

Interface Aesthetics Week 2

Beyond Desktop

OUTLINE

- Homework
- Tangible user interfaces
- Ambient media

Homework

HOMEWORK

Think about your favorite object (could be a physical thing or a virtual thing) and describe its aesthetic quality based on the three levels of processing — Visceral, Behavioral, Reflective.











ARCHES
AQUARELLE ARCHES

ARCHES
AQUARELLE ARCHES

BLOC POUR L'AQUARELLE
ET LA DÉTREMPE

WATERCOLOR BLOCK

GRAIN FIN
100% PUR COTON
10 FEUILLES - 640 g/m² - 23 x 31 cm

COLD PRESSED
100% COTTON
10 SHEETS - 300 Lbs - 9" x 12"

MOVLIN & PAPIER D'ARCHES
fondé en l'An 1492

ARCHES
AQUARELLE ARCHES

BLOC POUR L'AQUARELLE
ET LA DÉTREMPE

WATERCOLOR BLOCK

ROUGH
100% COTTON
10 SHEETS - 140 Lb - 9" x 12"

ARCHES
AQUARELLE ARCHES

BLOC POUR L'AQUARELLE
ET LA DÉTREMPE

WATERCOLOR BLOCK

GRAIN SATINÉ
100% PUR COTON
10 FEUILLES - 640 g/m² - 23 x 31 cm

HOT PRESSED
100% COTTON
20 SHEETS - 140 Lb - 9" x 12"

