RETRO!

welcome to the rollercoster ride!

WEARABLES
ART
AUGEMENTED REALITY
ART
HUMAN ENHANCEMENT
ART

LAURA BELOFF

Course: Navigating Transdisciplinarity 2021
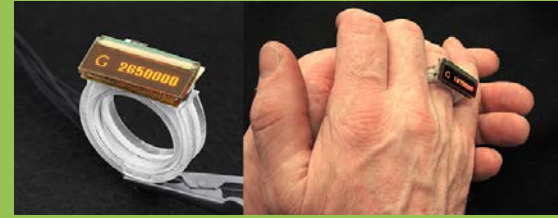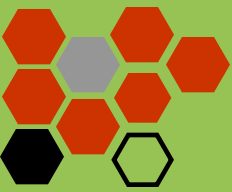
Beloff –> wearable (technology) art

Wearable = "capable of being worn"

nymi Fabrichii von Aquapendente.
Ganzkörperprothese, Illustration in: Opera chirurgica, Patavii 1647, 30,5 × 20 cm

Overview on the development of wearable technology that is one area of pervaisive and perusaisive technology.

It was for me interesting to take a bit 'retro' look into this area. The last 10 years is more/less missing from the talk –
 while listening, think of what has become of these developments today? What is 'new' today?

Questions to be answered during the talk
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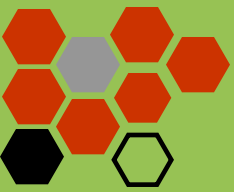
Wearable technology; unified field?

-Wearable Computing.

OQO Computer

Bluetooth Keyboard

HMD Pocket

HMD Controller

Approach 1:
- wearable computing
- functionally oriented, purposefully defined tasks
- aid for humans

- health sector
- sports
- life style

Approach 2:
- connection to the traditions of fashion and textile
- craft emphasis (DIY, etc)
- design objectives

Barbara Layne 2007 'Tornado Dress'

Approach 3:
- emerging within the arts
- critical approach towards the field
- distinctly own criteria
- aiming for experience and commentary
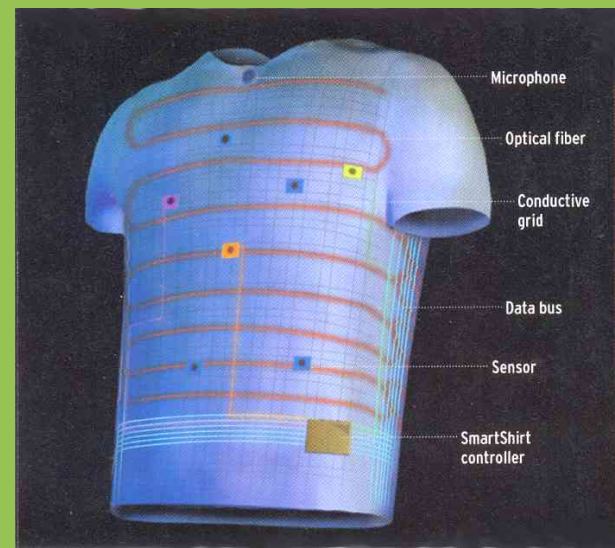
Troikart 2003, Exploded Monologues

+Various other approaches: e.g. wearables designed for performances / theatre, etc.
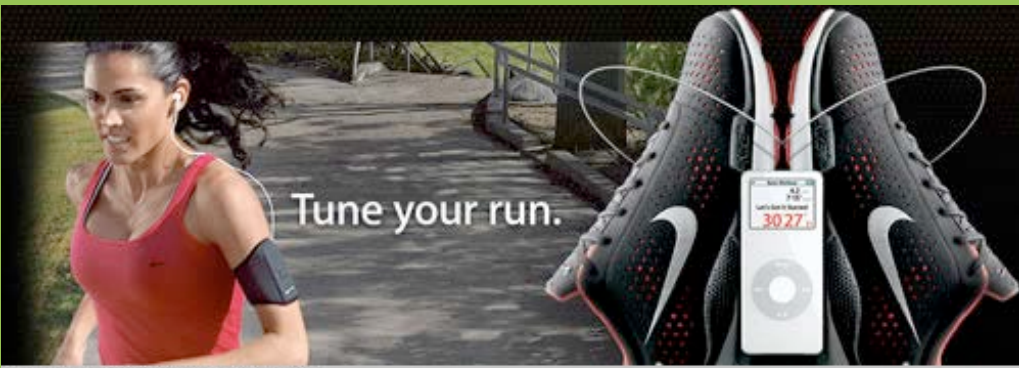
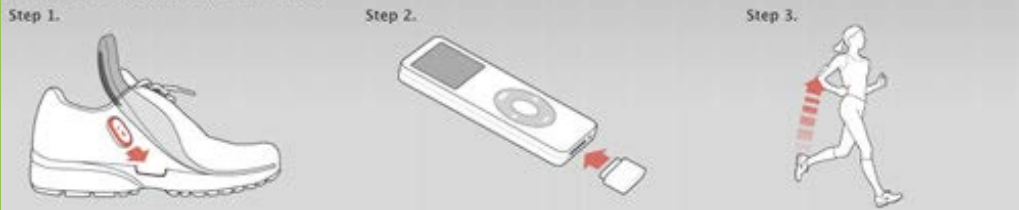+ smart and intelligent materials and objects

engineering WEARABLES

Sensatex Shirt 2001>>

Xybernaut 2001

Nike / iPod, 2006

engineering WEARABLES

Steve Mann's "wearable computer" and "reality mediator" inventions of the 1970s have evolved into what looks like ordinary eyeglasses.

