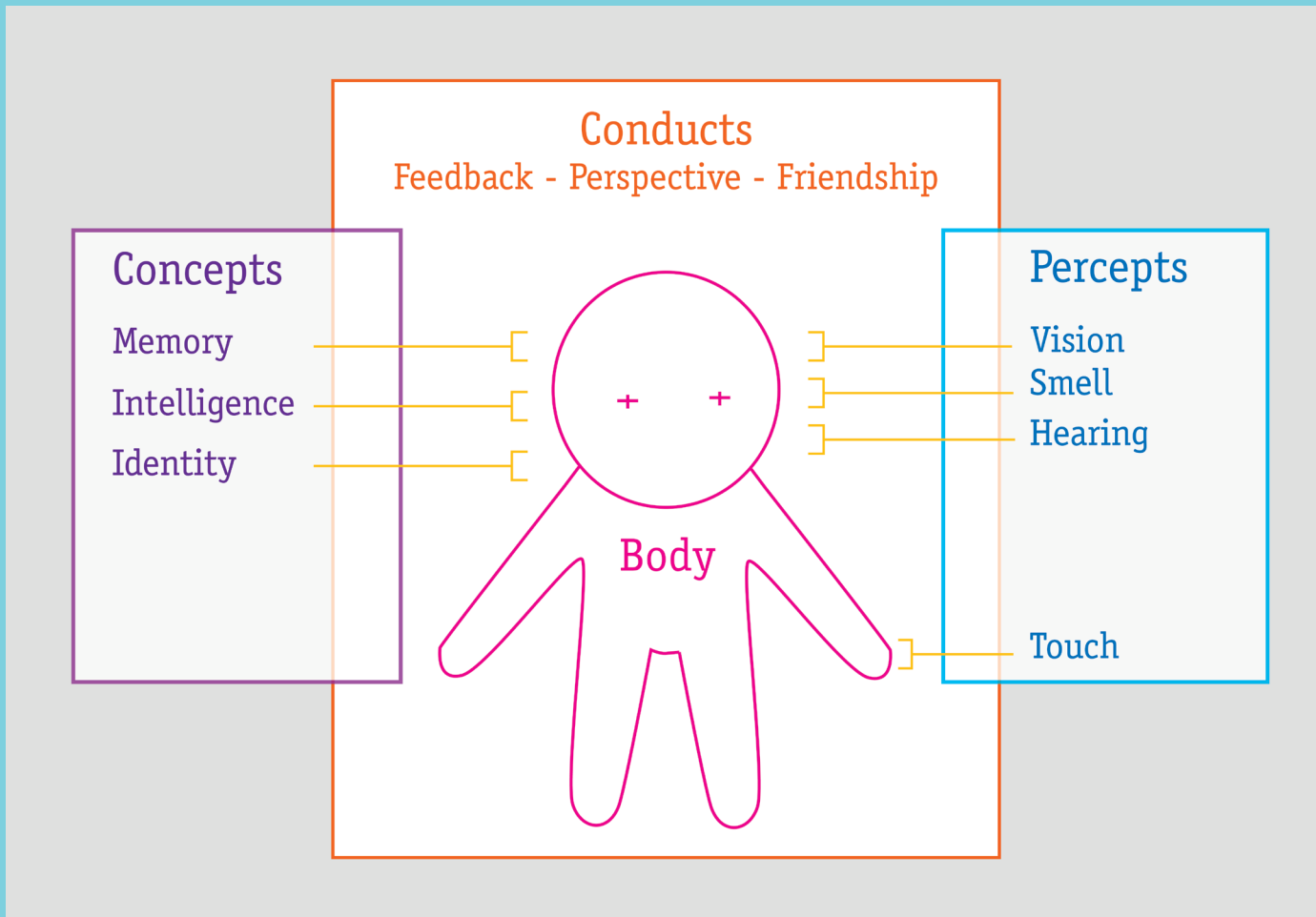


**OPPORTUNITIES**

# Opportunities

## Percepts - Concepts - Conducts



- Inspiration
- Beyond Picture This!
- Lifecycle
- Learning
- Communication
- Connection
- Mindful Learning
- Motivating Feedback