MOVLIN & PAPIER D'ARCHES
fondé en l'An 1492





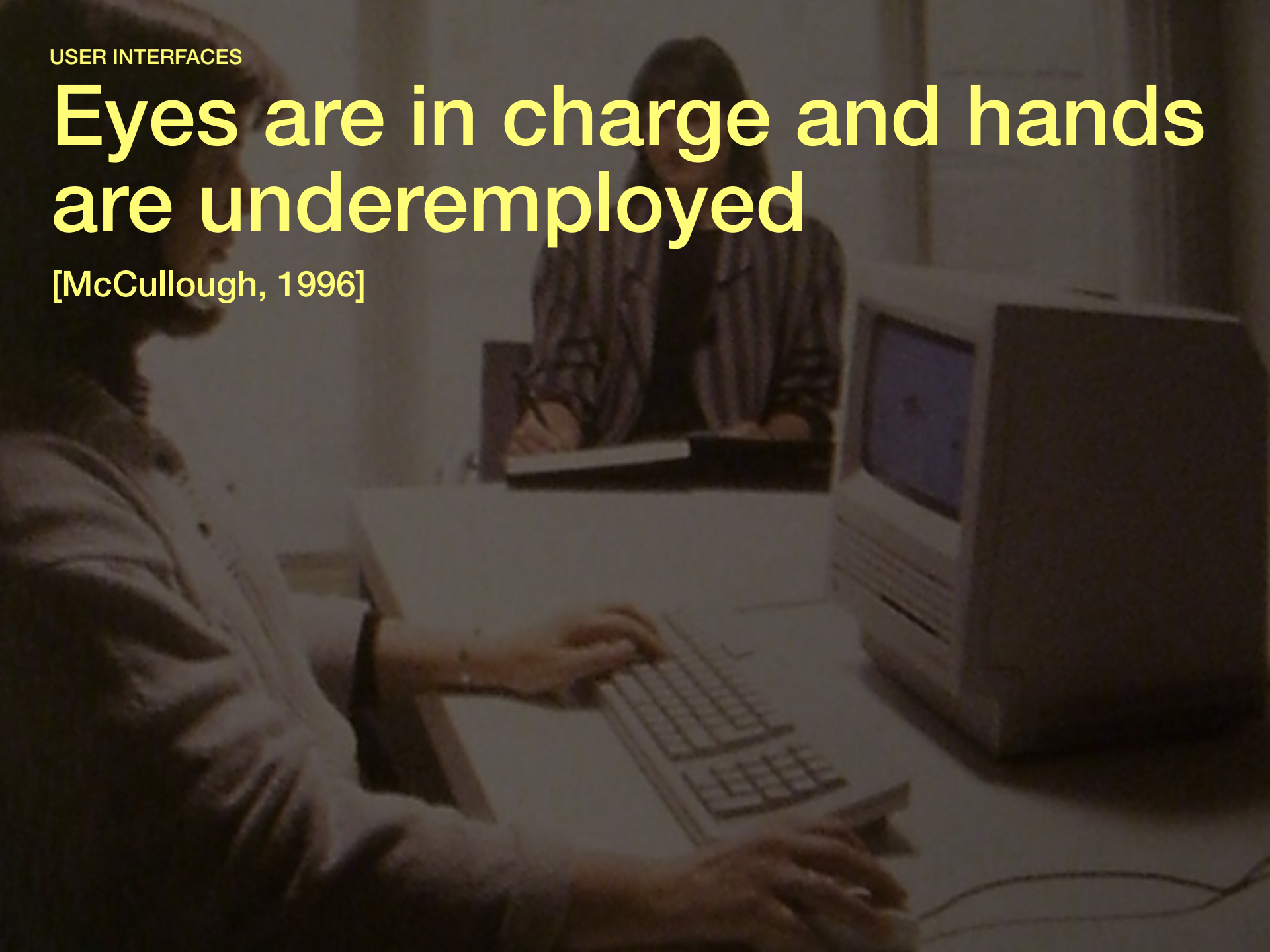


User interfaces: The current state of affairs

USER INTERFACES

Eyes are in charge and hands are underemployed

[McCullough, 1996]