(a) 1980 (b) Mid 1980s (c) Early 1990s (d) Mid 1990s (e) Late 1990s

In his book Cyborg (2002), Mann writes that he has literally "become computer, camera, telephone, videophone, and, of course, myself –all in a single entity"

EyeTap-technology Steve Mann (photo 2009)

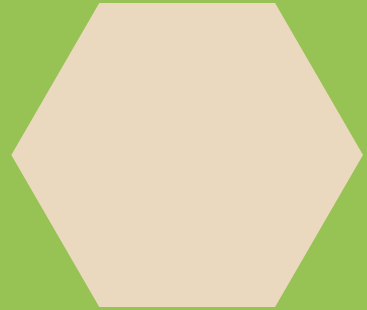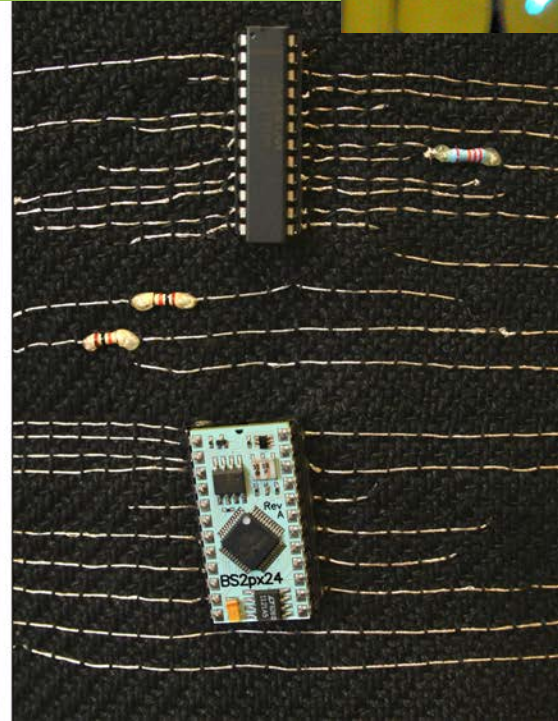Google Glass 2013

2017

designing WEARABLES

Barbara Layne 2007,
'Jacket Antics'

designing WEARABLES

Hussein Chalayan 2008

Pause!
Questions to be answered during the talk
https://presemo.aalto.fi/navi/

WEARABLE technology *art*
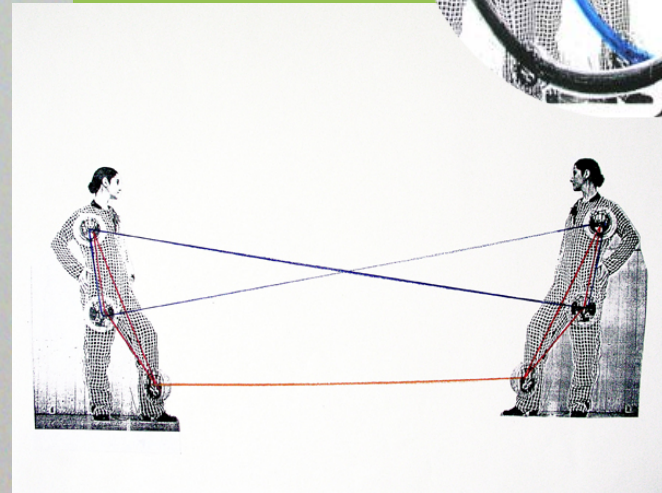

Valie Export / Tap and Touch Cinema 1968

Margarete Jahrmann & Max Moswitzer,
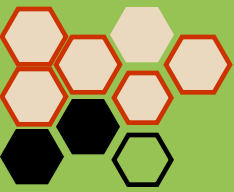'Pong Dress' 2008

WEARABLE technology *art*

-playfulness
-ironic attitude
-often peculiar aesthetics
-non-rational functionality

Bernhard Leitner,
Ton-Anzug / Sound Suit
1975

ON TECHNOLOGY and EXPECTATIONS

Our expectations on technology?

-purposeful functionality
## -invisibility, intuitiveness

1-Mark Weiser - 'ubiquitous computing' 1996

2-The successful technology is able to become so intuitive to our use that it becomes invisible (Andy Clark 2003)

3-When scientists invent a new instrument they have to demonstrate the use and meaning of the instrument. If they are successful other scientists start using the instrument and its general acceptance will gradually make it transparent fact of scientific practice. Media technologies work in similar manner, technology and its protocols become transparent with general acceptance of its use. (Lisa Gitelman 2006)

example:
time

1-A clock synchronized and ordered life of the people in the cities. (E.Kluitenberg 2006)

2-These structures emerged into individual's personal and private schedule with a wristwatch.

3-Today same tasks are increasingly handled by telecommunication devices, such as mobile phones.
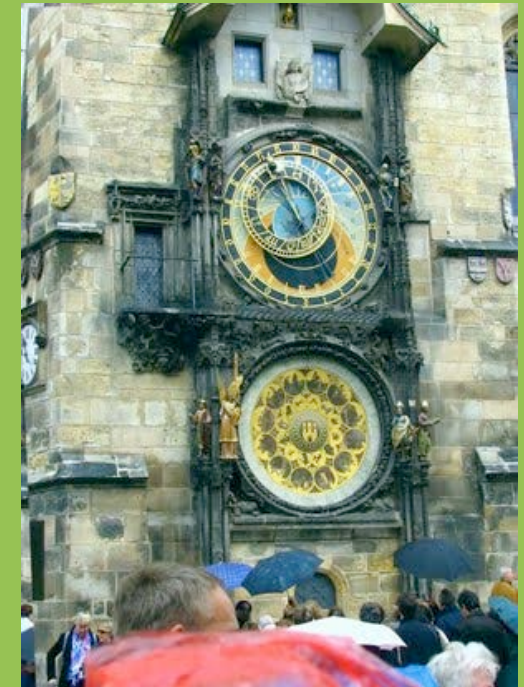
Technological realm of our time:
-David Nye (2006): "It is easier to select among many telephones than it is to do without one."

