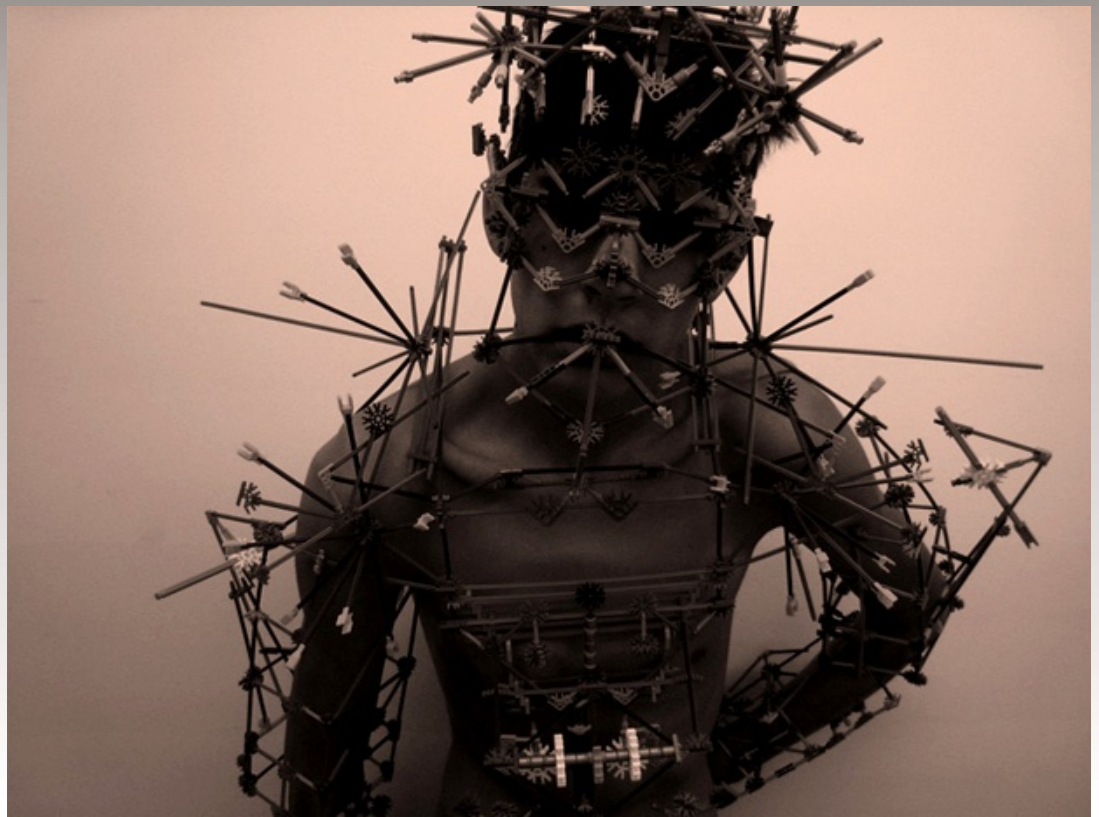
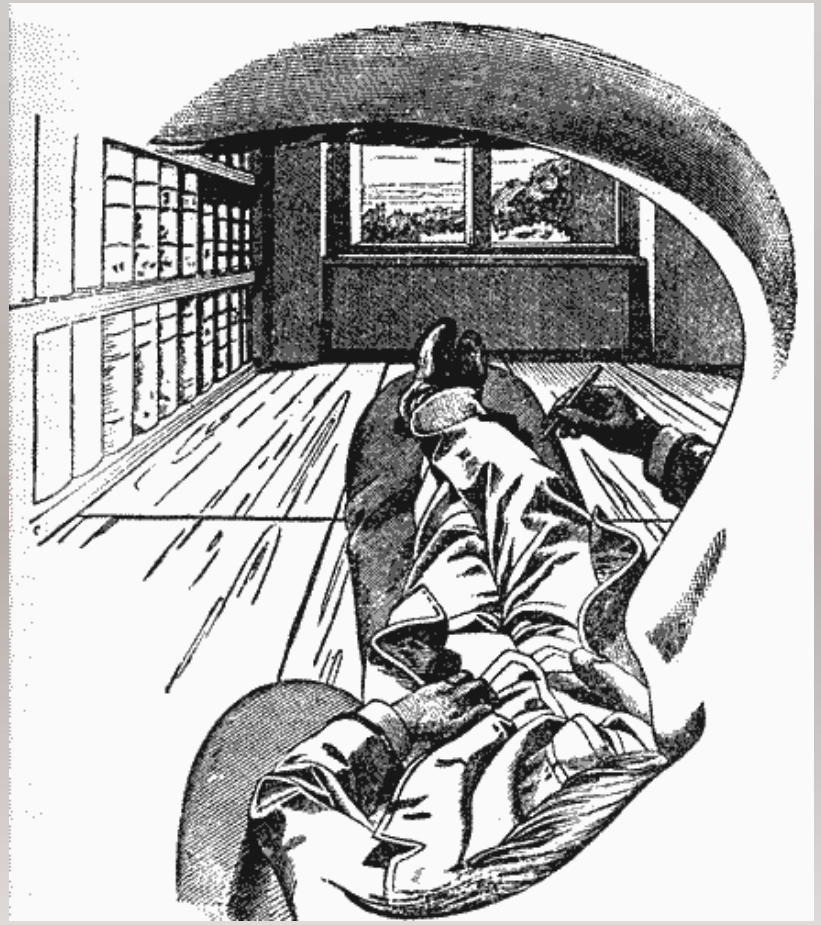
Philosophy of Interactivity

