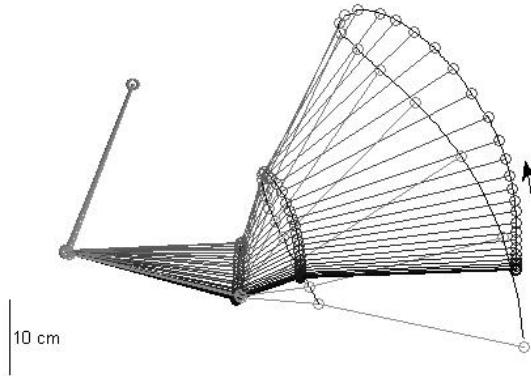
Dealing with the rebound

- The rebound from the surface can be incorporated in, and be an aid for, the preparation for the nextcoming stroke.
- Strategies like the “Moeller stroke” utilizes the rebound
- Necessary in order to play some fast patterns (e.g. rolls)
- Accelerating the stick over a longer runway makes louder playing possible.
- ...but if the next stroke is to be softly played the rebound may need to be controlled

Visualizing players' strategies

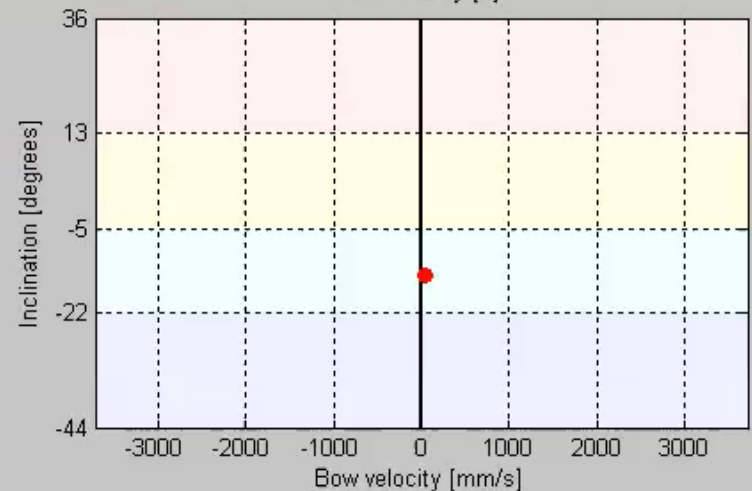
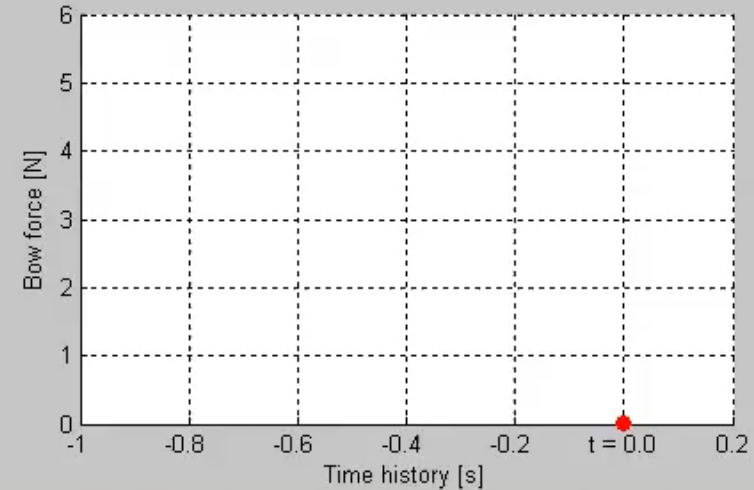
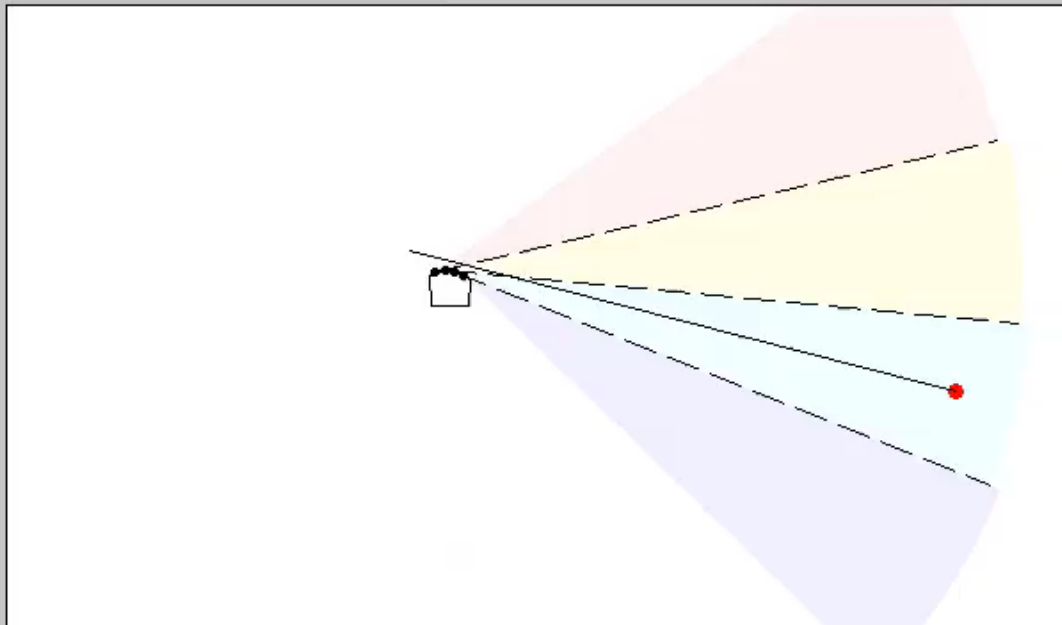
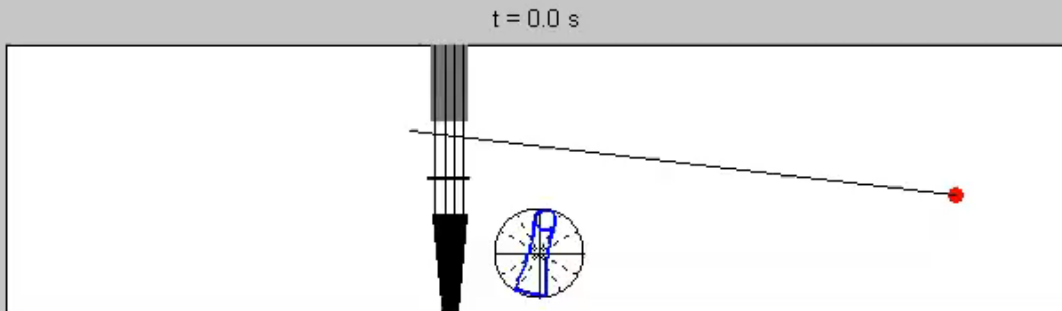
- Different strategies are used by different players
- What constraints are relative to instrument and what are depending on the player?