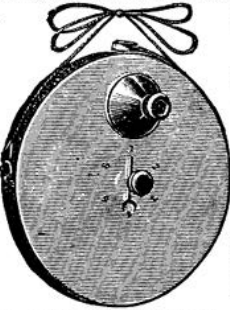13,000 SOLD IN 2 YEARS.
A Wonderful Photographic Invention.
C. P. Stirn's Patent **Concealed Vest Camera**
Awarded Silver Medal, Melbourne Exposition, 1888.
Medal of Excellence, American Institute, New-York, 1888.

Size and Price of No. 1.
6 in. Diameter,
¾ in. Thick,
1 lb. in Weight,
$10.00.
Fine Nickel-plated Camera, with 6 plates for 36 Pictures, 1¾ in. Diameter.

Size and Price of No. 2.
7 in. Diameter,
¾ in. Thick,
1¾ lb. in Weight,
$15.00.
Fine Nickel-plated Camera, with 6 Plates for 24 Pictures, 2½ in. Diameter.

Each Camera in a handsome Case. Each Camera guaranteed perfect.

THE ONLY CAMERA INVISIBLE TO THE EYE; CARRIED CONCEALED UNDER THE COAT OR VEST; TAKES 6 SHARP PICTURES WITHOUT A CHANGE OF PLATE; ALWAYS READY AND IN FOCUS.

Instantaneous Pictures, stationary or moving, caught unknown to the object. No Tourist, Artist or Student, Amateur or Professional, should be without this Camera.

Send for descriptive price-list, free, or stamp for specimen Photograph, or call for particulars, to

STIRN & LYON,
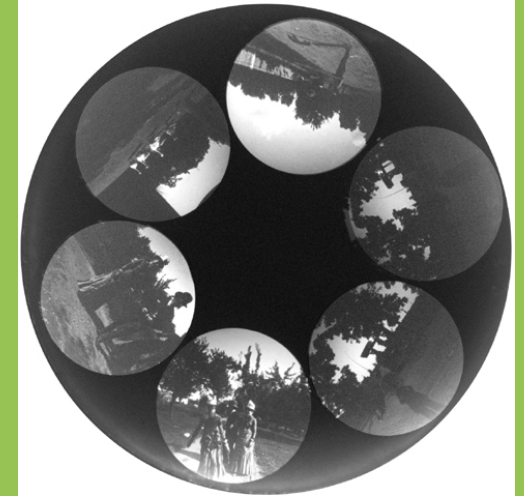20 PARK PLACE, NEW-YORK, U. S. A.
SOLE AGENTS FOR UNITED STATES AND CANADA.
Canvassers wanted everywhere.

-in 1870s interest in hidden cameras used in the city.

-in 1940-50s a private detective became as a fashionable figure in media.

Anna Novakov, Erkki Huhtamo

One of the longest running sales of a unique spy camera was the Steineck ABC WristWatch Camera. It was sold in the USA from the late 1940's until the late 1950s. it was a highly popular camera for it's time. if you were a private investigator and had one, you were the talk of the industry.
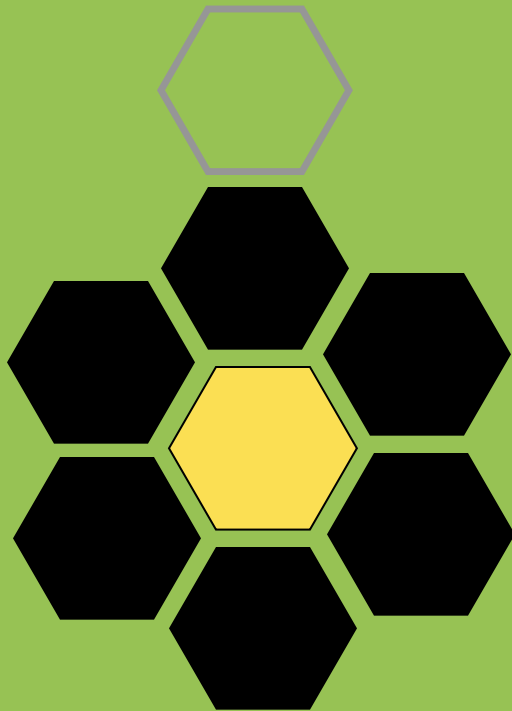
Clynes & Kline, 'cyborg' 1960
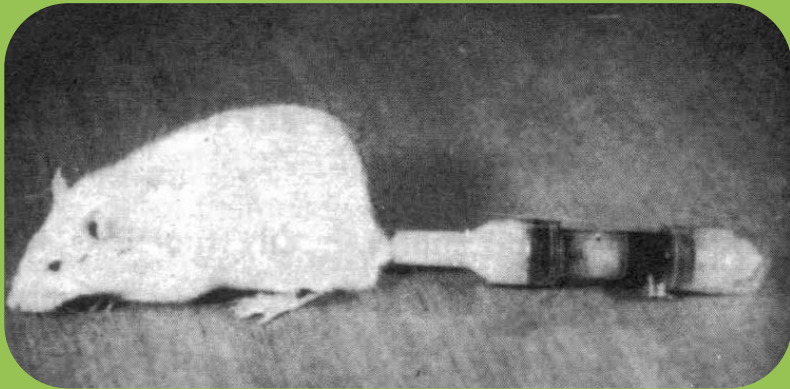
The term cyborg originates from space research
but was adapted by the science fiction field, which
is dominating its use today.

Erkki Huhtamo

-portable, wearable and vehicle-mounted media

-Mobile media devices can be treated as *apparata*, that are partly technological, partly psychological, partly cultural.