Phenomenology and Technology



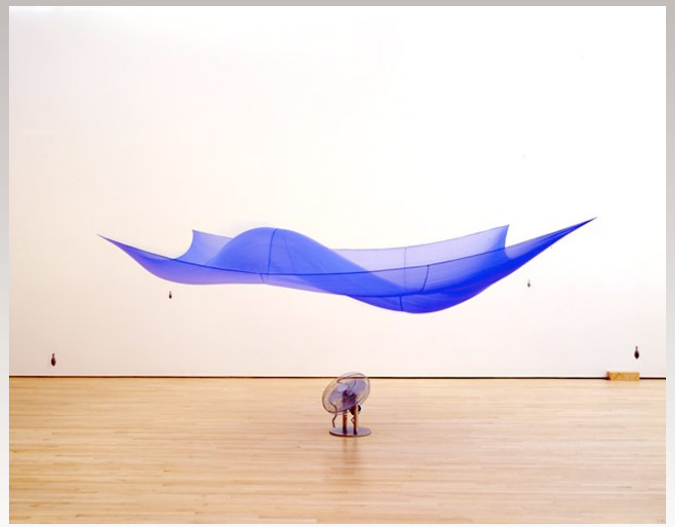


*Ernst Mach

Phenomenological approach

The main intent of this phenomenological approach is to examine human actions as they appear to consciousness.

This **phenomenology**, like the more inclusive pure **phenomenology of experiences** in general, has, as its exclusive concern, experiences intuitively sizable and analysable in the pure generality of their essence, not experiences empirically perceived and treated as real facts, as experiences of human or animal experiments in the phenomenal world that we posit as an empirical fact. (Husserl, 1913, p.249)



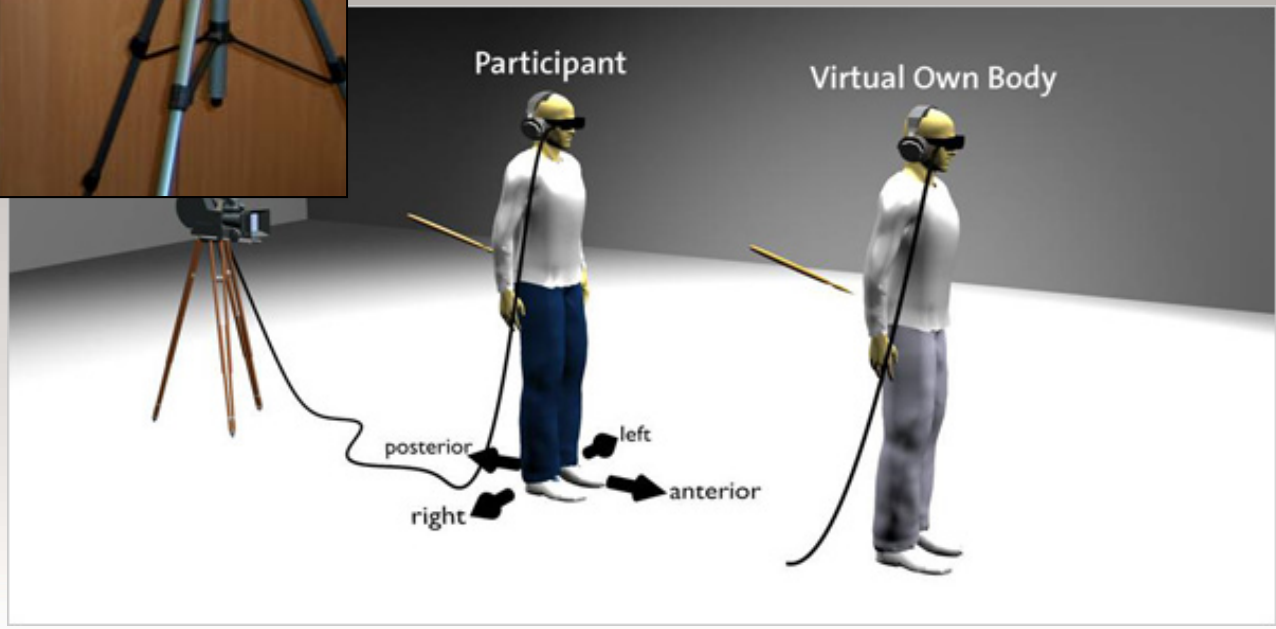
Driving Experience

Experience drivers may find that they arrive at their destination with no memory of having driven there at all

Henrik Ehrsson‘ s Experiment
VIRTUAL OUT OF BODY EXPERENCE
(2007)

Click here to see the video.

