Constructing and Coordinating Representations in Multiple Gesture Spaces

Robert F. Williams

Teacher Education

Cognitive Science & Linguistics

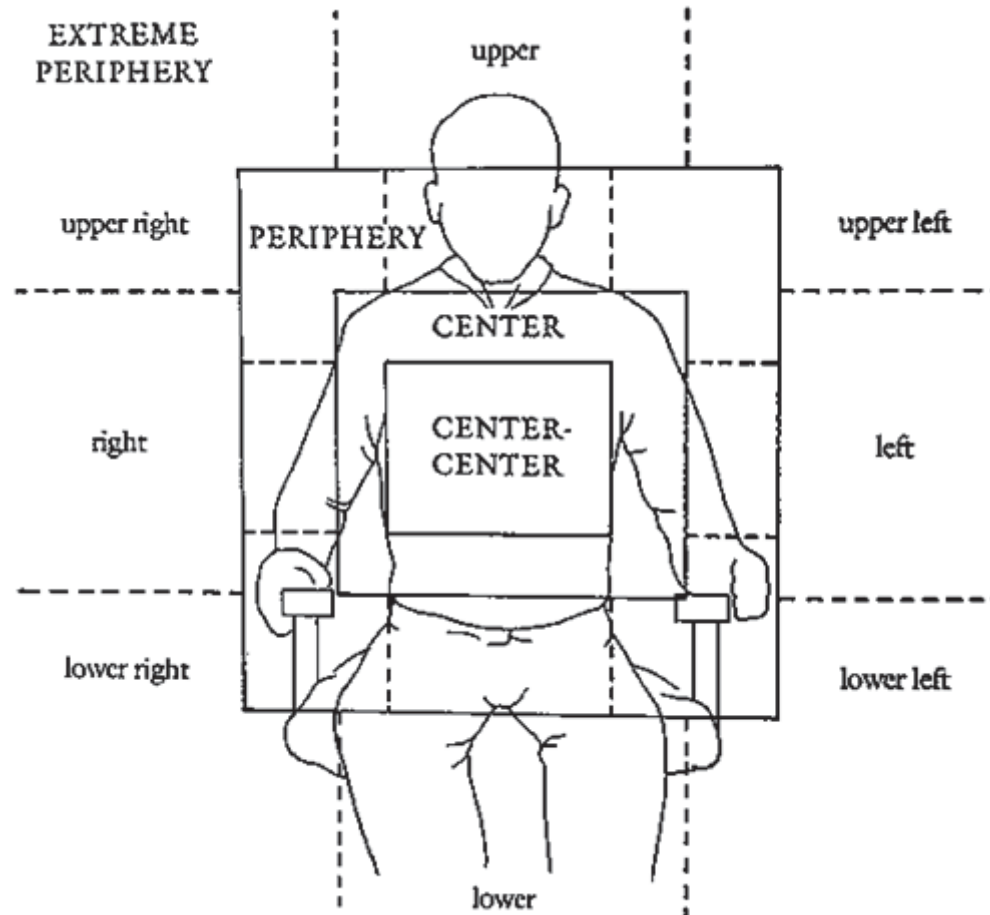Lawrence University