ART & WEARABLE TECHNOLOGY

augmented reality (AR)

Morton Heilig Telesphere mask, patented 1960.
The first head-mounted display with stereoscopic TV and stereo sound.

Carsten Höller 1994-2004 **Upside-Down Glasses**
-a guided tour through the collection of the museum for which the visitors will wear specially designed glasses, which invert the visual field of view with various types of optical transformation such as inversion, displacement, reversal, magnification and scrambling.

George Stratton 1890s Scientific experiments with upside-down glasses; wearing 8 days in a row.
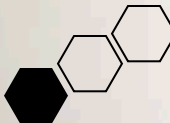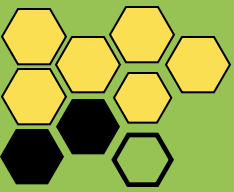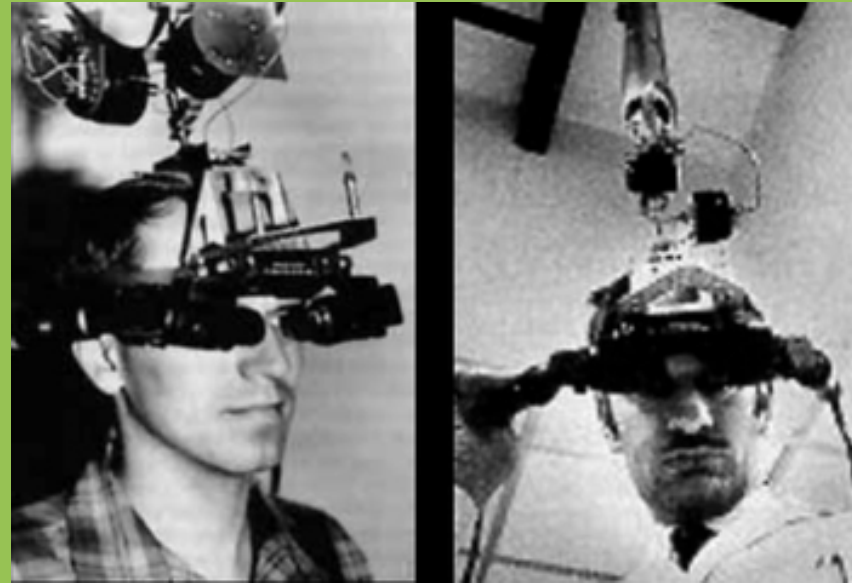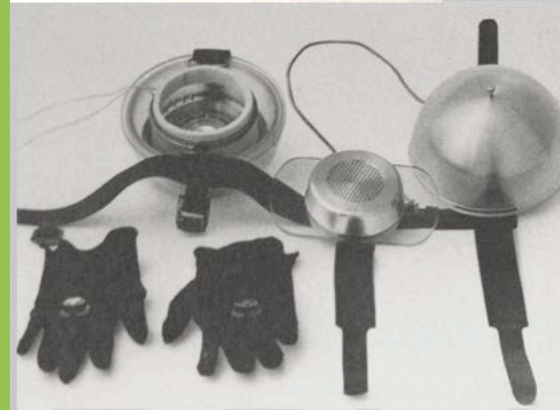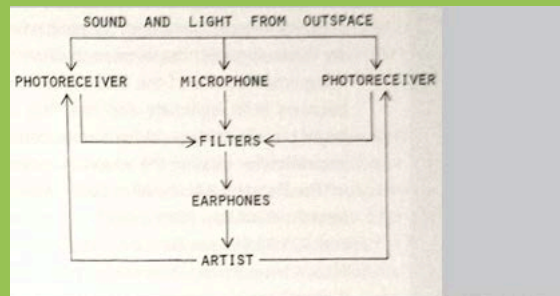
augmented reality (AR)

Lygia Clark 1968
'Dialogue: Goggles'

Ivan Sutherland 1960s,
'The Ultimate Display' 1965

Krystof Wodiczko
Personal Instrument 1969
-a microphone placed on the forehead receives sound from environment and transmits it to the electroacoustic filters located in two soundproof earphones. The filters are controlled by two photoreceptors, fastened to the palm of each hand.

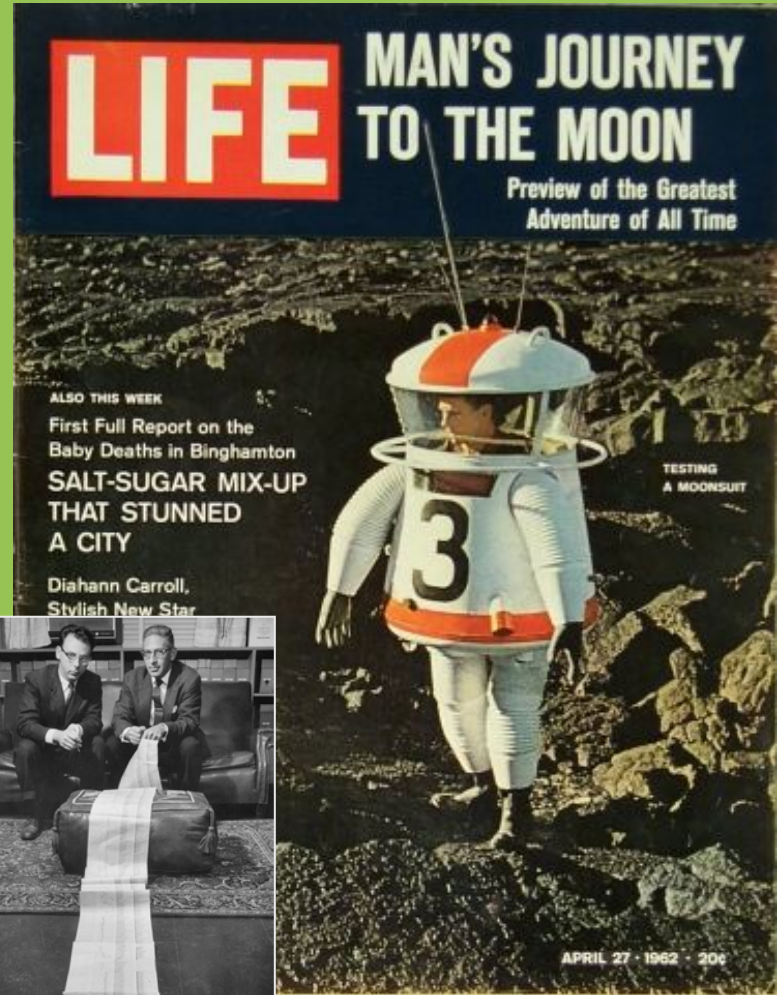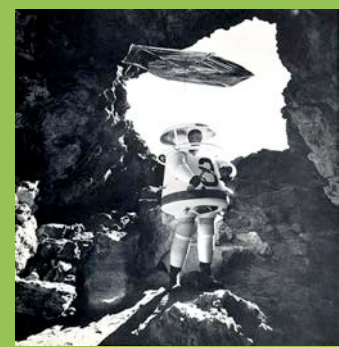The 1st wearable computer 1960s
'Eudameon Shoe', 1970s