Click here to see the video



Phantom Limb Phenomenon

Phantom Limb +Virtual Reality

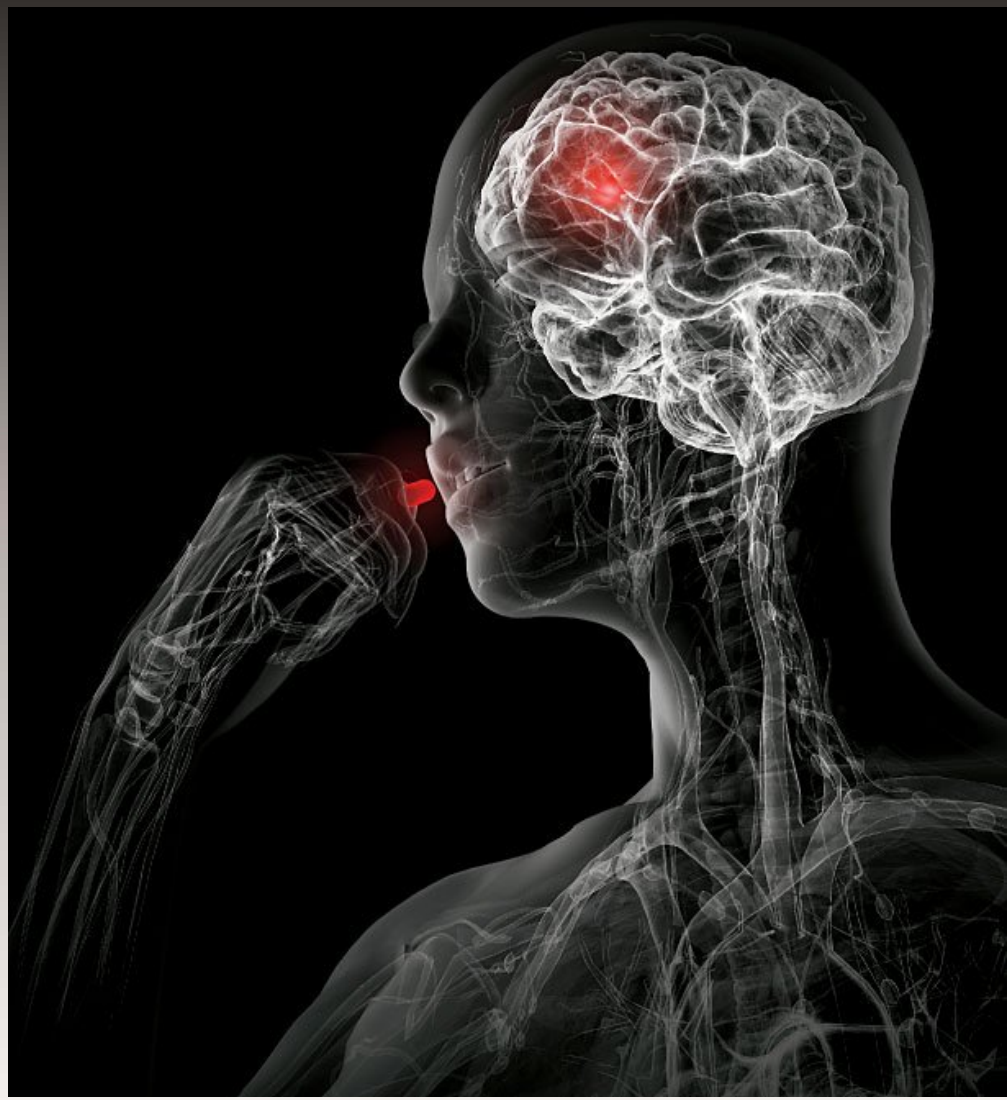
A **phantom limb** is the sensation that an amputated or missing limb (even an organ, like the appendix) is still attached to the body and is moving appropriately with other body parts. Approximately 5 to 10% of individuals with an amputation experience phantom sensations in their amputated limb, and the majority of the sensations are painful.

Mirror Box

Placebo Effect

A **placebo** is a sham medical intervention. In one common placebo procedure, a patient is given an inert *sugar pill*, told that it may improve his/her condition, but not told that it is in fact inert.

Such an intervention may cause the patient to believe the treatment will change his/her condition; and this belief does indeed sometimes have a therapeutic effect, causing the patient's condition to improve.



Martin Heidegger

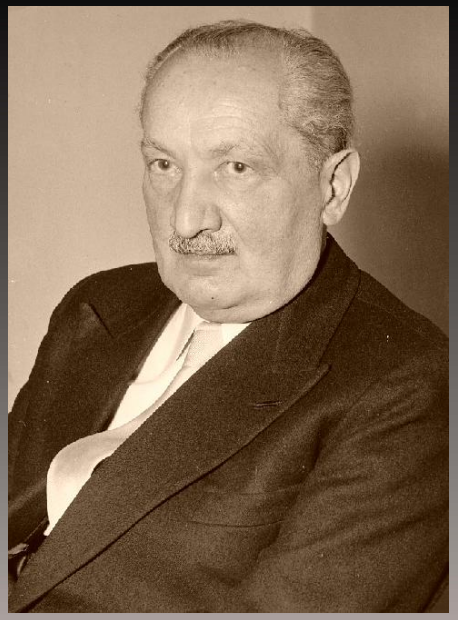
Martin Heidegger was one of the most original and important philosophers of the 20th century, but also the most controversial.

Being and Time

(Sein und Zeit, 1927)

The Question Considering Technology

(lectures in 1949, first published in 1954)



Heidegger and Technology

Heidegger's concept is one of the original comprehensions of object-oriented ontology, which has been rethought by many scholars since (Schultz, 1932; Merleau-Ponty, 1962; Ihde, 1979; Harman; 2002) and also applied in practice (Winograd and Flores, 1986).