Simon Harrison

Natural Media & Engineering

Human Technology Centre

RWTH Aachen University

Conversational / Narrative View of Gesture Space
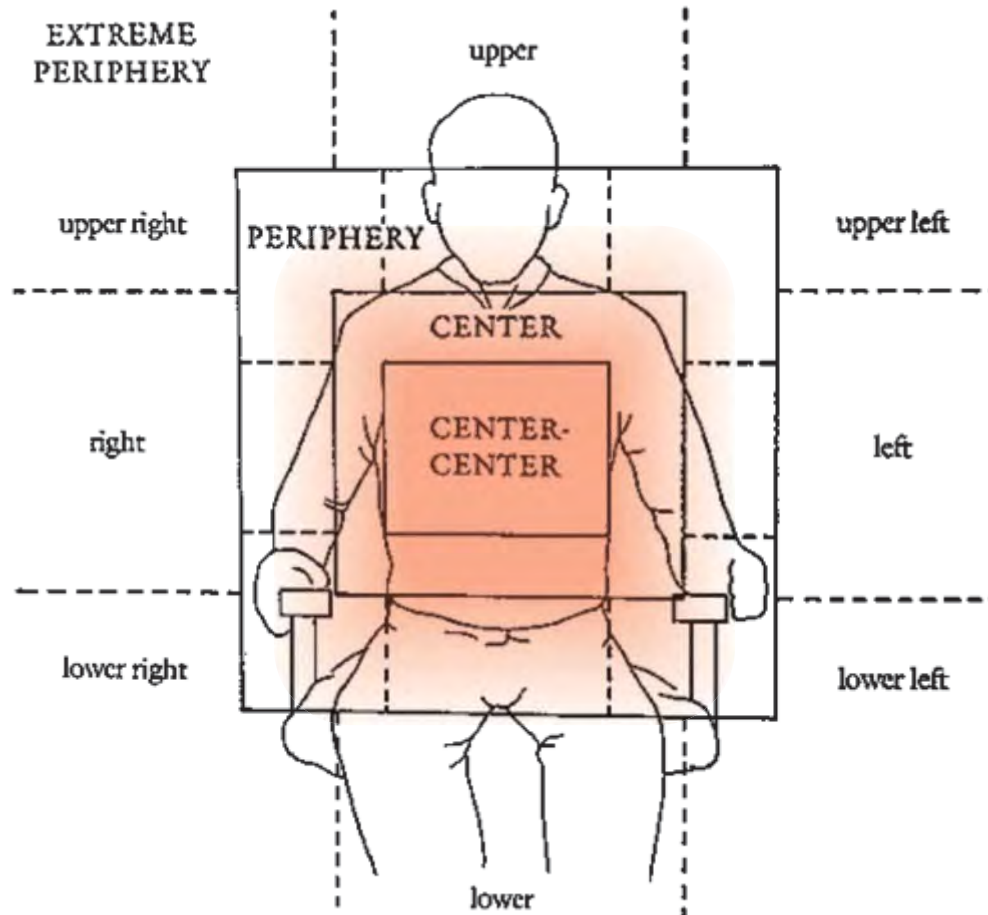
Gesture Space

(McNeill 1992: 86)

