



Project 1a: First Microboundary : Body

On CNN:

"In this new perspective devoid of horizon, the city was entered not through a gate nor through an arc de triomphe, but rather through an electronic audience system."

– Paul Virilio, *The Overexposed City* (1984)

On personal computers:

"Perhaps unwisely, the brain is subcontracting many of its core functions, creating a series of branch economies that may one day amalgamate and mount a management buy-out."

– JG Ballard (1992)

On ubiquitous computing:

"Ubiquitous computing names the third wave in computing, just now beginning. First were mainframes, each shared by lots of people. Now we are in the personal computing era, person and machine staring uneasily at each other across the desktop. Next comes ubiquitous computing, or the age of calm technology, when technology recedes into the background of our lives."

- Mark Weiser (1996)(coined the phrase "ubiquitous computing")

"If you lose your eye and have a hole in your head, then why not stick a camera in there?"

- Rob Spence, self-described "eyeborg"

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The quotes above efficiently trace 25 years of development in ways that communications technology have altered the relationships between our bodies and the spaces that our bodies inhabit.

We observe two recent developments – RFID congestion traffic pricing and the new market for personal implantable chips – as the advent of *microboundary*: urban and corporeal gateways that could not exist without late inventions in ubiquitous computing.

These kinds of boundary are different from physical boundaries found previously in architecture and the city; and from boundaries previously known in the human body. With advances in ubiquitous computing and the dropping cost of microprocessors and sensors, technology increasingly forms spatial relationships between the body and the built environment as it has not done before.

To begin our semester, we will look at *microboundaries* at the scale and site of the *human body*. We will also use this as a means to get familiar with some basic terms of sensory and responsive systems in both architecture and interaction design.

Sense

What technologies past, present and future may serve as a basis for our notions of both functionality and beauty today? And where will they be found in and around our bodies? Conduct research online into emergent and future electronic technologies that relate to the body's functions, and imagine or speculate their potential spatial consequences.

Some questions to consider:

What functions of the body can be altered, augmented, suppressed, replaced technologically, electronically? What is the space of that transformation? Lastly, what are the qualities of that space? Seek and find. This is intended as a companion to the interaction-projects research that you are doing on the Arduino website.

Process

Document the technology in whatever media you find – text, video, photos, or simply sound. As you compile data, sketch and interpret the possible (maybe unintended) consequences. Consider what factors might make this technology change its appearance, its use or its space in the future. Would climate change and atmospheric pollution affect vision? Will implantable chips partner assist new ways of social networking? This new scenario – the technology, the body, and its spatial and programmatic result – are the resultant single *function*. Consider guiding your research using one of the terms on the following page; or use them to help frame your interpretation of the results. Make drawings of these ideas, as proposals for its aesthetic and functional lives.

Respond

1. Video

Produce a video study of the technology, not to exceed 60 seconds.

This may include computer model animation, found footage, and/or an enactment of the result of this on human movement. The video will be rough and ought to be treated as a means of generating ideas over time; not a polished presentation tool. Therefore you may consider marking time onscreen or otherwise making use of the time component to give more information about the technology's behavior.

You may check out video cameras from the media center, or simply use the low-res video from your phone or digital camera.

We will conduct a quick tutorial on video editing using iMovie, during studio on Friday. Information for this tutorial can be found on Apple's website:

iMovie Tutorials:

<http://www.apple.com/findouthow/movies/>

<http://www.apple.com/ilife/tutorials/#iphoto>

2. Drawings

Draw a single plan and section of the technology, with a body, either to full scale (body detail) or 1"= 1'-0" (full body drawings). This may also be output from a digital model, formatted and labeled as drawings.

Due: Review Friday, 23 January

Use a title from the list below and use it to actuate research into a case of microboundary.

AC harmonic filters, Accident exposure factor, Accident circuit, maximum voltage, Accidental ground circuit, Accumulator measurements, Active lighting terminals, Active noise cancellation, Aesthetics-substation planning enclosures, governmental regulations, noise abatement methods, noise sources, typical noise levels, Color reflective glare, elimination, community acceptance, Blast breakers, Dielectric strength, Magnetic circuit breakers, Allowable stress design, Advanced mobile phone system, Analogue to digital conversion, Animal deterrent, Animal types of clearance requirements, Architecture functional data paths, Asphalt compound coating, Asymmetrical currents, Asynchronous transfer mode, Automatic capacitor switch or controls, Latching devices, Auxiliary switch, Backup protection, Blast pressure, Capacitor divider devices/current transformers, Capacitor banks, Chain link fences, International conference on large electric systems, Dead tank, Coaxial cable collision detection, Communication protocol application areas, Communications message limitations, Communications mobile computing infrastructure, Communications media satellite systems, Community acceptance electric fields, Community acceptance magnetic fields, Community acceptance hazardous materials, Control and protection systems data handling, Convertible static compensator
Current flow through body, duration of, Cyber security authentication, Cyber security encryption
Digital measurements, Early streamer emission (ESM) lighting rods, Electric shock exposure, Electrical environment, Environmental liberation front, Exterior fault currents, Extra high voltage facilities, Fibrillation below threshold currents, Flexible ac transmission systems station, Ground flash density, High speed resolution recording, High voltage distribution network, Horizontal shield wires, Insulated gate bipolar transistor, Intelligent electronic devices (IED), International building code ground motion maps, High-speed fault clearing, Hookstick, Horizontal shield wires, Impulse critical flashover voltage, Latching devices
Line-to-line-ground faults, Measures to enhance cyber intrusion, Mechanical cam-action type, Mechanical deterioration, Monte carlo method, Muscular contraction, Pressure relief device operation, Remote teleprinting, Security implementation control building design, Security implementation video motion detection systems, Single substation shield mast, Sound enclosures, Data warehouse, Thunderstorm frequency, Utility communication architecture, Ventricular fibrillation, Zone of protection.

<http://www.backfire.dk/EMPIRENORTH/newsite/index.htm>

**- from the index of 'Electric Power Substations Engineering', Second Edition,
John D. McDonald**