Heidegger and Technology

Technology: as Equipment, Thing and Tool

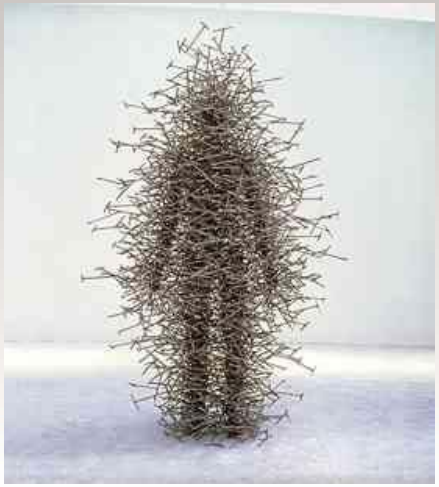
Heidegger's philosophy most frequently relies on a hermeneutic approach within a particular rhetoric

The primary approach of Heidegger's tool argument arises from questioning the meaning of 'Being'.

Dasein/Essence of the Being

Heidegger asserts that *Dasein* means 'Being-in-the-world' as it occurs in the present;

Essence of Being is *a priori* 'within-the-world'; it is independent of the knowledge of physical representation



Tool is invisible

The common idea of Heidegger's concept of tool is that there is a distinction between **what a person does with a tool** and the manner in which a person **thinks about a tool.**

In applying the tool it **becomes invisible to its users** during its implementation, thus becoming an extension of them.

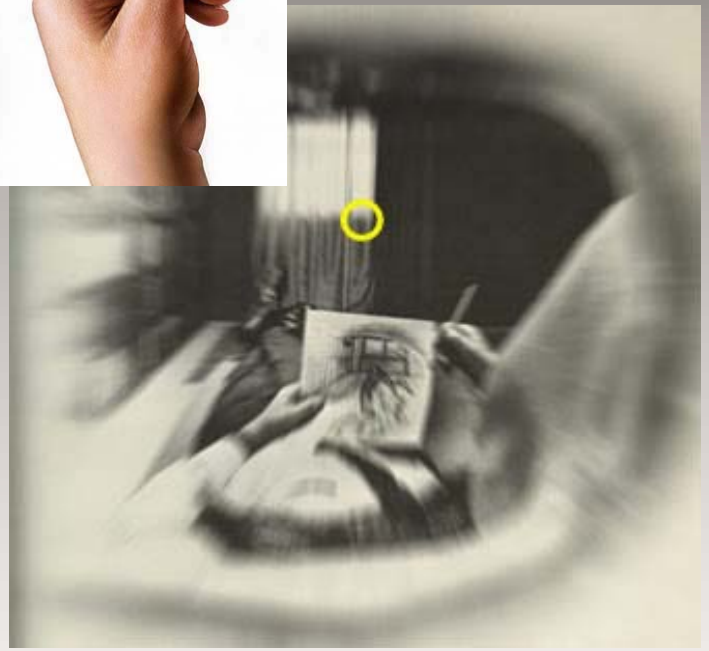
Essence of Technology

Because the essence of technology is nothing technological….
(Heidegger, 1977 [1949/54])

ready-to-hand

The technology disappears in one's hand as the **user focuses on the immediate performance of the tool**.

Heidegger terms this condition of the tool as '**ready-to-hand**' (*Zuhandenheit*) because the tool, through the experience of the user, is fused with the body.



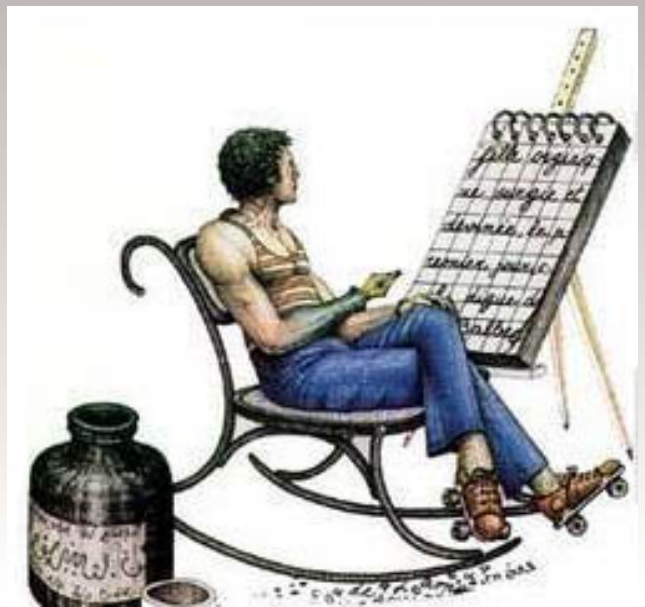
present-at-hand

In order to return the tool's presence as an object and making the user aware of it, its functionality must be damaged.