"can be visualized as **a shallow disk in front of the speaker**, the bottom half flattened when the speaker is seated … the fore-aft dimension is shorted"
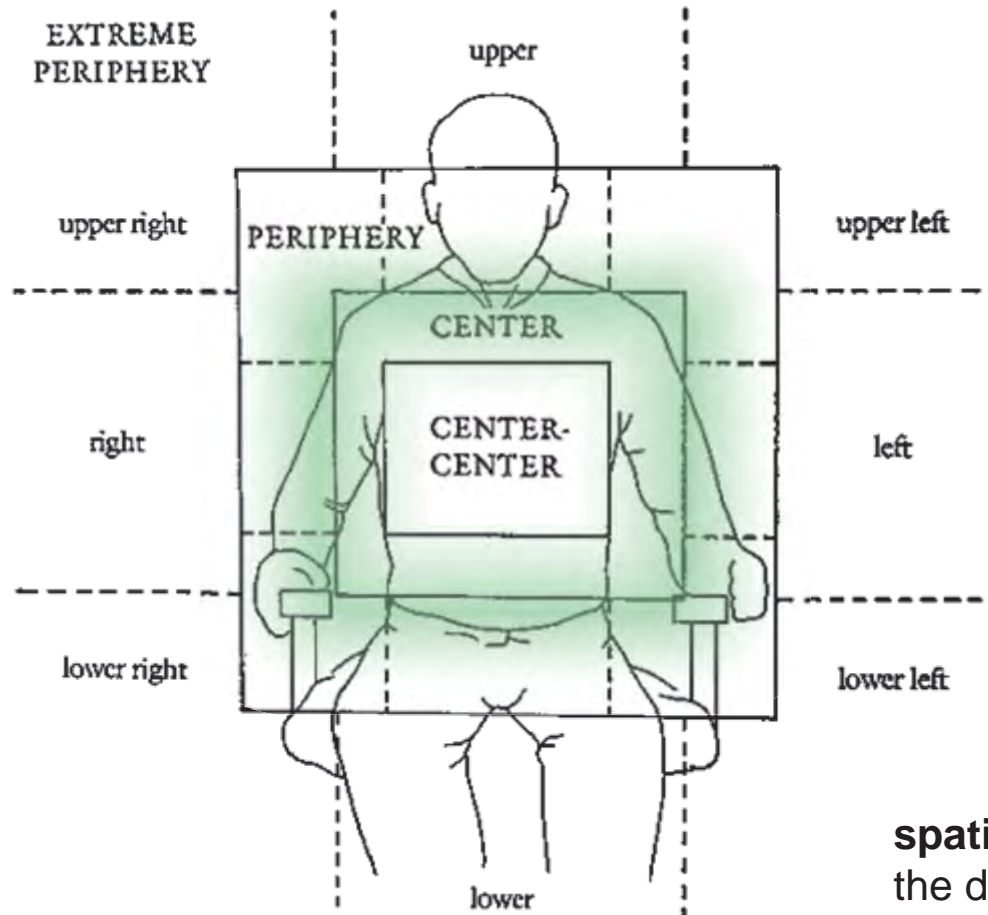
Gesture Space
(McNeill 1992: 86)