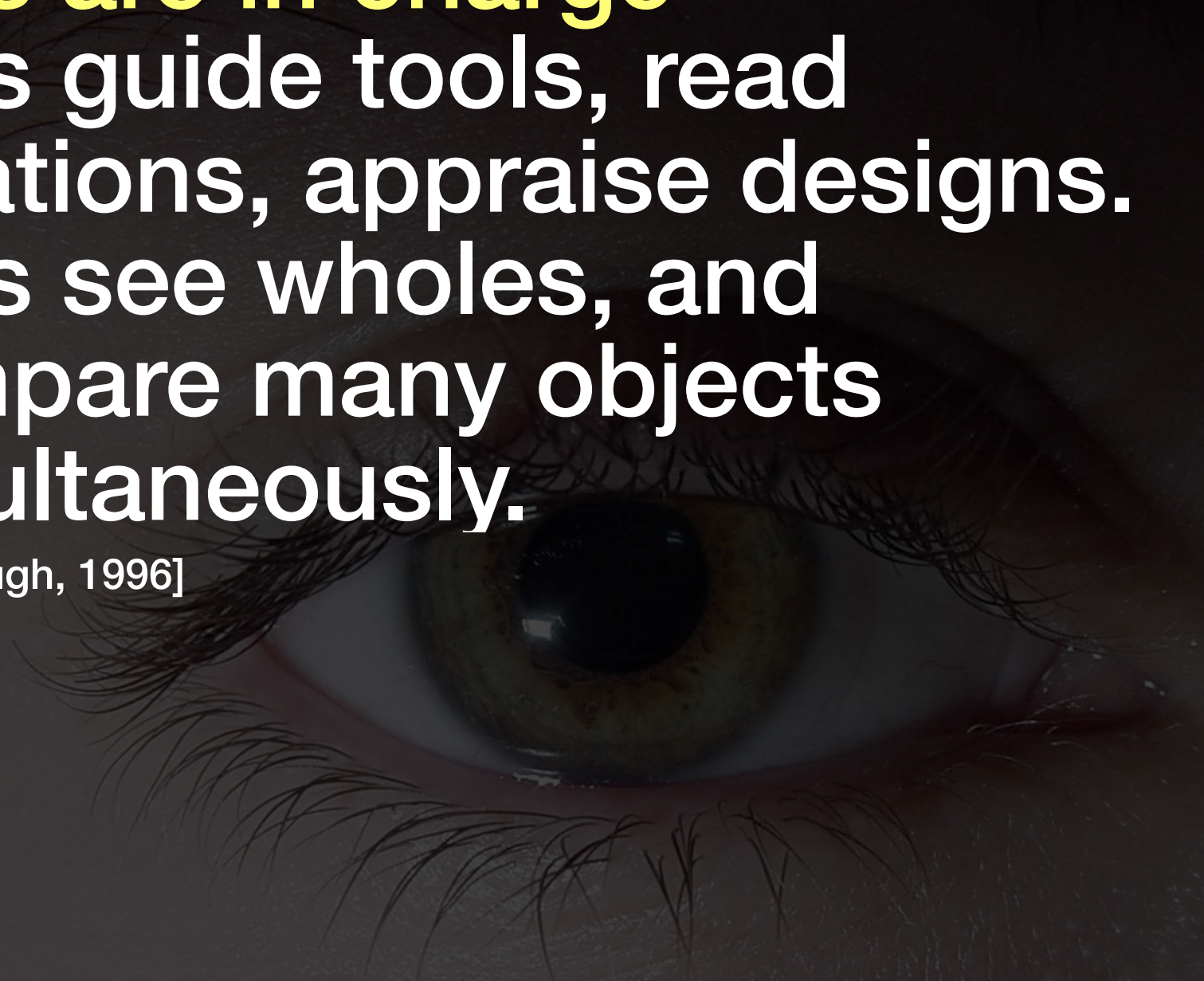


Eyes are in charge

Eyes guide tools, read notations, appraise designs.

Eyes see wholes, and compare many objects simultaneously.

[McCullough, 1996]



USER INTERFACES

Hands bring us knowledge of the world



