

Conceptualising the sense of movement and kinaesthetic
flow in gesture-based interfaces

Your Move





Thinking about moving bodies

1. Phenomenology and after:

Husserl, Merleau-Ponty and the centrality of the kinaesthetic body

2. Visceral viewing and screen-based media:

e.g. Sobchack, Marks, Barker

3. Haptic ethnographies:

Writing on/of the kinaesthetic and proprioceptive body, e.g.
McCormack, Downey, Paterson

4. Recent theories of embodied cognition:

'Action in Perception' and extended mind, e.g. Clark, O'Regan, Noë,
Gallagher



1. Phenomenology and movement

Husserl, 'I think' vs. 'I can'

Breaking with representational model *cogito*, 'I think'

Body as centre of orientation and movement

The 'I can' of a corporeal, kinaesthetically functioning being

Double movement:

Localisation of kinaesthesia and tactile-haptic system

(*Leib*) ... as precondition for the constitution of body as object (*Körper*)

e.g. one hand touching another

1. Phenomenology and movement

Husserl, 'I think' vs. 'I can', breaking with *cogito*:

Among the ... bodies (*Körper*) of this nature I then find uniquely singled out my body (*Leib*) ... the only one in which I immediately have free rein (*schalte und walte*), and in particular govern in each of its organs —. I perceive with my hands, touching kinesthetically, seeing with my eyes, etc., and can so perceive at any time, while these kinestheses of the organs proceed in the I am doing and are subject to my I can; furthermore, putting these kinestheses into play, I can push, shove, etc., and thereby directly, and then indirectly, act corporeally (*leiblich*). (Crisis. p.97)

1. Phenomenology and movement

Merleau-Ponty, the spatiality of one's body:

extension of Husserl's kinaesthetic intentionality into an anticipative stance

through a "motor intentionality" (1992:110) that resolves figure from ground

allows M-P to talk of getting a 'grip' on a situation or context

body as "a system of possible actions" (1992:250) with an everyday anticipative stance (motor intentionality)

1. Phenomenology and movement

Merleau-Ponty, the spatiality of one's body:

my body is geared to the world when my perception offers me a spectacle as varied and as clearly articulated as possible, and when my motor intentions, as they unfold, receive from the world the responses they anticipate. This maximum distinctness in perception and action defines a perceptual ground... a general milieu for the coexistence of my body and the world. (1992:250)

[cf: Dreyfus' maximal grip]

2. *Visceral viewing*

Phenomenology and screen-based media

Antonia Lant: 'haptic cinema'

Vivian Sobchack:

- reincarnating cinema
- the film viewer's lived body (*Leib*)
- proprioceptive loss (Sacks, Cole, Gallagher) and prosthesis
- feeling disembodied, bodily imagination, body schema (from M-P)



2. *Visceral viewing*

Moving image, moving body

Laura Marks: 'haptic visuality':

- Touch evoked visually (cross-modal perception)
- Ineffability of touching and feeling, difficulty of representation, limitations of medium
- Role of mimetic technologies in opening up visual-haptic, memory, sensorium



3. Haptic ethnographies

The difficulties of transcribing somatic sensations

The starting point. Crang 2003:

“whether methods often derided for being somehow soft and ‘touchy-feely’ have in fact been rather limited in touching and feeling”



Touchy-feely vs. haptic knowledges

3. *Haptic ethnographies*

Standardising the lexicon

Sherrington 1906: 'proprioception'

Boring 1948: 'somesthesis'

Bell 1826: 'kinaesthesia' (generalised muscle sense, inc proprioception)

Gibson 1968: *interoception vs. exteroception*
framework of space a 'perception',
awareness of axis of body as a
'proprioception'