Walter Pichler 1967
'TV-Helmet (Portable Livingroom)'

Grumman Moonsuit 1960s, image 1962

'Small room'

LIFE

MAN'S JOURNEY TO THE MOON
Preview of the Greatest Adventure of All Time

ALSO THIS WEEK
First Full Report on the Baby Deaths in Binghamton
SALT-SUGAR MIX-UP THAT STUNNED A CITY

Diahann Carroll, Stylish New Star

TESTING A MOONSUIT

3

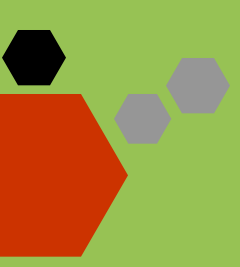APRIL 27 · 1962 · 20¢

Clynes & Kline

Haus-Rucker Co,
Enviroment-Transformer
 1968
-plastic color visors
changed visual and
auditory impressions.

Vision machines
Alfons Schilling,
1970s

Hachiya Kazuhiko, 1993
InterDis-Communiction Machine

Cognitive scientist Andy Clark's definition of "opaque technologies" could almost be a description of these alternative approaches and unexpected characteristics what some of the wearable technology projects demonstrate, typically in the field of the arts. According to Clark "opaque technologies" are highly visible in use and they make a sharp distinction between the user and the tool, where user's ongoing problem is to successfully deploy and control the tool. (Clark, 2003)

>> It is interesting that the alternative approaches to wearable technology are often intentionally built as "opaque", whereas Clark's definition of "opaque technologies" seems to reference a way how the design of the device, both aesthetical design and functional user-interaction design, have failed

-playfulness
-ironic attitude (sometimes)
-surprising aesthetics (sometimes)
-non-rational functionality (sometimes)
-strong conceptual idea
-own distinct criteria (in comparison to the rest of the field)