**Representational gestures
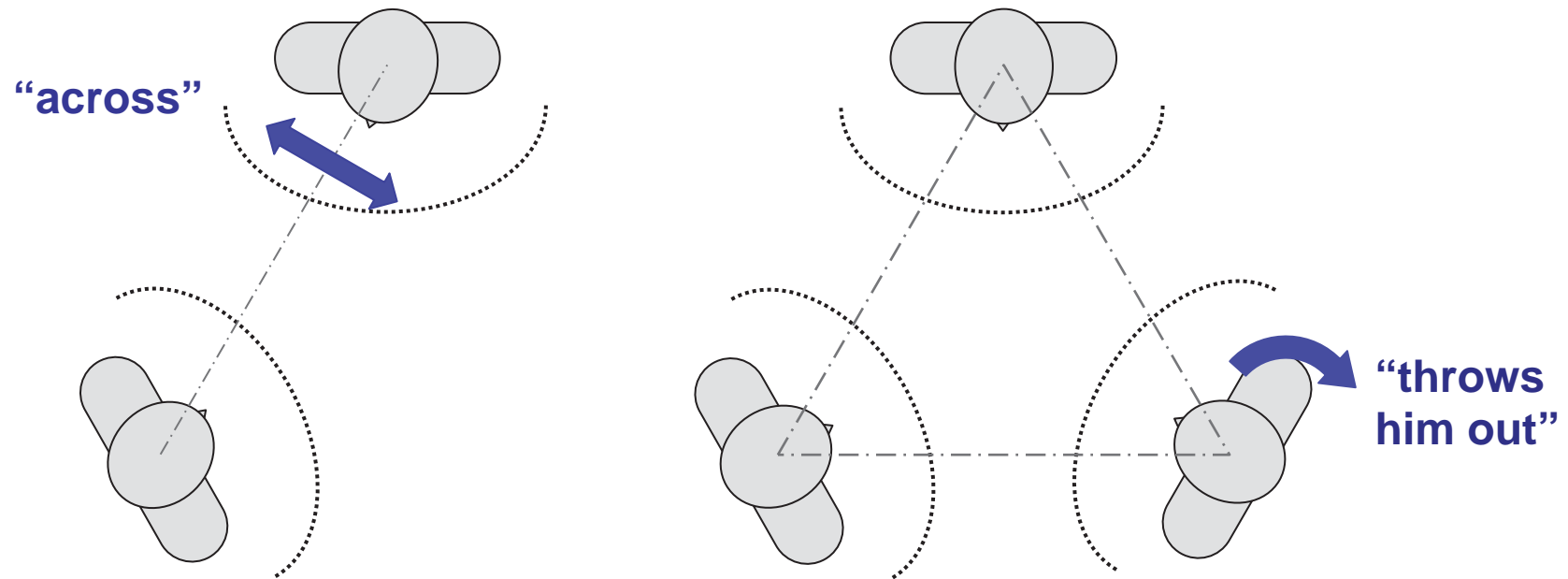(iconic)**

Gesture Space
(McNeill 1992: 86)

Pointing gestures (deictic)

spatially inflected in the direction of objects to which they refer
(Kendon 2004: 312)

Alignment of Gesture Spaces

(Özyürek 2000)

Viewpoint

Character-VPT
life scale
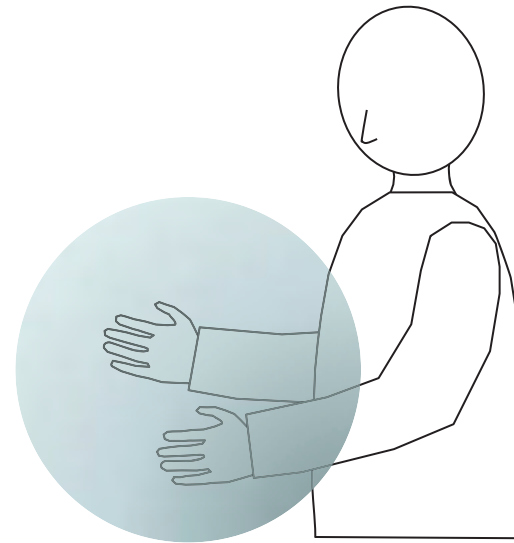mimetic
subjective characterizer

Observer-VPT
model scale
analytic
objective depicter

Situated Activity View of Gesture Space

Mutual Orientation

(Fricke 2007, Furuyama 2000, Goodwin 2000, Streeck 2009, et al.)