Same task, many different movement strategies.



Single, stroke at mf

Movement and force measurement in violin playing

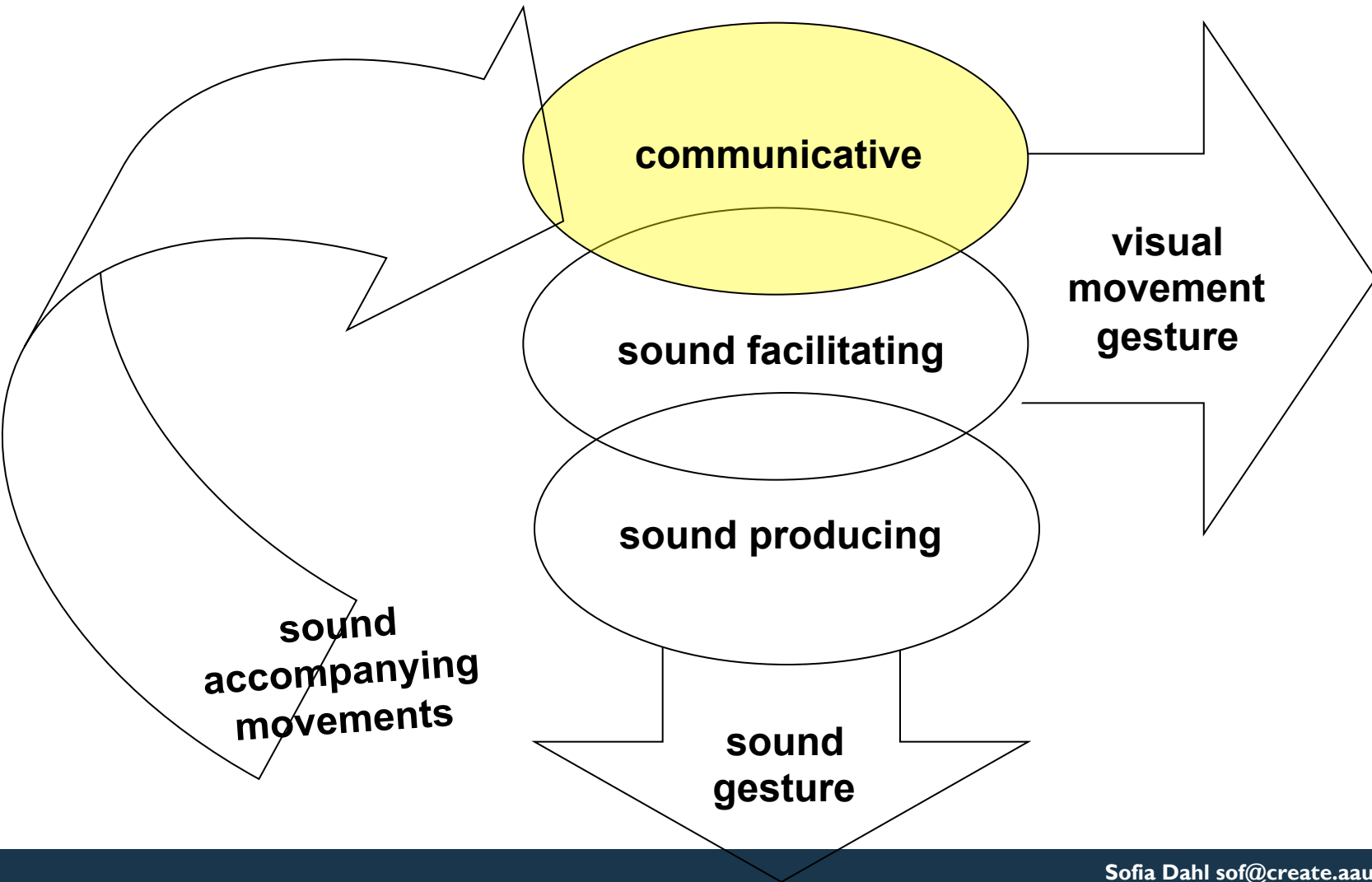


DISCUSSION

**In electronic music performance movements
and sound are *NOT* necessarily linked**

What determines how a performer moves?