Stephan Schulz 2006
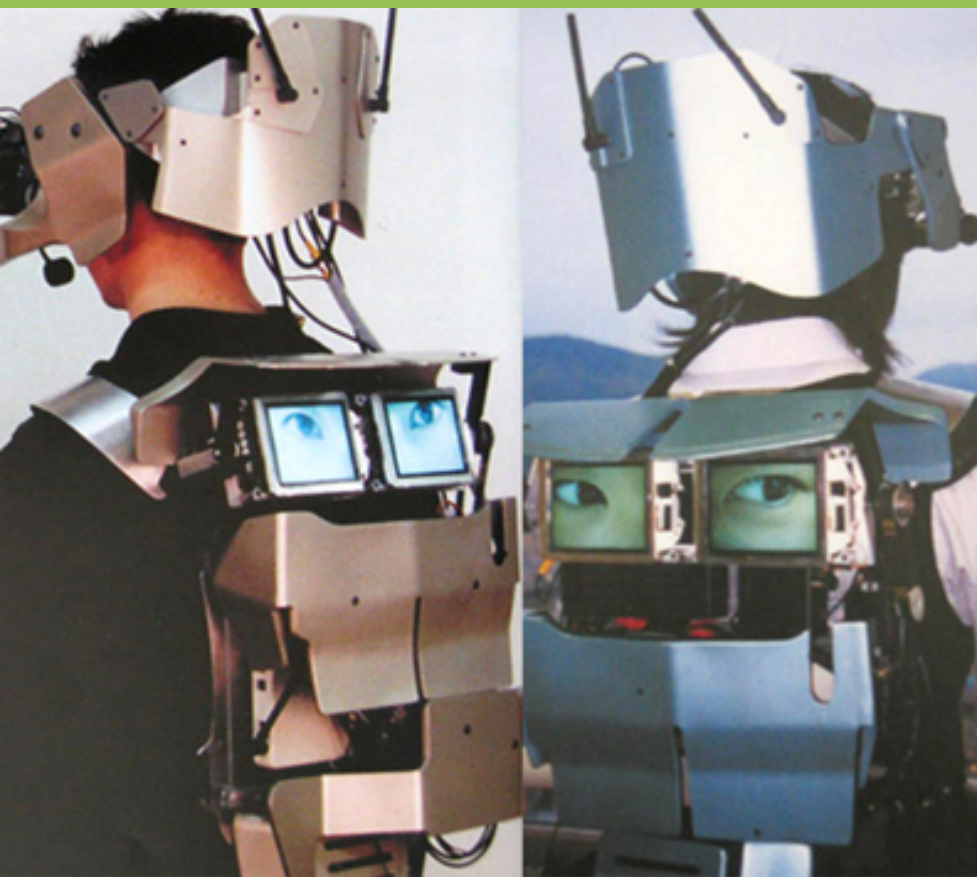
Tin Drum
A user/performer is outfitted with this wearable,
location-based drumming machine. While walking and
occupying public space the GPS data is analyzed and
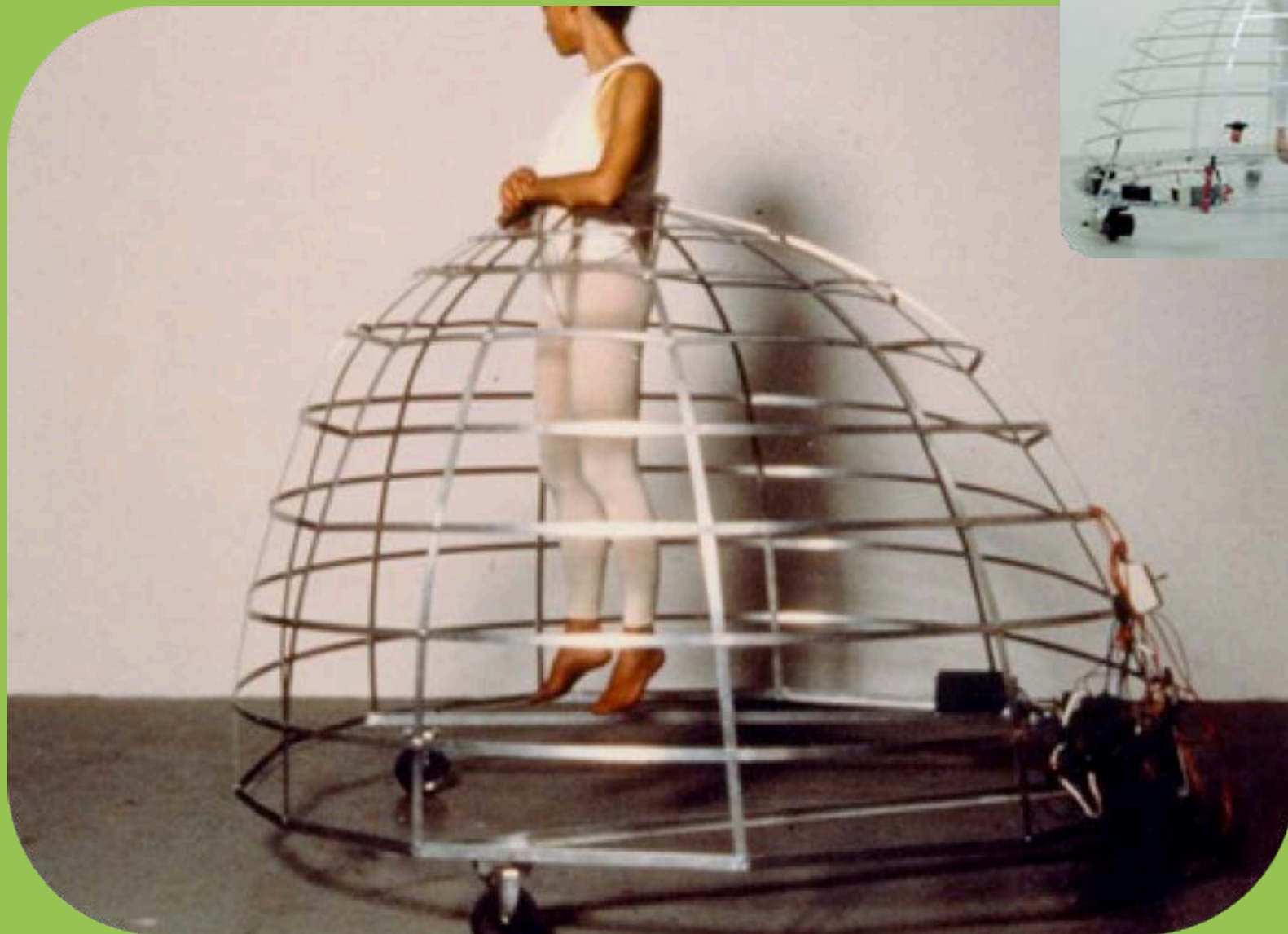translated in to drumming patterns.

Krysztof Wodiczko 'Dis-armor' 2004

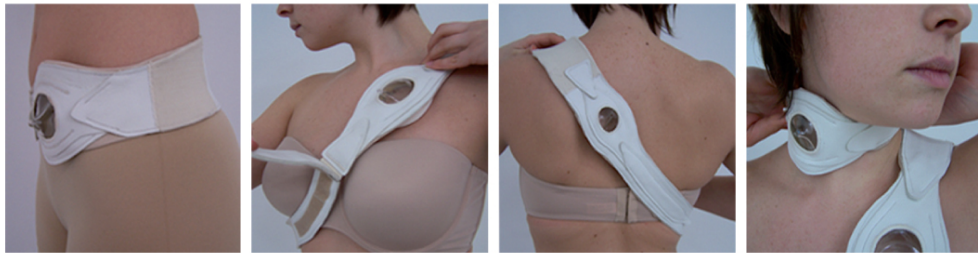Gordan Savicic 'Constrained City 2007

Atsuko Tanaka 'Electric Dress' 1956 (1959)