A broken hammer loses its functionality and becomes what is described in Heideggerian terminology as being '**present-at-hand'.**

Invisible Tool

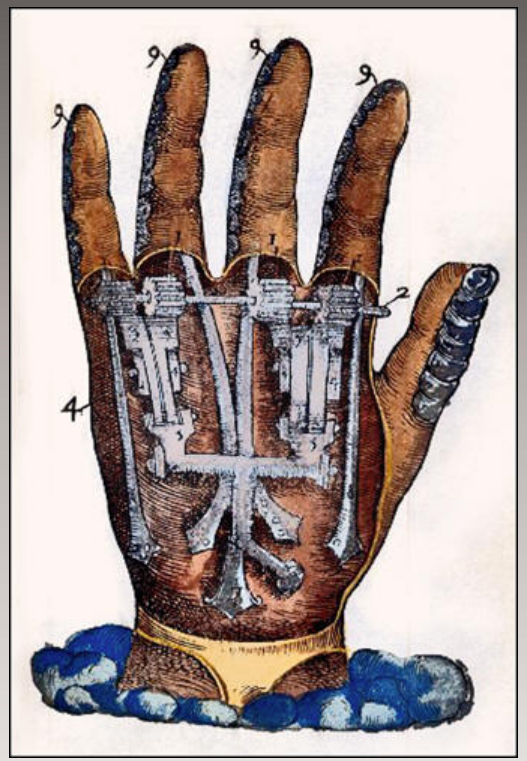
The **objective** presence of the tool only occurs if it breaks during its application. Thus, the terminology of '**invisible tool**' (Zics 2008), proposes an approach which understands **technology** not according to physical qualities but to an **immaterial, experience based approach**.



Applying Heidegger's object-oriented ontology to contemporary technology

'I act through the mouse; the mouse is an extension of my hand as I select objects, operate menus, and so forth. The mouse is, in Heidegger's terms, ready-to-hand. Sometimes, however, such as when I reach the edge of the mousepad and cannot move the mouse further, my orientation towards the mouse changes. Now, I become conscious of the mouse mediating my action, precisely because of the fact that it has been interrupted.' (Dourish, 2001, p.109)

HEIDEGGER's Invisible Tool



Phenomenology of tool implementation

Experience based methodology

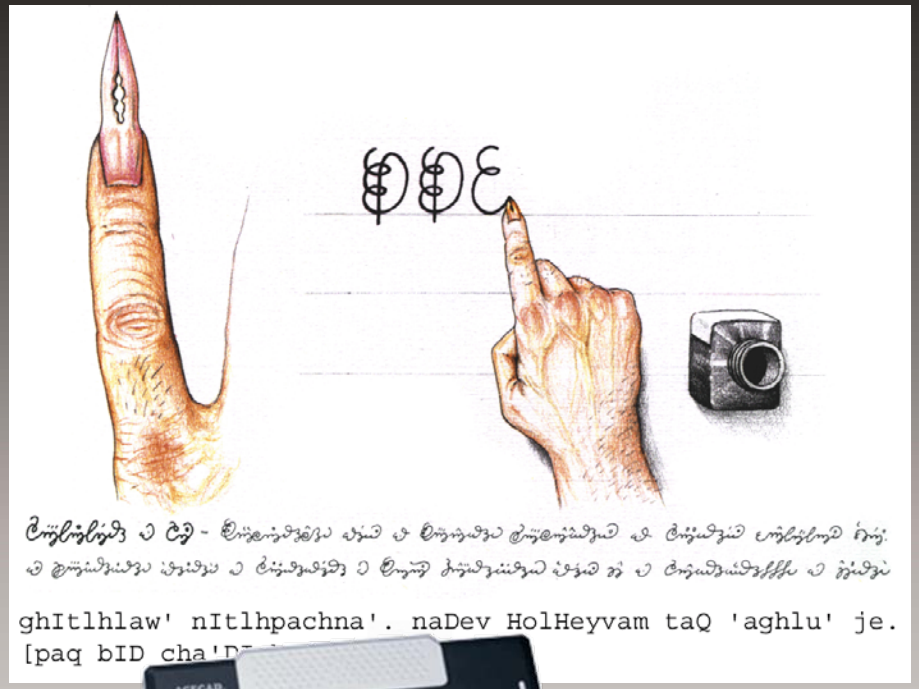
'ready-to-hand'-'present-at-hand'

Essence of technology

Technē: 'art, craft'

Art as saving power

Embodiment/Disembodiment



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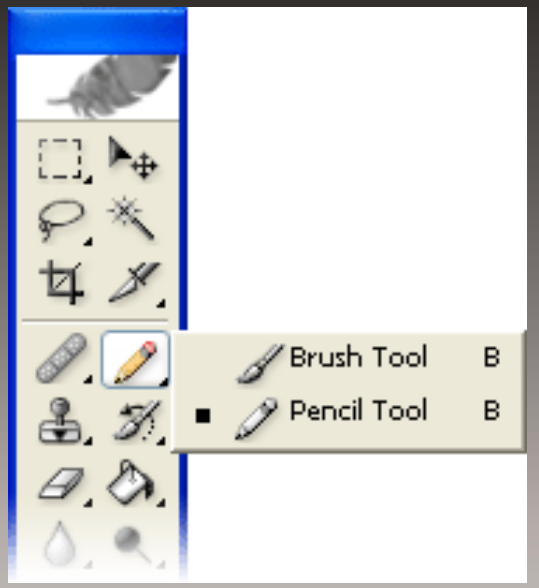