COMMUNICATIVE MOVEMENTS



Musicians' movements compared with other specialized movements (e.g. sport).

- Hand and arm movements primarily intended for the production of musical notes.
- Typically also under strict time constraint.
- That is: non-verbal communication through musical sounds.
- During practice, focus is on sound (rather than movement per se).

ÁPRIL 6. 1873.

BORSSZEM JANKÓ.

5



Hanneti tépelődés. Fausti vívódás, Mély esend. A köhögés sohajjá lesz.



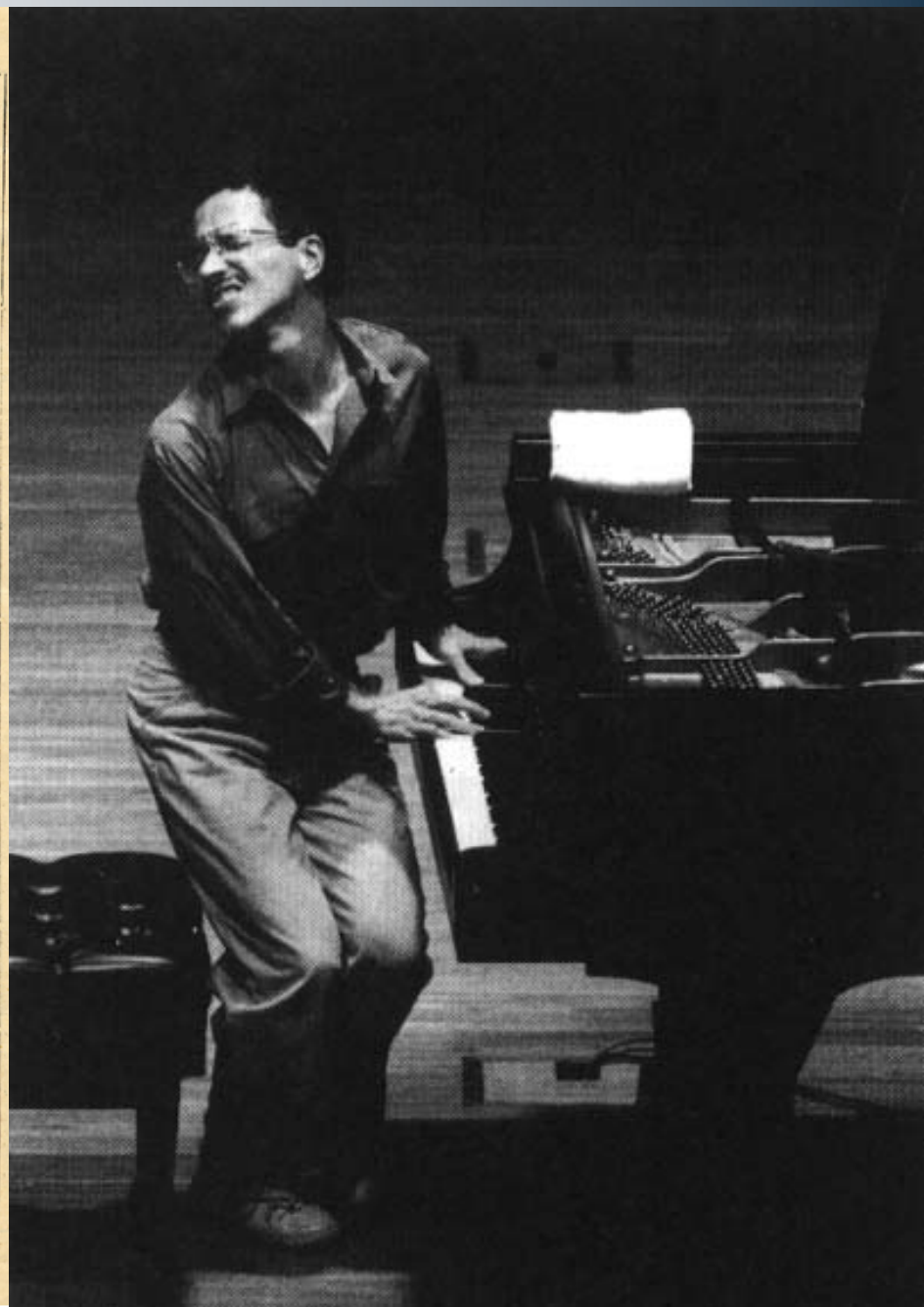
Chopin. George Sand. Visszaemlékezés. Édes ifjuság. Illat, hűdsugár és szerelem.



Dante. A pokol. Az elkárhozottak (körtük a zongóra is) jajgatnak. Lázás izgatottság. A pokol kapuit bevágja a szélvész. Bum!



Csak játszott. Nem csak nekünk, de velünk is. Imponáló szerénységgel hajtja meg magát. Csattogó taps, kábító éjen.



Expressive gestures in music performance

Several aspects suggested to influence performers' movements:

- Communication with co-performers
- Individual interpretations of the music
- Own experiences and behaviors
- The aim to interact and entertain an audience

(Davidson & Correia 2002)

Expressive gestures as communication

- Also movements not directly related to sound production convey information.