focal object

focal object
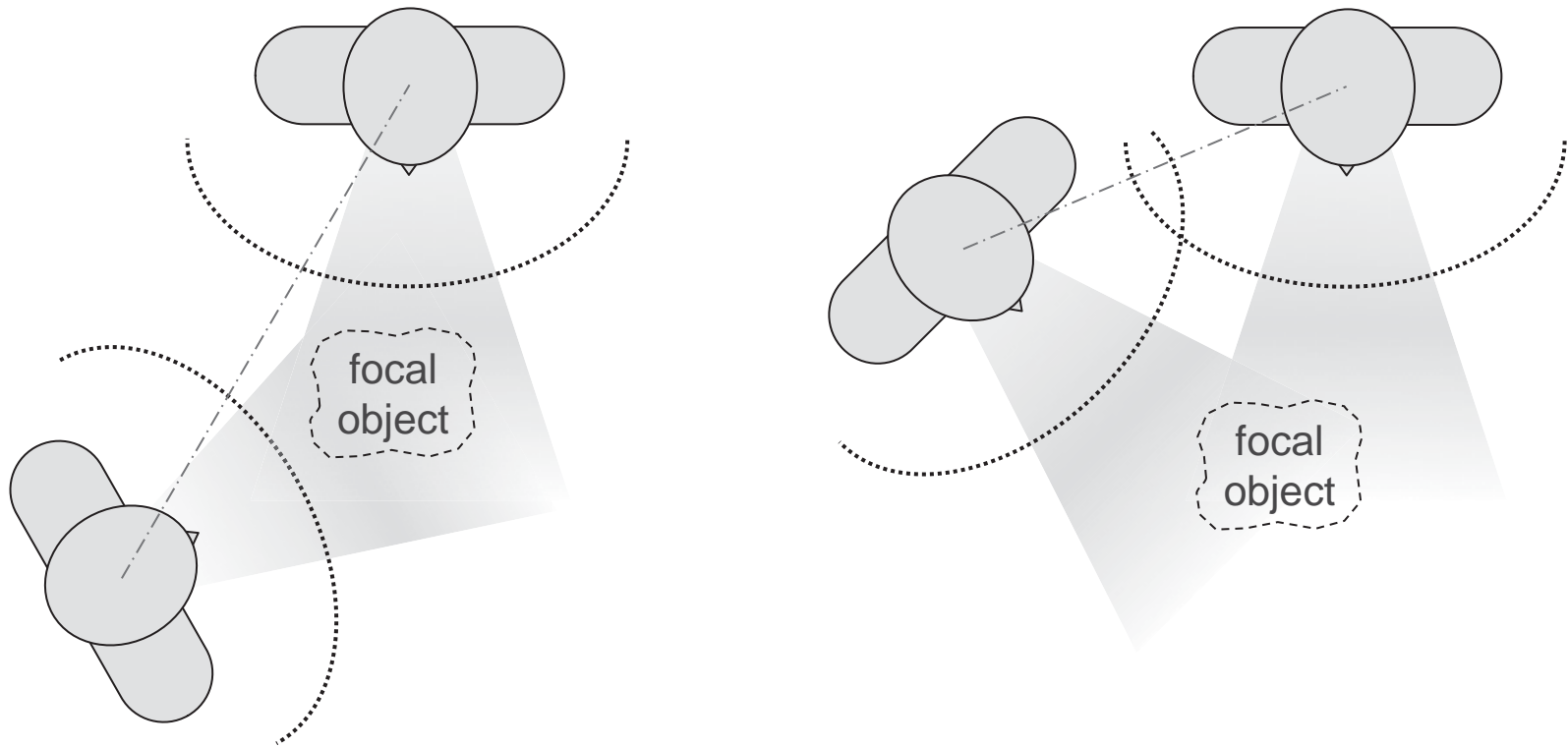
"**a multi-party interactively sustained space** that provides a framework for common orientation and the production of meaning" (Goodwin 2000: 88)

Mutual Orientation
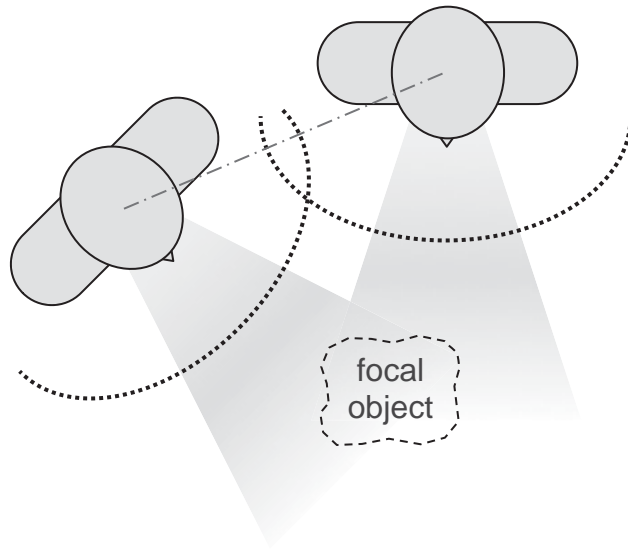
Orient toward:

- each other (faces)

- shared conception

- depiction in the air (or on a surface)

- inscription

- speaker's body (= other bodies)

- proximal object (in reach)

- distal object (in view or beyond)

- direction in space

Environmentally Coupled Gestures

(Goodwin 2007)

focal
object

Orient toward:

– each other (faces)