Heidegger's hammer

Ihde's chalk (Experimental Phenomenology) ,

Merleau-Ponty's gun

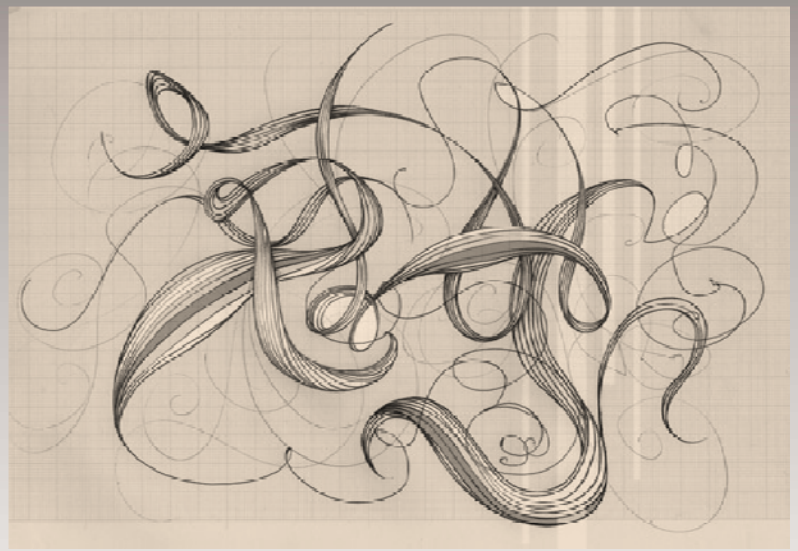
Kay's tennis racket

Heidegger Applied

Don IHDE

Paul DOURISH

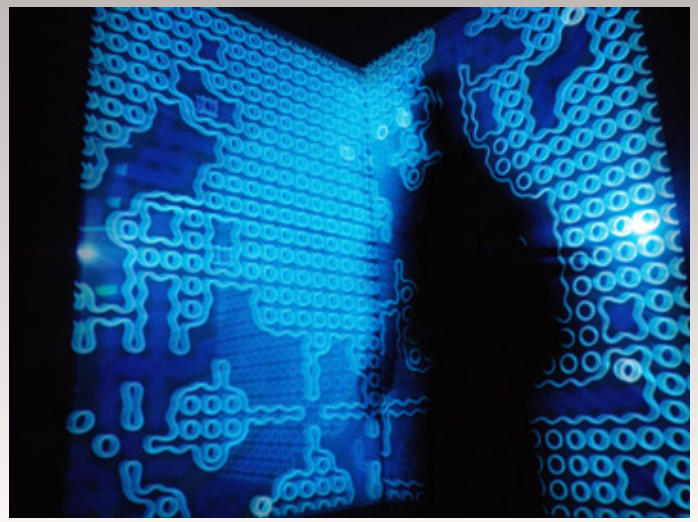
1.
Embodiment as Knowledge Production



Paul Dourish (2001): Embodied Interaction

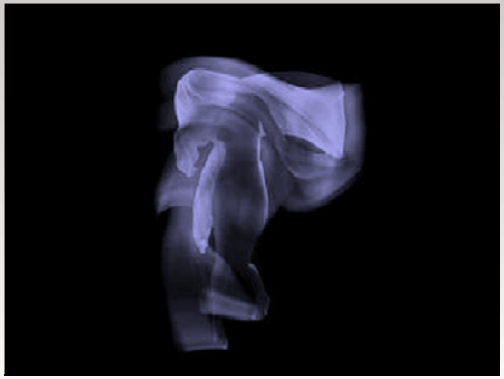
Embodiment is not a property of systems, technologies, or artifacts; it is a **property of interaction.** It is rooted in the ways in which people (and technologies) **participate in the world… (recalling experimental knowledge)**

Paul Doursih



Bodily Action as Meaning

- Our actions cannot be separated from **meaning,** which both makes our activities meaningful and is itself transformed by them.
  - Embodiment is about engaged action rather than disembodied cognition; it is about the particular rather than the abstract, practice rather than theory, directness rather than disconnection. (Dourish, 2001, p.189)



Don Ihde: Embodied Relations (1979)

- Don Ihde (1979) characterizes **the machine–man interaction** as 'embodied relations' :

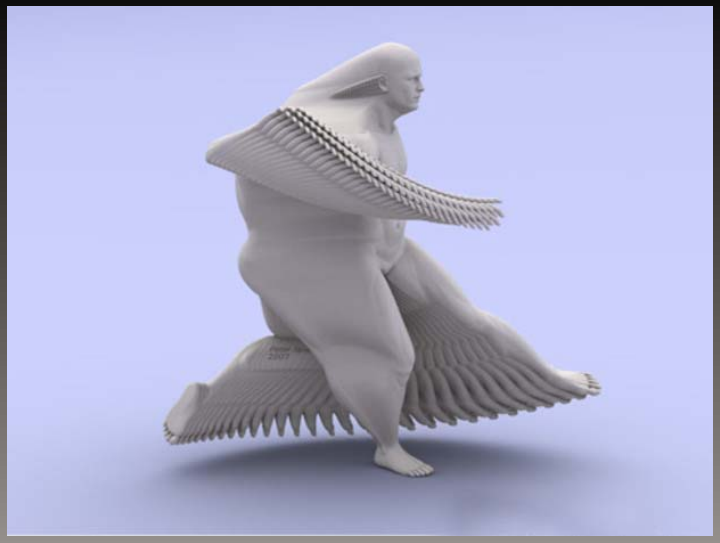
'With this we have one type of **human-machine relation**, an experience through machine. The correlation structure of intentionally remains, in that **I do experience something other than the machine being used,** and at the same time, **my experiencing is extended through the machine** for that intentional fulfilment.'