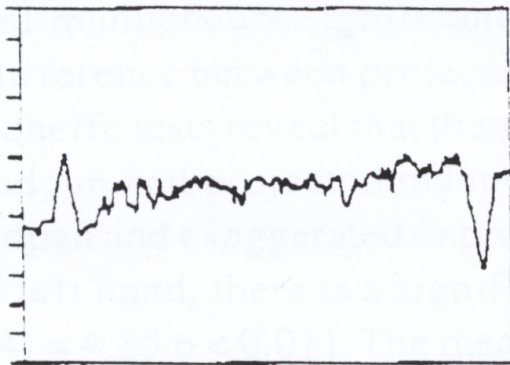
Either because that is the intended purpose of the movement or simply because the movement tells us observers something anyway.

Can you give examples?

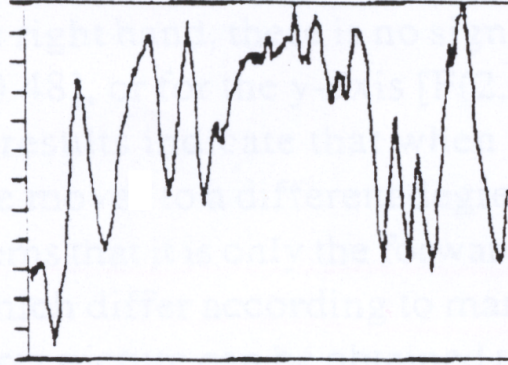
Visual perception of expression

- Observers are able to recognize expressive intent from musicians' movements (e.g. Davidson 1993, 1994).
 - Violinists and pianists
 - Deadpan, projected, exaggerated
 - Audio, visual, audio-visual modes (point-light)
- **Also emotional intent recognized** (Dahl & Friberg, 2004; 2007; Sörgjerd, 2000).
 - Different instrument types (violin, marimba and woodwind)

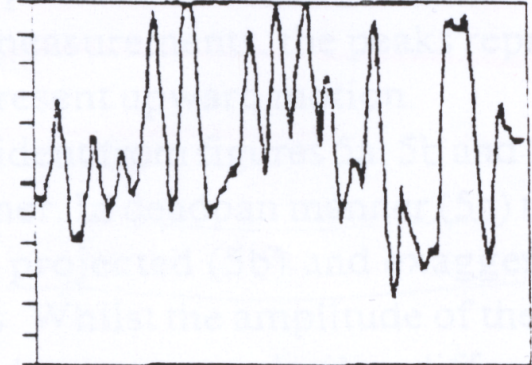
Examples of expressive "rocking motion" in a pianist's head movements



deadpan



projected



exaggerated

Displacement of head towards and away from the piano (Davidson 1994)

Which parts of the body important for this communication?

- Head movements more important for discriminating between expressive intentions than hand movements
- "I expect I'm rating this wrist performance as highly expressive just because there is plenty of action"

(Davidson 1994)