3. Haptic ethnographies

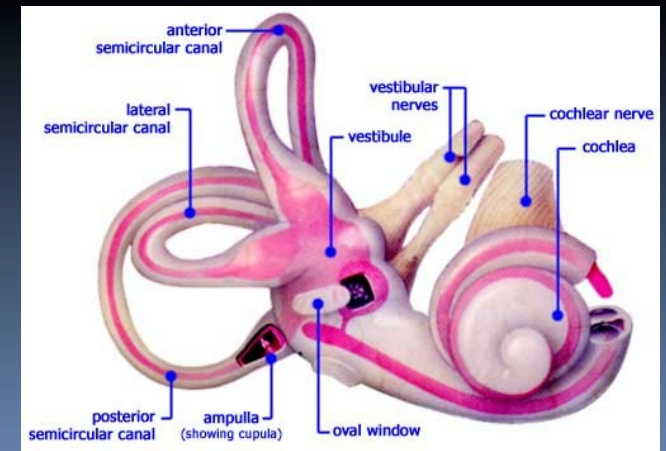
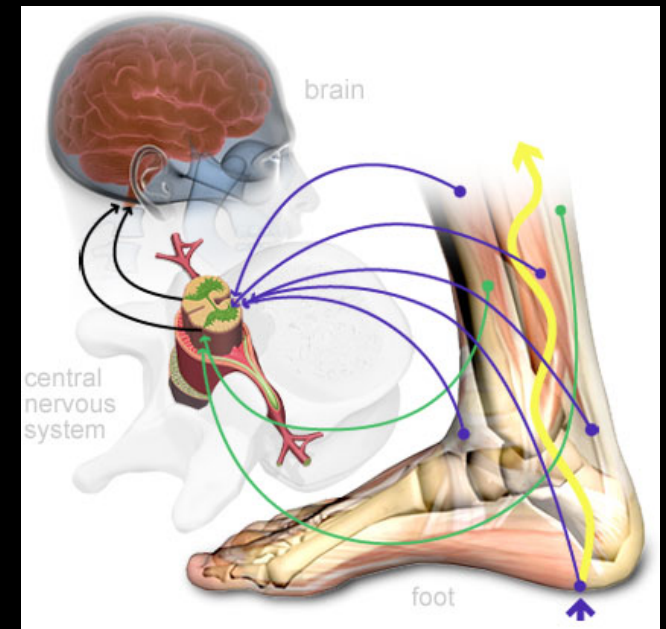
Vestibular system: inner ear, balance

Otoliths in cochlea sense linear accelerations, perceive inertia & “bodily postural equilibrium” (Gibson 1966)

Not a distinct ‘sense’

Feedback from visual (oculomotor) perception: vestibular-ocular reflex

Deborah Bull, *The Dancer's Body*



3. Haptic ethnographies

Returning to the senses in fieldwork

Crang 2003: body 'as an instrument of research'

Ineffability, attempt to 'grasp' ongoing, embodied experiences in different ways

Lorimer (2005) 'sensuous dispositions' within nonrepresentational theory (NRT)

alteration of human sensorium through new technologies & techniques offers "changes in the way in which the body 'talks' and is addressed" (Thrift 2004)(+ Ash!)

3. *Haptic ethnographies*

Writing the feeling of doing. Implications for fieldwork

1. *Senses*. Augmenting trad. ethnographic methods through introspective 'reporting back' of sense returns [somatosensory lexicon]
2. *Sensuous dispositions*. 'Making sense', apparently prediscursive 'expressive and sensuous engagement with space', grasping that 'feeling of doing' (Crouch) [NRT]
3. Evoking complex, irreducible somatic sensations through poetic sensibility, cross-modal metaphor e.g. Guerts' *seselelame*, enfolded analyses of gait, posture, movement and idiom) [deep ethnography]

4. *Embodied cognition*

Embodied Mind Thesis [EMT]:

Varela, Shapiro, Gallagher, Clark (extended mind)

No 'body neutrality' (Shapiro), contra Merleau-Ponty

Vision embodied, therefore always ocularmotor
(e.g. saccades)

O'Regan & Noë: *enactive* approach to perception
'sensorimotor contingencies' – knowledge of the
effects of movement on sensory stimulation

4. Embodied cognition

Against body neutrality...

If perception is in part constituted by our possession and exercise of bodily skills... then it may also depend on our possession of the sorts of bodies that can encompass those skills, for only a creature with such a body could have those skills. To perceive like us, it follows, you must have a body like ours (Noë 2004:27)

'How the body shapes the mind' (Gallagher)

4. *Embodied cognition*

- Conscious state alters sensorimotor contingency, alters content of sensory experience by changing the form of interaction (states of motor readiness)
- Anticipative action-in-perception: alters the way the next stimulus is received
- Cf. Merleau-Ponty's motor intentionality