Ihde's Chalk

I may thus describe the chalk as having partial transparency relation between myself and what is other. And in fact, the better the machine, the more 'transparency' there is.' (Ihde, 1986, p. 141)

This proposes that experience-based knowledge is saved in the memory and can be recalled by the same bodily action.

For example, the learning process of driving becomes embodied knowledge and therefore the car can disappear for its user.



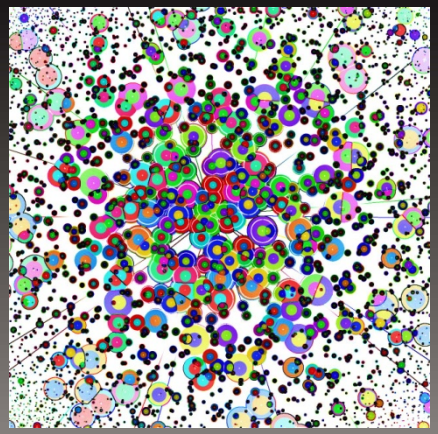
In this manner, ‘embodied design’ develops a particular understanding of interaction that suggests interfaces can be designed in a way that produce a balance between the process of recalling experience-based knowledge and the learning process of the tool (interface).

Ihde's critique on Heidegger

The main intervention of Ihde's experimental phenomenology is that he revises Heidegger's concept through qualities of man-machine interaction.

Critiquing Heidegger's concept as it only accounts for two conditions of tool implementation as being in usage (ready-to-hand) or broken (present-at-hand), Ihde points out that the tool is not only a perceptual extension of the human but is based upon **learned relations,** which means humans inhabit tools by using technology.

→ He explains these **embodied relations** between man and machine as a quality of the tool's readiness in interaction, displaying its diverse grades of transparency.



Ihde's conception of embodied relations focuses on the condition of the user; that is, how far one can recall knowledge related to the particular experience.

This explains how invisible the tool is to the users, defining a cognitive quality of the tool-usage.

2.
Embodiment as Transformation of Body awareness

Transformation of Body awareness

…is '**an existential condition in which the body is the subjective source of inter-subjective ground of experience**'
(Csordas, 1999, p.181)

Embodied Being

- ‘The medium of immersive virtual space or virtual reality – as it is generally known – has intriguing potential as an **arena for constructing metaphors about our existential being-in-the-world** and for exploring consciousness as it is experienced subjectively, as it is felt’ (Chair Davis 2001, p.293)

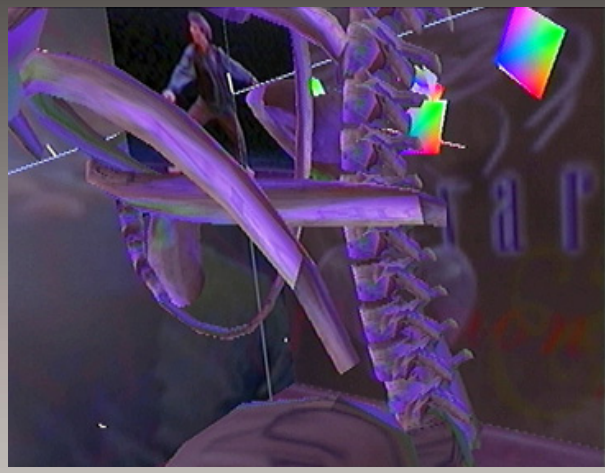
- **The embodied being is a virtual embodiment of the user.**

Disembodiment

- It is a state of consciousness in which **body awareness** produces a novel articulation of the body.
- Dissolving the awareness of biological body.
- New agency for body. For example: avatar (the embodiment of the user) in the virtual reality

Disembodiment in Virtual Reality

'Yet as experience immersion in the simulation, I simultaneously lose the sense of being grounded in physical space, I experience the sensation of **disembodiment.** However, my body still remains in the physical realm, constrained by the apparatus and tracking range. **The sensation of disembodiment cannot be disconnected from the sensation of embodiment, physicality, groundedness.** I lose the sense of which environment my body exist in. The problematizes my experience, since the sense of being grounded is usually primary to a dancer's experience [dervish dancer who performances spiritual practice]'. (1996, Gromala & Sharir, p.284)