Viewing conditions



full



no-hands

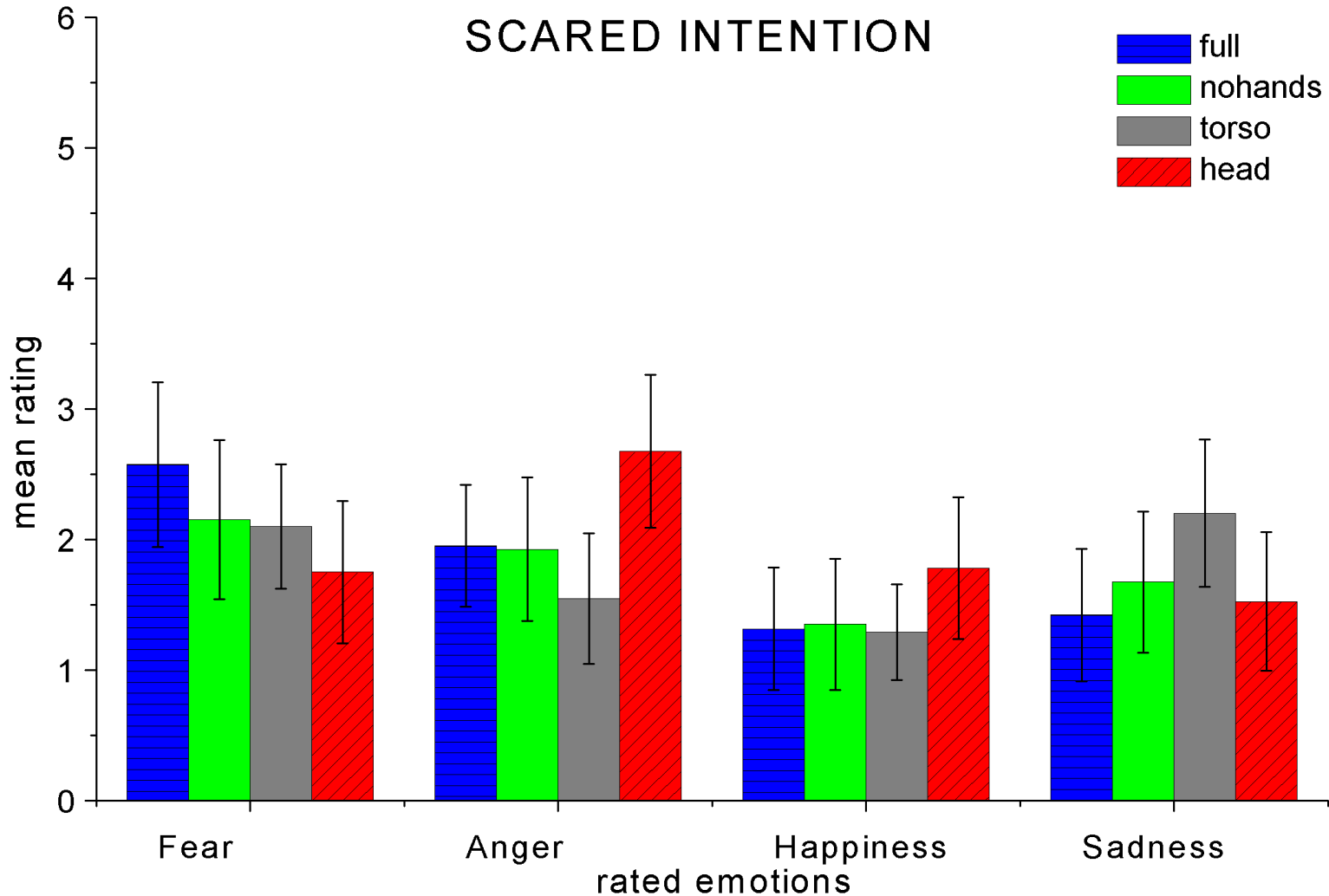


torso



head

(Dahl & Friberg, 2004; 2007)



(Dahl & Friberg, 2004; 2007)

Expressive movements in clarinet performances

(by Wanderley and colleagues)

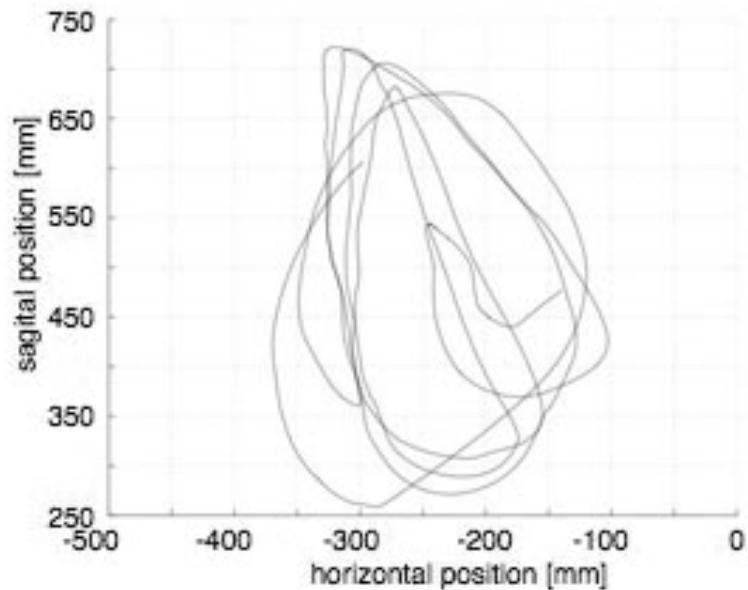


Fig.6 Circular movements of the bell, Brahms first clarinet sonata.