Remote Control
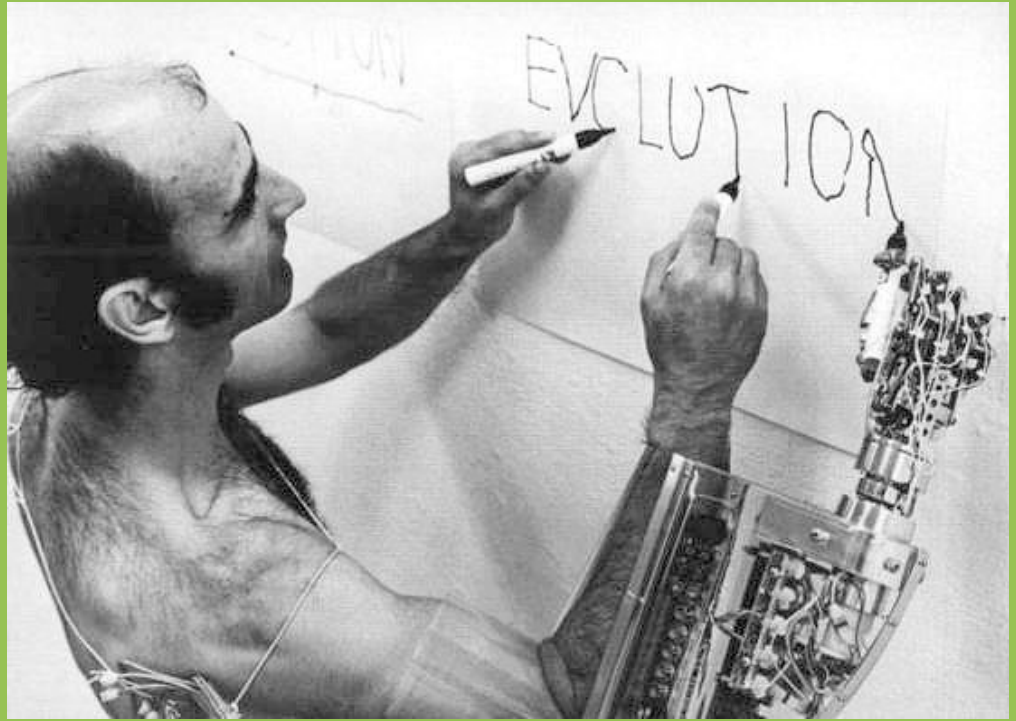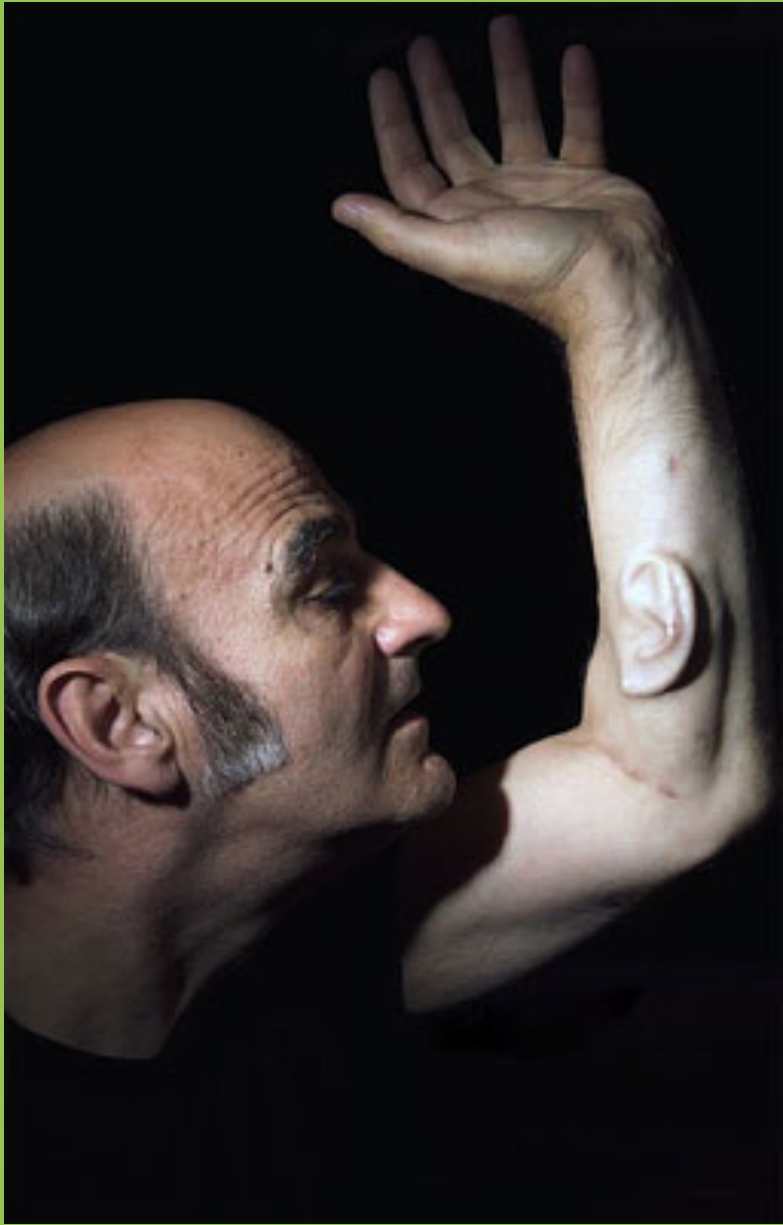by **Jana Sternbak**, 1989