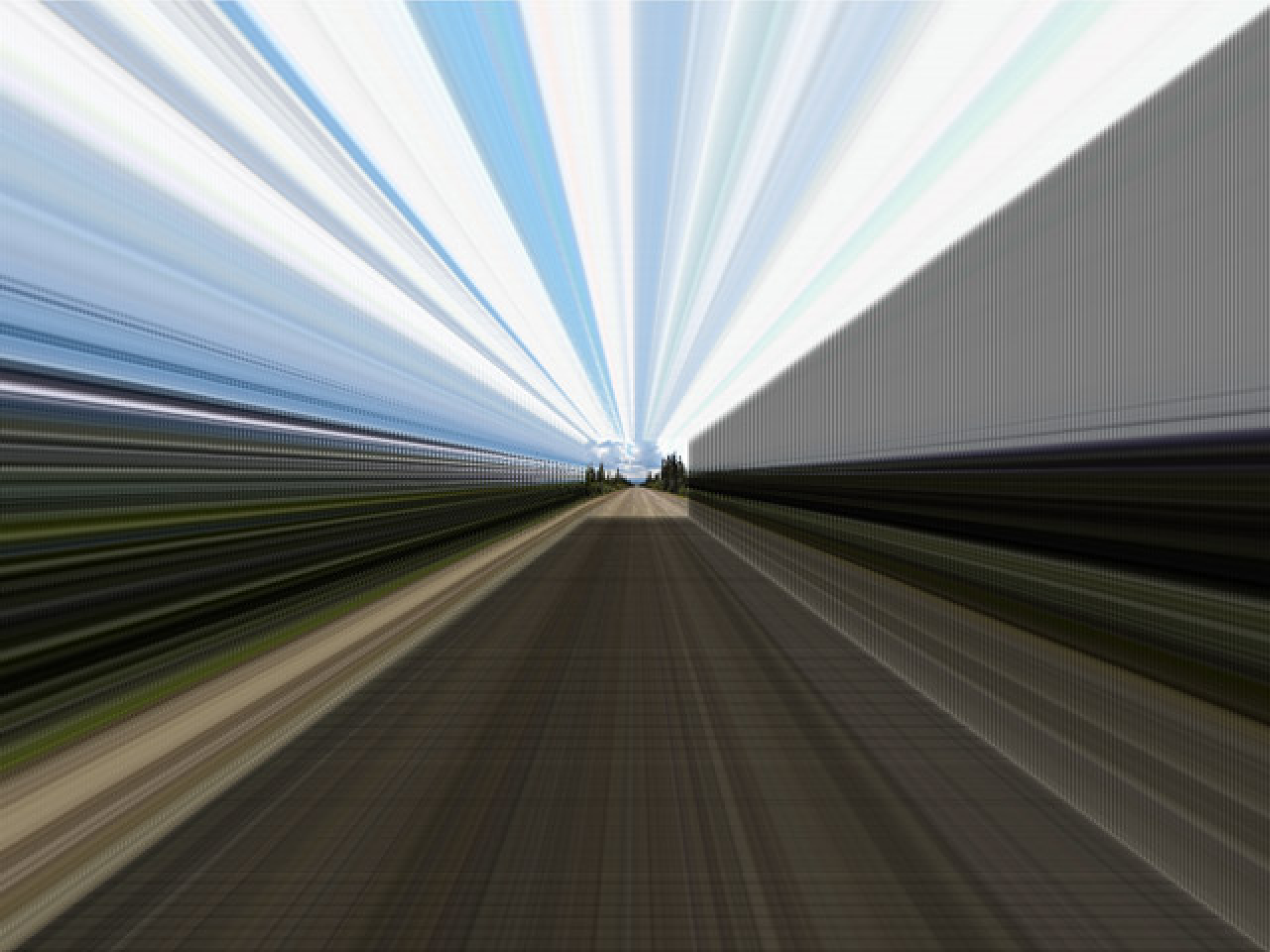


- *Diana Gromala's and Yacov Sharir's virtual environment of ' Dancing with the virtual dervish: virtual bodies' (1994-99) with interactor*

Embodiment←→Disembodiment

'…virtual tools cease to be external objects and become part of our phenomenological corporality, just as the blind man's stick becomes an extension of his sensorial activity. Consequently, the construction of self in cyberspace follows an alternative mode of 'embodiment'…the mind and body become one in order to pursue a unified goal, and if either is missing, the result is the non-existence of the experience. So however we might say it, in cyberspace one is, in effect, embodied in one's disembodiment. The body in this context is no longer seen as the obsolete object or the inert container of the mind, but an integral entity, which is reassigned with an indispensable role, that of the medium.'

(Ajana, 2005, np.)



IMMERSION

Immersion

Many of theories conceptualise the specific experience of interaction as immersion (Grau, 2003; Wolf & Perron; 2003; Bartle, 2004

Immersion is often defined as an: '…absorption in an activity or condition' (Shorter Oxford English Dictionary, Fifth Edition, 2002, p.1322) which specifically refers to a condition of cognition

Immersion

Interaction with computer generated 'multi-sensory representation' provides the feeling of total 'immersion' through 3 D imagery, sound and tactile sensation. The ability to manipulate objects in the virtual reality environment, change view and interaction (such as float above the floor, and move through objects) provides the sensation of total autonomy (Huff, 1992, p.13)

Immersion

Virtual reality is a kind of total immersion in computer simulated time and space made possible by highly sophisticated hypermedia that place an individual ‘inside’ of computer-generated world. (Shore, p.145, 1996)

Immersion is defined as '**the experience of being physically immersed within a virtual environment experience**' (Blade & Padgett, 2002, p.20).

Immersion is a cognitive state of human when every faulty of the person fixed on one phenomena. More closely, immersion is a contemporary notion of interactive media especially virtual realities (VR).

Immersion

Oliver Grau (2003) in his book of Virtual Art: From Illusion to Immersion describes the notion contextualize in technology based art :

‘Immersion can be intellectually stimulating process; however, in the present as in the past, in most cases immersion is mentally absorbing and a process, a change, a passage from one mental state to another. It is characterized by diminishing critical distance to what is shown and increasing emotional involvement in what is happening.’

(Grau, 2003, p.13).

Immersion

Further Grau lays down as main characteristic of immersion:' As a general rule, one can say that the principle of immersion is used to withdraw the apparatus of the medium of illusion from the perception of the observers to maximize the intensity of the message being transported. The medium becomes invisible (Grau, 2003 p. 349).

?


Just half a cuppa!