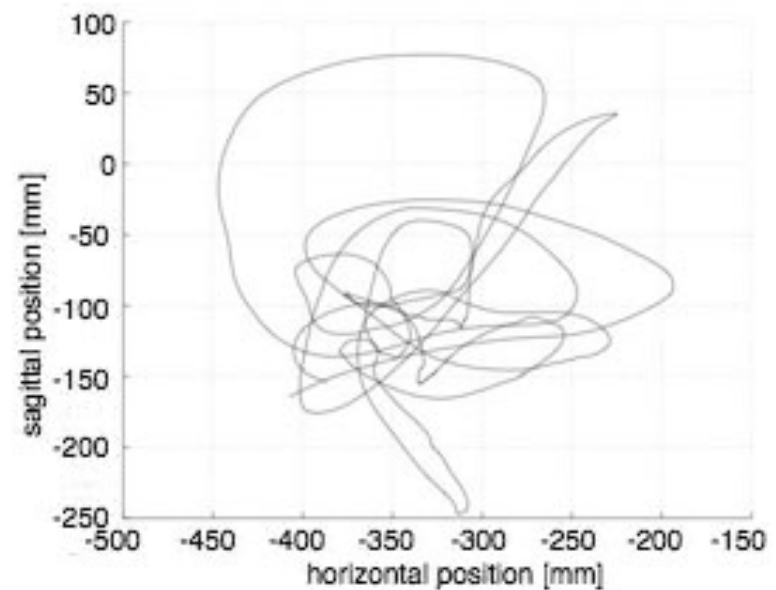
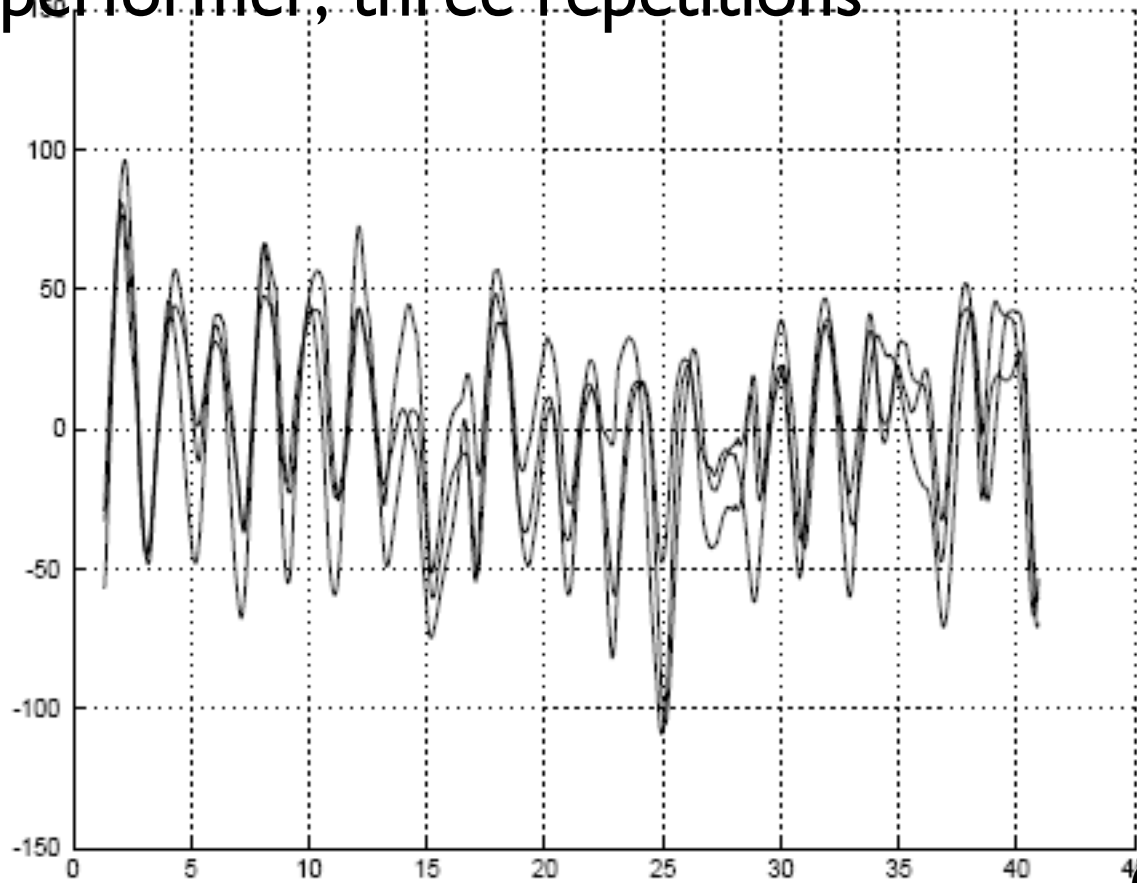


Fig.7 Circular movements of the bell, another player.

Expressive gestures reproducible

Vertical movement of clarinet bell.
Same performer, three repetitions



(Wanderley PhDthesis)

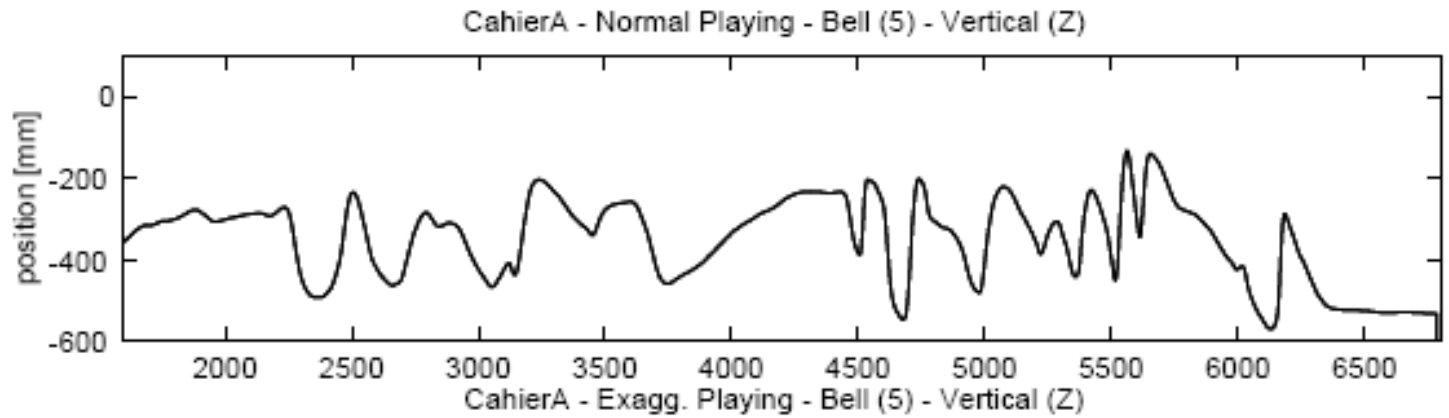
HOW NEEDED FOR PLAYING ARE THESE “EXTRA” MOVEMENTS?