– shared conception

– depiction in the air (or on a surface)

– inscription

– speaker's body (= other bodies)

– proximal object (in reach)
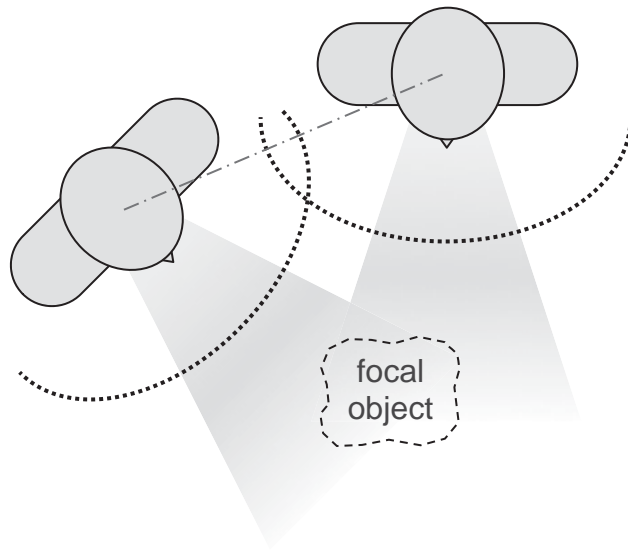
– distal object (in view or beyond)

– direction in space

Gestures "couple" with

Distributed Cognition

(Hutchins 1995, 2001, 2006, 2010; Williams in press)

- Cognitive processes involve the propagation of representational states across representational media (internal and external).

  - Humans make material patterns into representations by <u>enacting their meanings</u>.

  - Representational states are propagated by <u>bringing media into coordination</u> with one another.

  body (hands)

- Cultural practices orchestrate low-level cognitive processes to produce high-level cognitive outcomes.

A Functional System for Finding Cardinal Directions

Q: Which way is:
- north?
- south?
- east?
- west?

A: cardinal directions linked to local geography
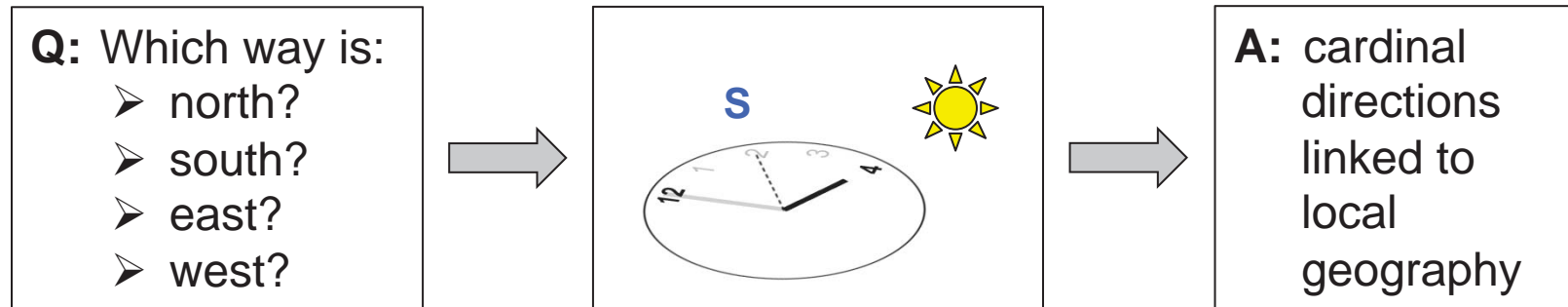
Steps
1. Hold watch flat (like a compass).
2. Align hour hand with sun.
3. Bisect angle with 12:00 => points **S**.