- Percepts
- Vision . Smell . Hearing . Touch
- Concepts
- Memory . Intelligence . Identity
- Conducts
- Feedback . Perspective . Friendship

- Where do I stand?
- Dimensions in my work
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- Generalizing Picture This!
- Other methods
- Mapping

# Percepts

## Vision

### Observation

- Current displays restrict vision to one depth of field, supporting visual fatigue and myopia.
- Stereoscopic vision rehabilitates the effects of looking at one depth of field.

### Mechanism

Train stereoscopy as new means of environment interaction.

### Opportunity

See all surfaces in 3D with your own eyes!



Tri-Vision, a stereo camera, (1946-49).

# Percepts

## Smell

### Observation

Smell is key to past experience and is unexplored.

### Mechanism

- Collect senses of smell to create and recall stories.
- Associate memories of smells, places and objects.

### Opportunity

Smell the grass by reading a book and remember an afternoon tea party!



# Percepts

## Hearing

### Observation

The spectrum of high frequencies that one can hear drops off with age.

### Mechanism

Encode information at frequencies discernible by some populations and not others.

### Opportunity

Hear secret messages that no one else can hear!

# Percepts

## Touch

### Observation

Touch interfaces between the physical space and the nervous system.

### Mechanism

- Injectable electrodes at the peripheral limb where the leg has been amputated.
- Electrodes stimulate the nervous system, actuated by a prosthetic

### Opportunity

Feel the sand from a foot that doesn't exist!



### Reference

Aaron R., Herr H., Ciombor D., Hochberg L., Donoghue J., Briant C., Morgan J., Ehrlich M.(2006). Horizons in Prosthesis Development for the Restoration of Limb Function, Journal of the American Academy of Orthopaedic Surgeons. 14 (10): 198-204.

# Concepts

## Memory

### Observation

Memory aids could both allow us to focus on more important matters, or destroy our ability to recall.

### Mechanism

Develop a taxonomy of cognitive tasks to determine when cognitive aids liberate higher cognitive functions.

### Opportunity

The computer does low level tasks while you create bridges between disciplines!

Externalizing body functions with technology might be liberating (Serres, M.).

People use pen and paper to simplify cognitive tasks! You could just lean on the structure of the environment to remember!

Putting brain, body and world together in epistemic action! (Andy Clark).

# Concepts

## Intelligence as calculation

### Observation

- Humans often outperform technology in pattern recognition.
- Technology outperforms humans in raw calculation.

### Mechanism

Assist a player in becoming a better calculator, and defer to the person what she is uniquely expert in.

### Opportunity

Become a superhuman computer!



A Go competition.

MoGo (2008). MoGo beat Myungwan Kim who is an 8-dan master on a 19 x 19 board (most previous wins by computers were done on smaller amateur level 9 x 9 boards). Kin gave the computer a nine-stone handicap.

# Concepts

## Intelligence as adaptation

### Observation

- A majority of westerners think that as we get old, we don't remember as well.
- Langer showed that the degree of memory loss is dependent on how we value aging!

### Mechanism

Structure societal change in the conception of value in aging.

### Opportunity

Revisit every stereotype you can think of!



# Concepts

## Identity

### Observation

- Some role playing games have more than 10.9 million monthly subscribers!
- In RPG we are equipped with sonic hearing, super vision, abnormal strength!

### Mechanism

Use virtual environments to ask people to rediscover what they can do with their senses in the real world.

### Opportunity

Be an everyday super hero!



Borderland by Lucien Alma and Laurent Hart, 2001.

“Borderland” is based on video game duels such as “Tekken” or “Mortal Kombat”. They use ordinary people as the characters: old ladies, tramps, workmen to fight each other against the backdrop of the suburbs of Paris that have become a desolated no-man’s land.