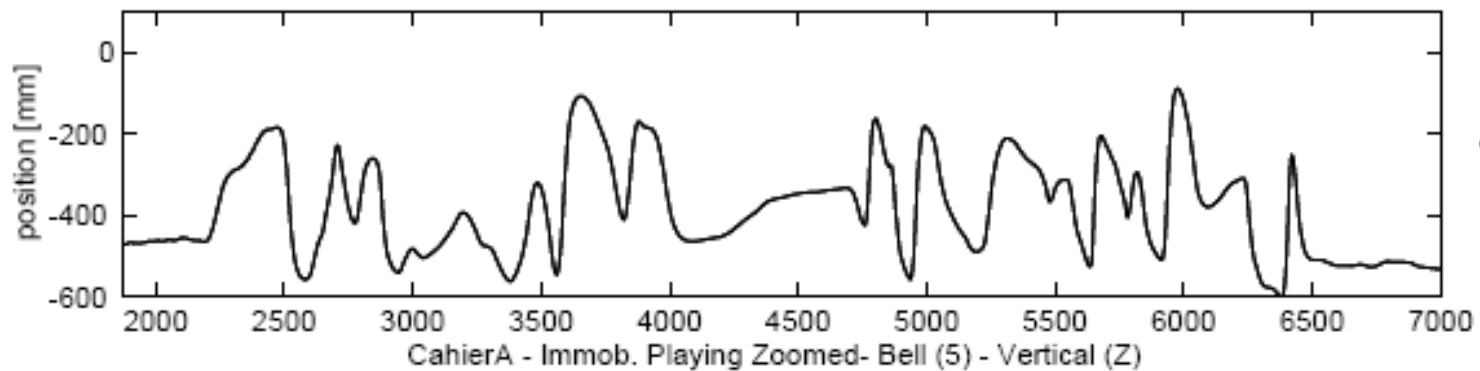
<http://www.youtube.com/watch?v=HnY7UH6z72w>



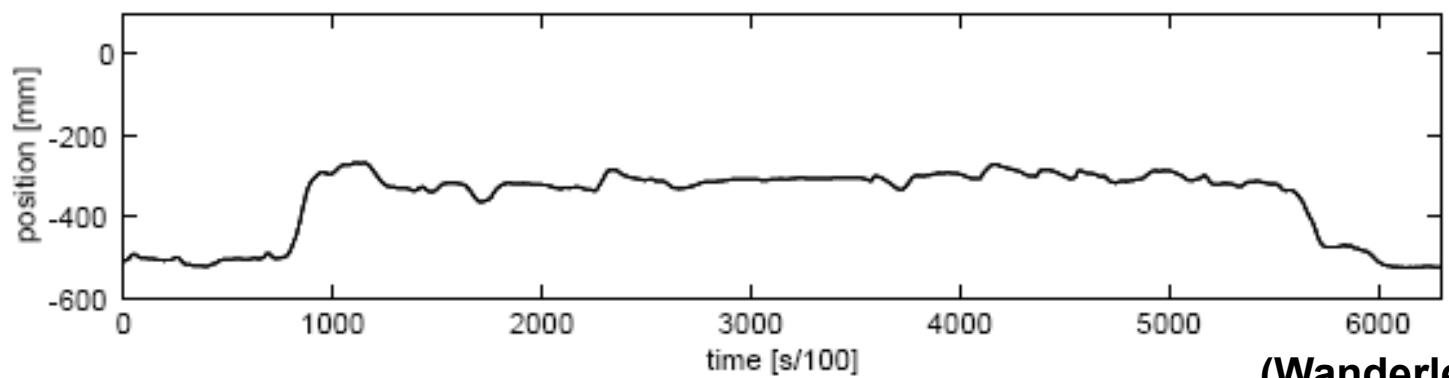
<http://www.youtube.com/watch?v=ItZyaOlr7E>



standard



exaggerated



immobilized

(Wanderley PhDthesis)