Limitations
- Northern hemisphere
- Sunrise to sunset
- Adjust for DST (13:00)

Material Structures
- Analog watch
- Visible sun

Cognitive Models
- Cardinal directions
- Clock time
- Bisecting angles

Brought into coordination through **body** *(eyes & hands)*

The Data

# The Communicative Situation

Location: Beach in Anglet, France

Time: 13:45 (1:45 pm)

Speaker: Lifeguard

Problem: Teaching other lifeguard (holding camera)
            how to use FS to find directions

Resources: Sandy beach
            Sun & surroundings
            Wristwatch (digital)
            Body
            Speech

Note: Speaker bisects angle with 14:00 rather than 13:00 DST.

What Needs to be Represented

- Elements:
  - cardinal directions
  - watch face
  - hour hand
  - reference (14h)
  - angle
  - bisector
  - *sun*
  - *surroundings*

- Sequence of Actions:
  1. Hold watch flat
  2. Align hour hand with sun
  3. Form angle with reference
  4. Bisect angle
  5. Trace path to surroundings to locate south
  6. Find other directions

S
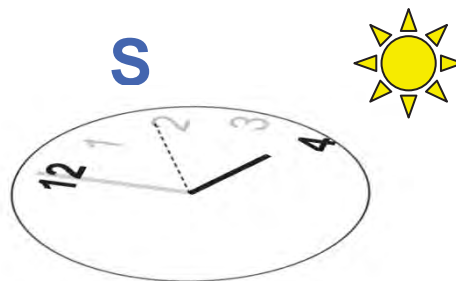
Four Gesture Spaces

Sand

Surroundings

Watch

Air (personal GS)

Different:
scales,
orientations,
affordances

Examples

1. Diagramming the System

you see, it is not this time here

It is, I dunno, it's…
<u>12</u> o'clock

the little hand

here, and then

the big one, you can forget

you imagine the

the second hand towards
14 o'clock

14 o'clock in summer and in
winter it's 13 o'clock

the bisector of this angle

here

in this case, if it's 14 o'clock

and 14 o'clock

the bisector is here

that gives you south

here you have the south

there the north

2. Re-representing in Different Spaces

you've got 7

[S: why have you got 7 there, why there?]

because your little hand

is here

when it's 19 o'clock
(when it's 7 o'clock)

you've got the little hand (on the 7)

the little hand is at the bottom

it is here

when it's 7 o'clock, in the morning, or 19 o'clock

you've got 1-2-3-4-5-6

the little hand, your little hand, it is…, it's at the level of the 7

in the evening

[rubs out 7]

when it is, when it's 19 o'clock

you've got the 7 here

3. Linking Spaces / Enacting Performance

At 16 o'clock it's about *there*
[S: yes]

when you have 16 o'clock,
when it's 16 o'clock,
for example

you extend

the little hand

so you turn

when it's 16 o'clock

it's on the 4

(taking off watch)
when it's 16 o'clock your
hand is on the 4…

the 4, well, you've got
the 3 here

and the 4 is about there

so you put your little hand…
toward there [S: yes]

your 14 o'clock

14 o'clock is here

you have the little hand

you've got it *there*

you have (the) second imaginary one that goes toward 14 o'clock

you've got it *there*

(the bisector of the two, so…) uh… you've got the angle

divide the angle

therefore there

the south

Summary

- Bodily action is structured by:

    - The demands of the **communicative situation** *(teaching)*

    - The elements and actions that compose the **functional system** *(what is being taught)*

    - The affordances of the available **representational media** (resulting in many **environmentally coupled gestures**)

    - (Monitoring of the swim area = another activity)

Summary

- Multiple gesture spaces:
    1. Sand: "human scale," inscribable, durable, yet immobile
    2. Watch: small, repositionable, "stands for" analog watch
    3. Surroundings: given, circumscribe area, beyond reach
    4. Air / Personal GS: "human scale," (vertical), conventional

- Linked by:
    – Analogy (for re-representations)
    – "Transposed" gestures (maintained handshape, repeated form)
    – Gesture holds + head/gaze shifts (e.g., from watch to horizon)
    – Gestures that cross space boundaries (e.g., sweeping hand)

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