Oral Exam  
Cati Vaucelle  
Tangible Media  
MIT Media Lab  
14-11-2008

#### Introduction

#### Part I - Motivation

- Inspiration
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#### Part II - Opportunities

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#### Part III - Vision

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#### Part IV - Sensing Technologies

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#### Conclusion

# Conducts

## Feedback

### Observation

Ungrounded, “magical” interaction, romanticized via video games and TV, deny the power of real-life cause and effect.

### Mechanism

Combine children’s physical limits with digital action and reward to reinstate the relationship between cause and effect.

### Opportunity

Feel your own body limits when you play video games!



50 years ago children had a direct understanding and relationship to cause an effect of a physical action.



In Harry Potter they use a “magic wand” to confront others!

# Conducts

## Perspective

### Observation

50 years ago, kids with ADHD were given means to catalyze their energy (Golse).  
Now quick fix: pharmaceutical treatment.

### Mechanism

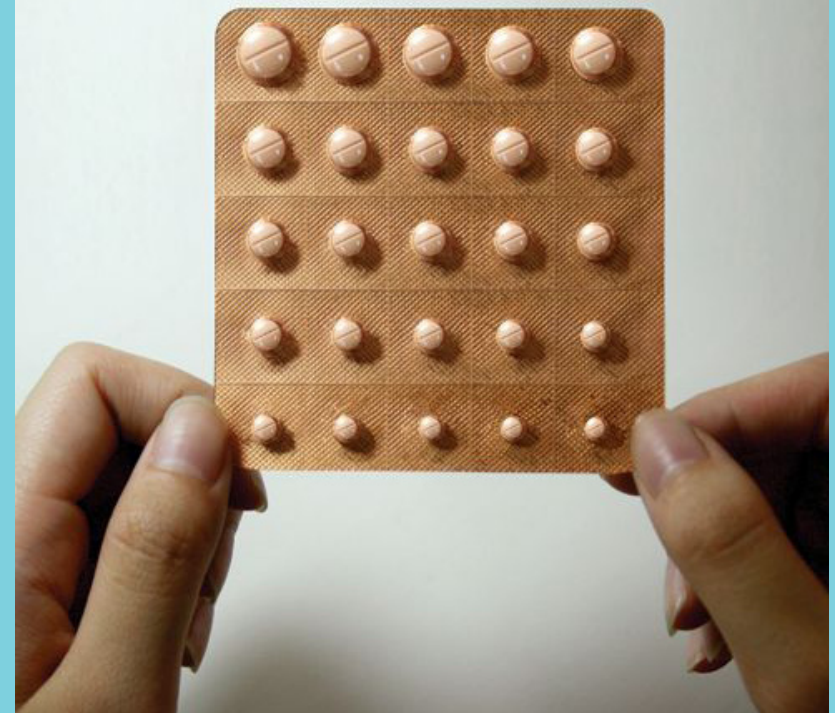
Kids with ADHD can focus if they vary the target of their attention in their own minds (Langer).

### Opportunity

Play hopscotch in a museum and recall all the details of a Botticelli painting!

You are getting better day after day by Broadhong Design, 2006.

Designers envisioned the physical representation of the healing process as part of a pharmaceutical treatment.



# Conducts

## Friendship

### Observation

With social networks, we build “instant” friends. We are perpetually connected but out of touch!

### Mechanism

Social networks could better support realistic relationships by monitoring and reflecting activity between users.

### Opportunity

Live on Mars and have millions of real earth friends!



Squeeze Me! (2006)  
This vest simulates therapeutic holding to “ground” patients with sensory issues.

## Grounding the body: the Me ++

The link between the dematerialized digital body and sensory opportunities is:

### Grounding

Creating a shift in perspectives, from a new discovery of the environment to playing with our senses.

Don't just passively deliver information or stimulate the senses, actively construct a relationship between digital and physical body in the individual!

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