Hands bring us knowledge of the world

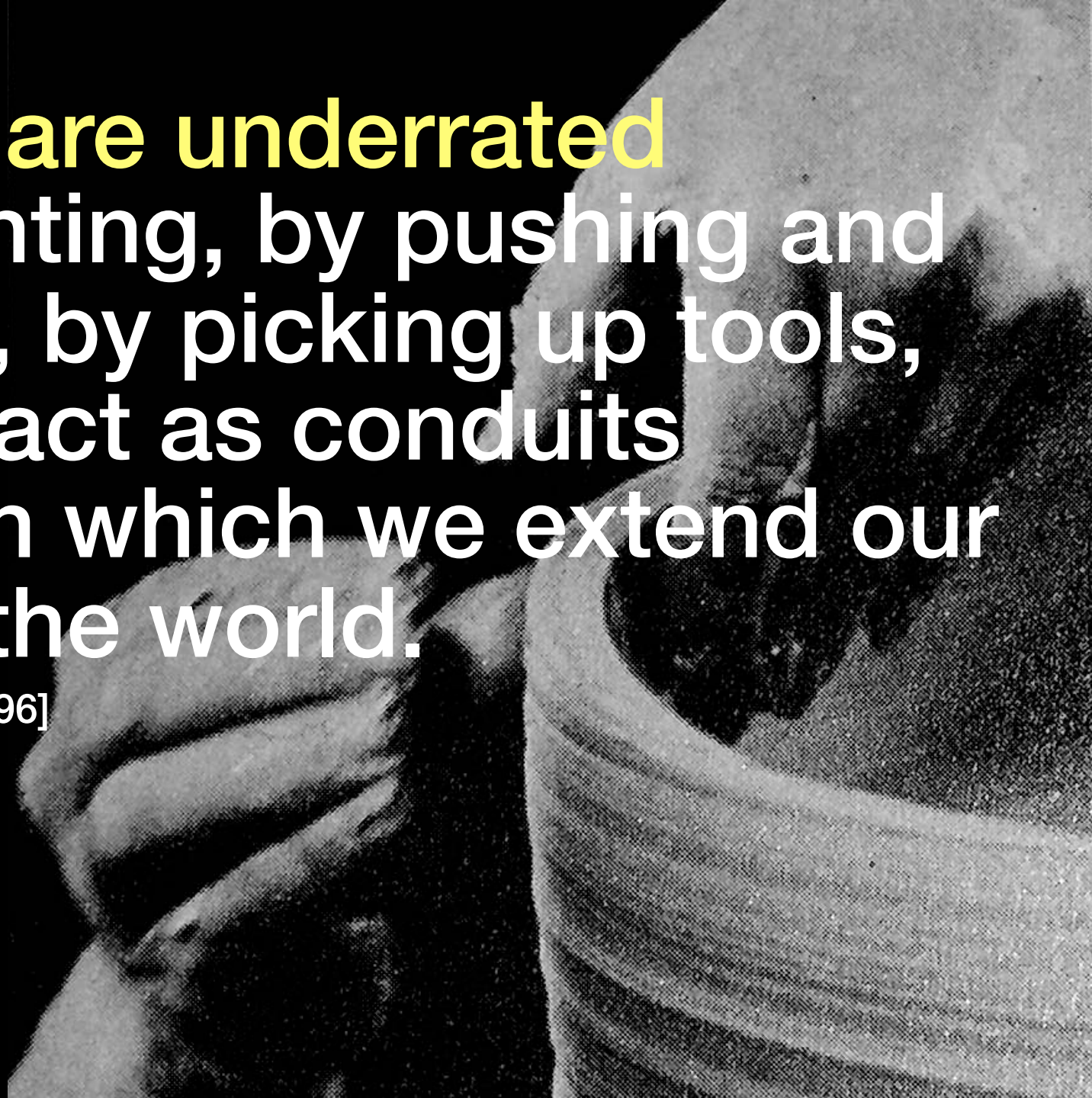
They are the most subtle, sensitive, probing, differentiated, and the most closely connected to the mind. They deserve to be admired.