immobilized

immobile



standard

standard

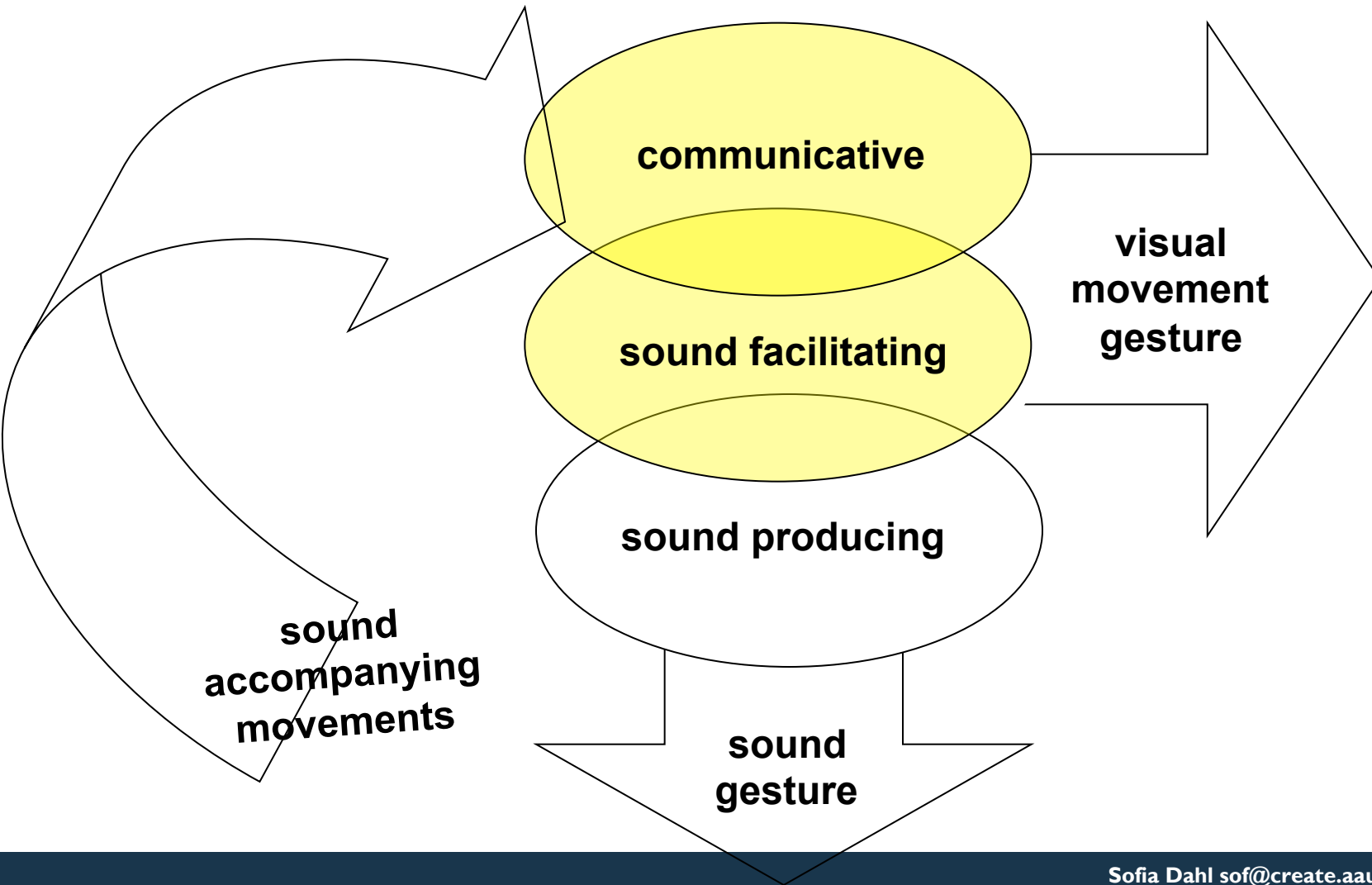


(Wanderley PhDthesis)

So these expressive movements are not necessary for playing

- ...But frequent and reproducible
- What does that tell us about their purpose?
- Do musicians somehow benefit from using them?
- Put it another way: Is the “gesturing player” more successful than the “immobilized”?

SOUND-FACILITATING MOVEMENTS



Visual information influence ratings of expression and interest (Broughton & Stevens, 2008)

- Expressive and interest ratings of marimba performances (“projected” or “deadpan”) higher for audio-visual stimuli than audio
- *When congruent*, expressive gestures can help performer communicate intent to audience

Visual information affect visual ratings on musical structure (Wanderley et al, 2005)

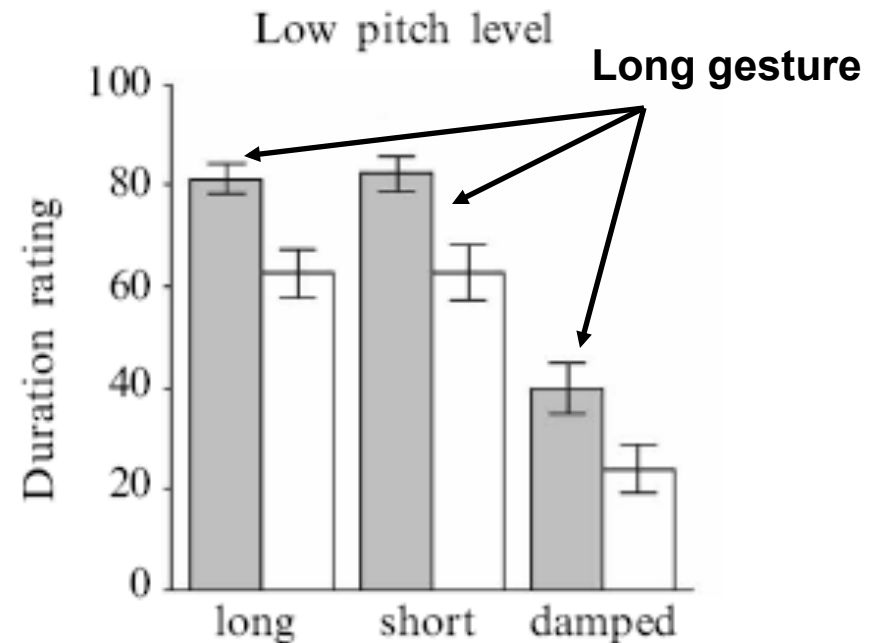
- Clarinet players shifted movement onset with respect to score.
- Anticipating or following.
- Phase shifts between audio and visual affected rated phrasing.
- Phrases rated longer if movements extended into silence.

The visual gesture affects auditory perception

(Schutz & Lipscomb, 2007)



“Long” and “short” strokes played on marimba shown to affect listeners rating of the duration of the tone.



Summary expressive gestures

- Expressive gestures provide extra information that affect how the audience perceive a music performance
- Similar to co-expressive gestures in speech?
- The mind doing the same thing in two ways, not two separate things” (McNeill, 2005)
- Keith Jarret's body movements “melodies acted out physically” (Eldson, 2006)
- Gestures can possibly also help the player control the acoustical properties.