Wear the different speakers, listen to your own body sounds, and make your own remix.
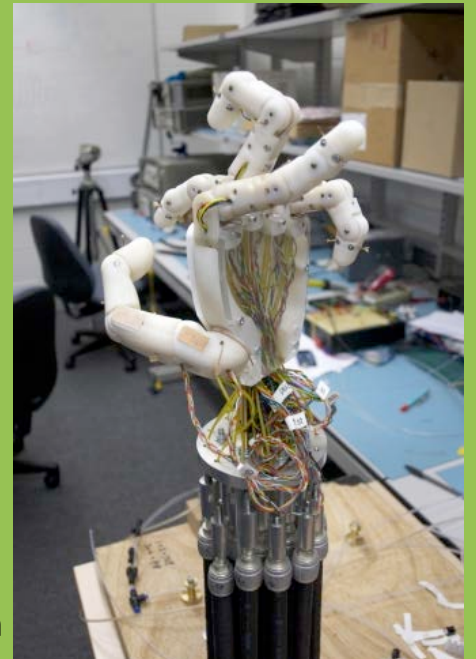
Body Speaker

Karina van Heck, 2010 Body Speaker
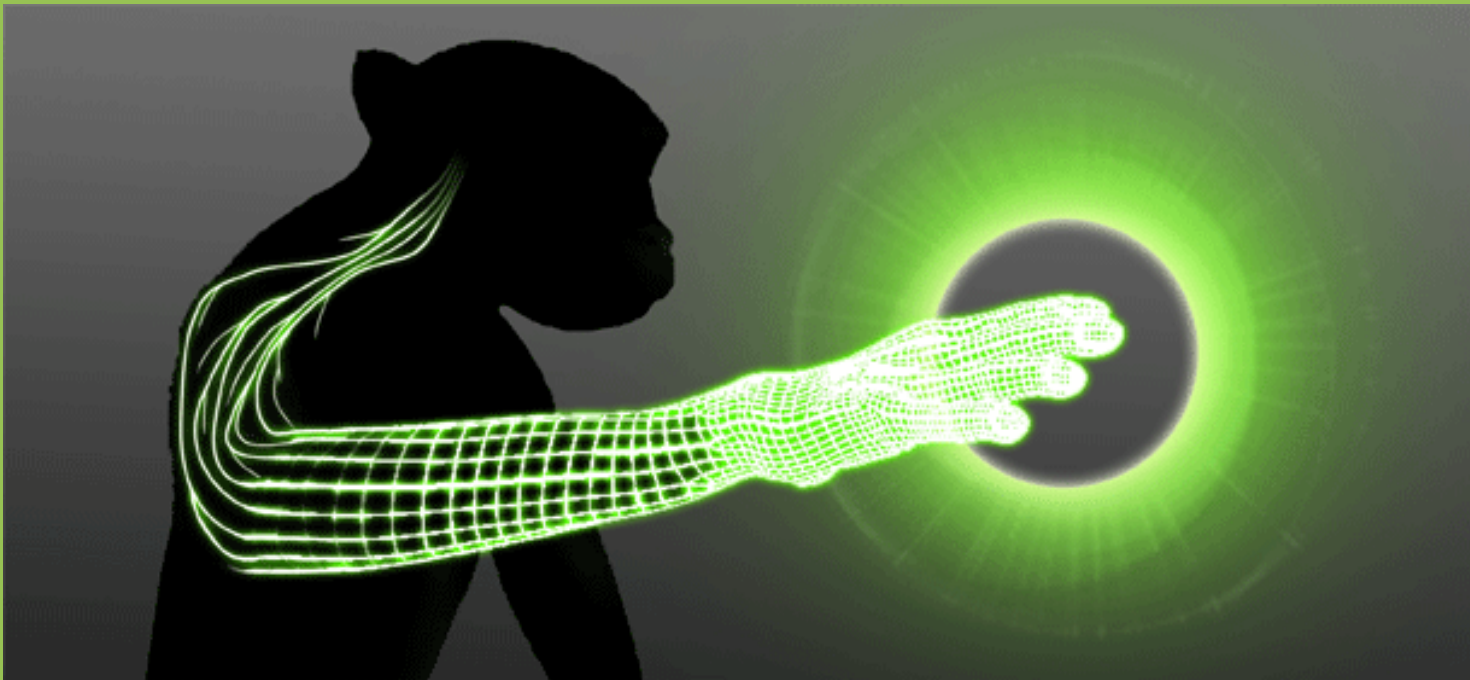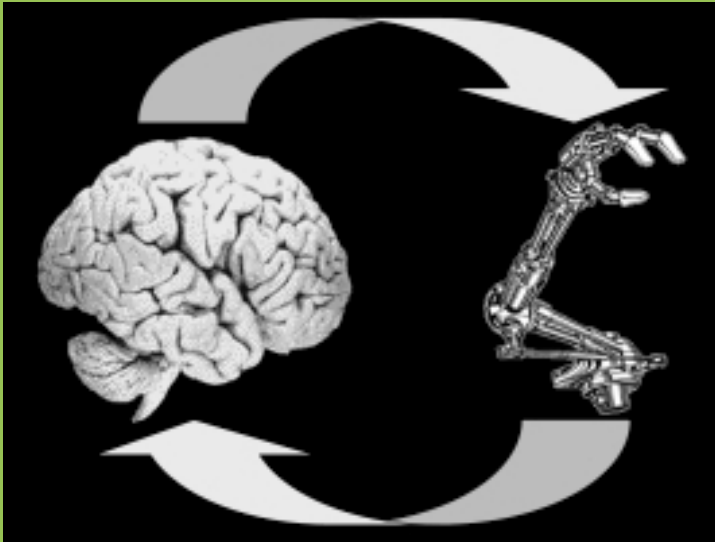
Steffi Weissmann, LapStrap-Istanbul, 2010

Stelarc

Third hand 1981-1994

Ear on Arm-2007>

The Ambidextrous Arm

Rhesus monkey and 3 hands – Miquel Nicolelis. Duke University (2013-?)

Orlan,
body modifications / plastic
surgeries since 1990's

Pause!
Questions to be answered during the talk
https://presemo.aalto.fi/navi/

THE END