[McCullough, 1996]

Hands are underrated

By pointing, by pushing and pulling, by picking up tools, hands act as conduits through which we extend our will to the world.

[McCullough, 1996]





USER INTERFACES

**Eyes activate the hands,
and hands direct the eyes.**



**Eyes activate the hands,
and hands direct the eyes.**
Hand-eye coordination
distinguishes humanity as the
maker of things: *homo faber.*

[McCullough, 1996]

Tools

Aesthetics of the tools lost in the flood of PCs.



Combining the skillful hand with the reasoning mind

Computers let us turn the
table—to apply something
we know about using tools
to achieve richer symbolic
processing.

[McCullough, 1996]

BEYOND DESKTOP

Tangible User Interfaces

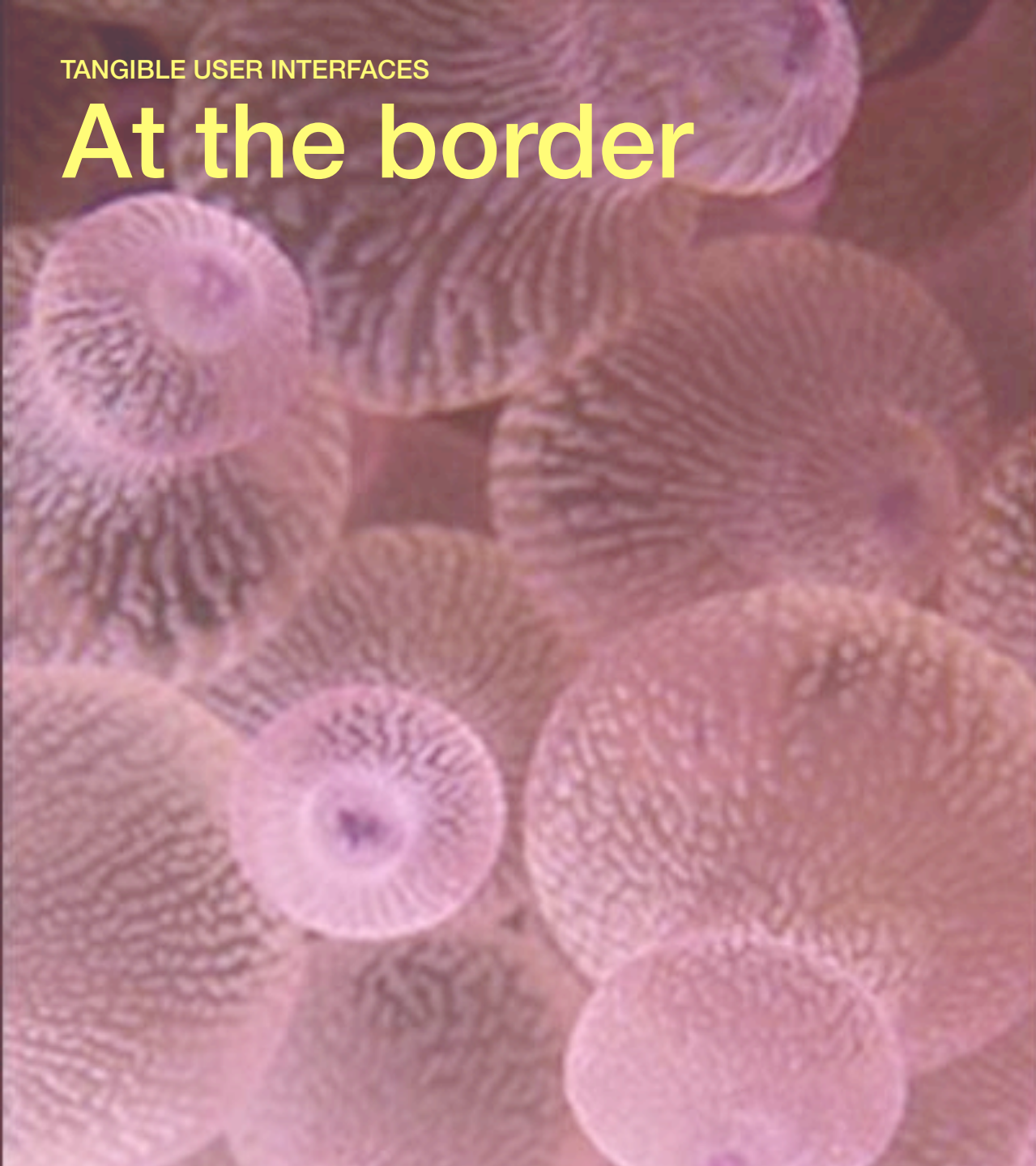
TANGIBLE USER INTERFACES

At the border



TANGIBLE USER INTERFACES

At the border



At the border

We live on the border where bits meet atoms. In the flood of pixels from the ubiquitous GUI screens, we are losing our sense of body and places.

[Ishii, 2006]



Coincidence of input and output spaces

TANGIBLE USER INTERFACES

Curlybot

[Frei, Su, & Ishii, 2000]



TANGIBLE USER INTERFACES

Topobo

[Raffle, Parkes, & Ishii, 2004]



Coincidence of input and output spaces



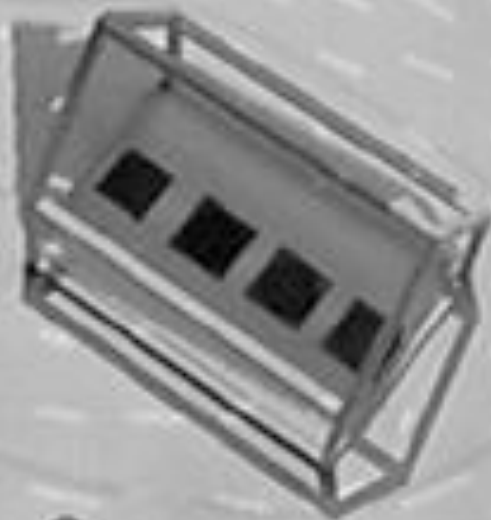
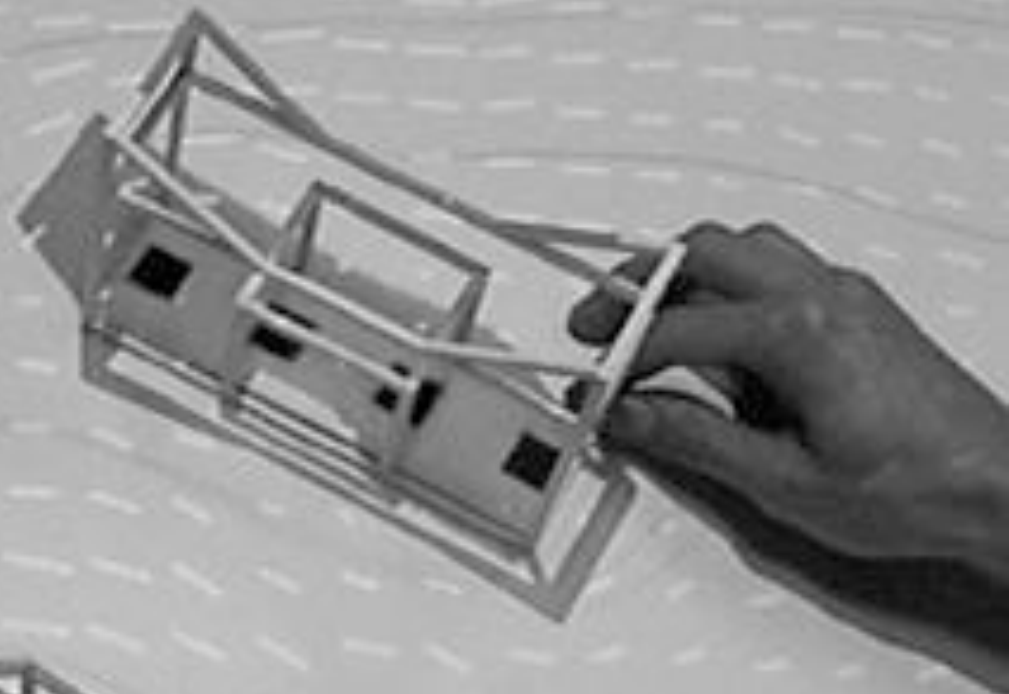
Tabletop TUI

Coupling tangible
representations to digital
information and computation

TANGIBLE USER INTERFACES

Urp

[Underkoffler & Ishii, 1997]



TANGIBLE USER INTERFACES

Illuminating Clay

[Piper, Ratti, & Ishii, 1999]



TANGIBLE USER INTERFACES

AudioPad

[Patten, Recht, & Ishii, 2004]



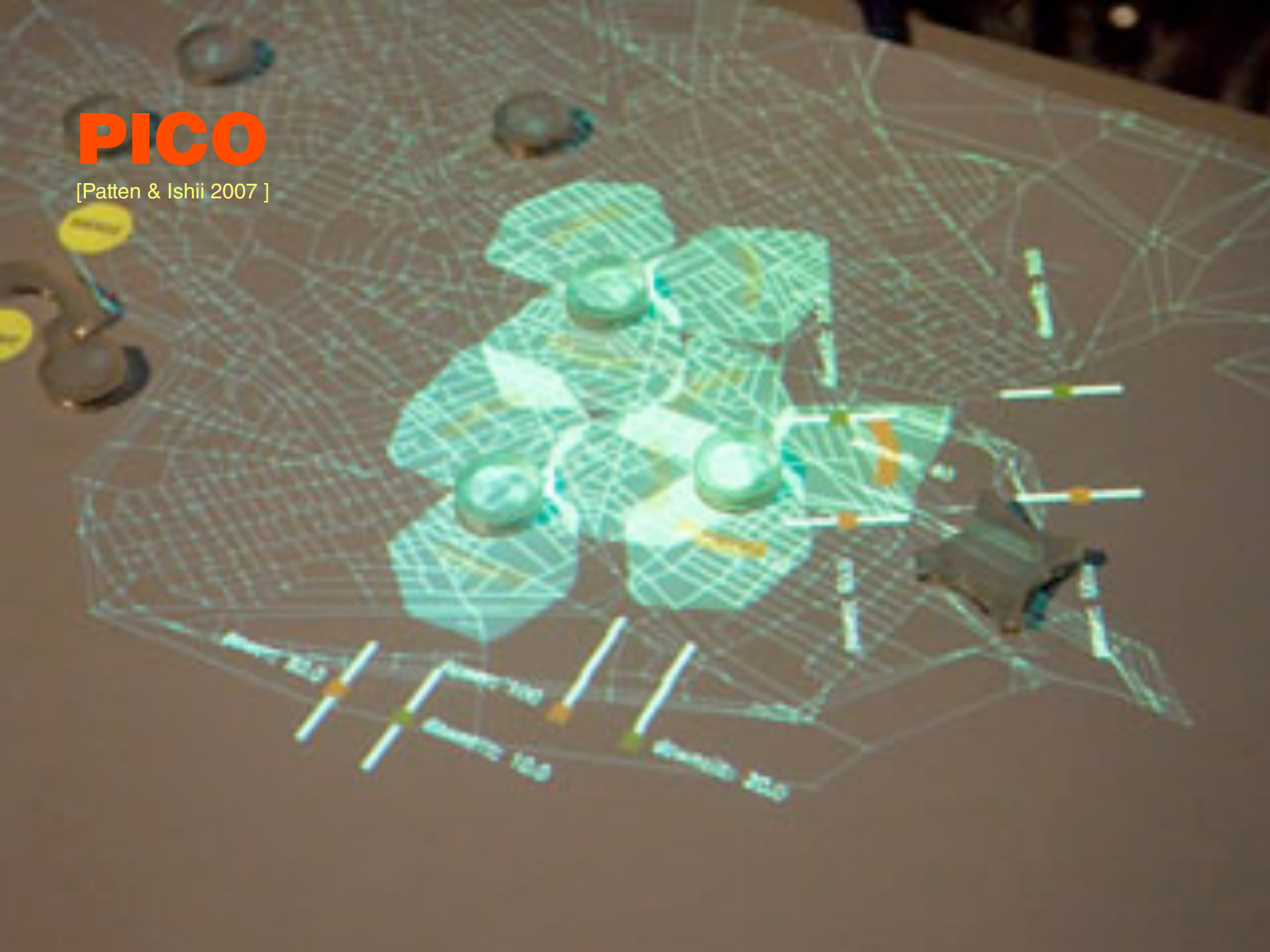
Actuated Workbench

[Pangaro, Maynes-Aminzade, & Ishii 2002]



PICO

[Patten & Ishii 2007]



Augmented everyday objects Embodiment of mechanisms for interactive control with tangible representations

TANGIBLE USER INTERFACES

Music bottles

[Ishii et al., 2000]



TANGIBLE USER INTERFACES

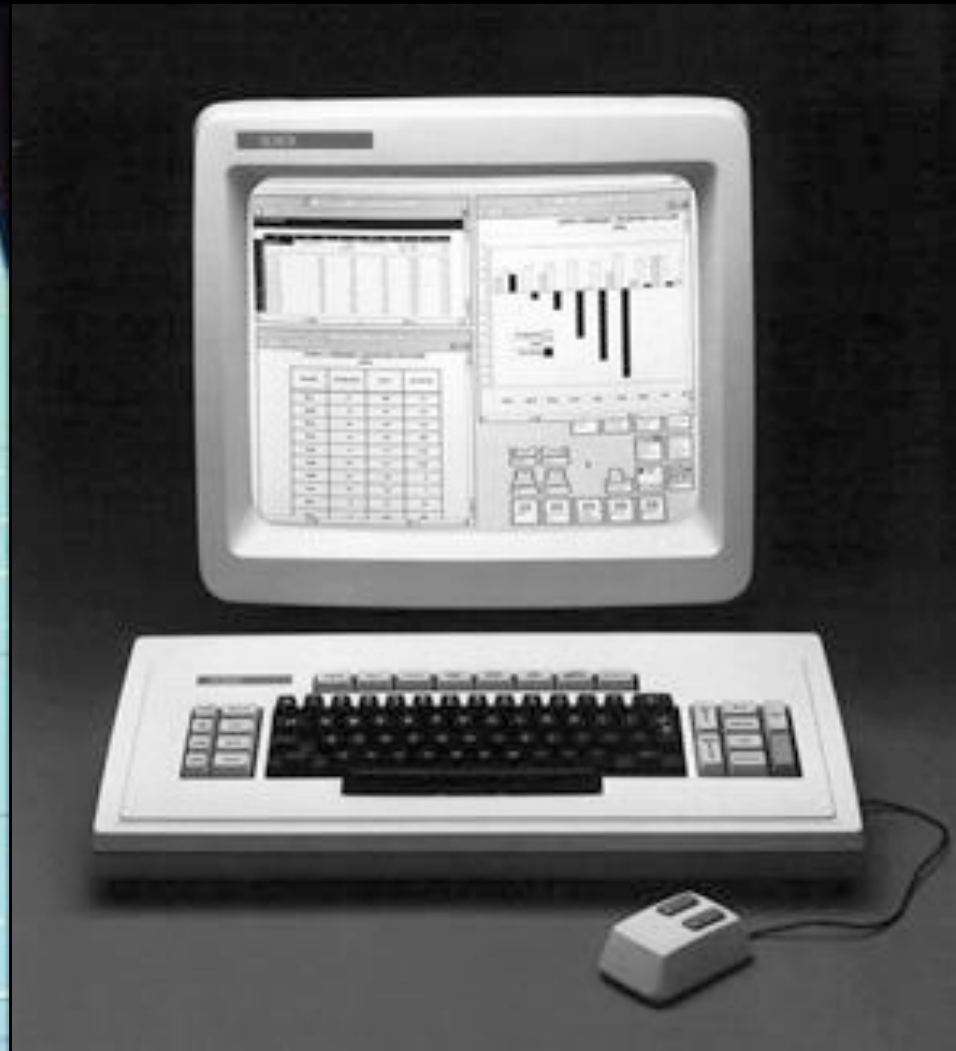
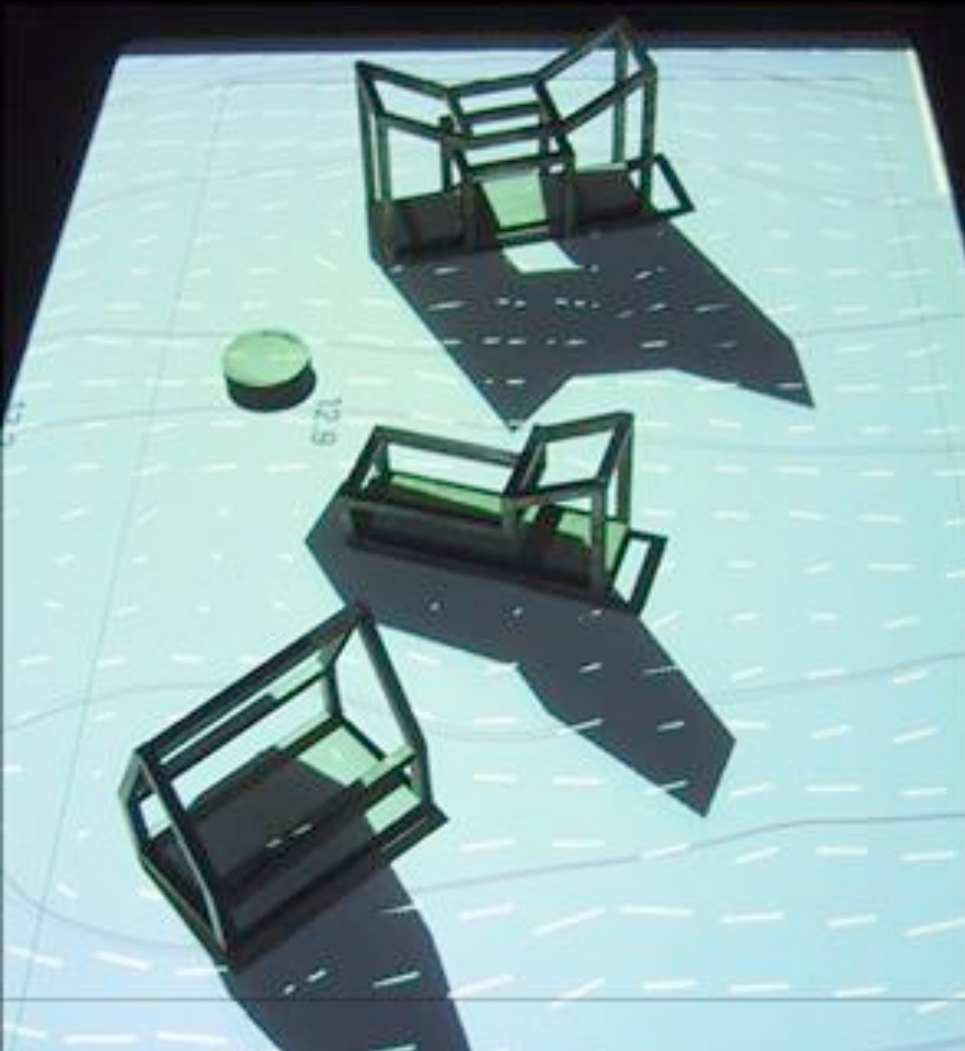
I/O Brush

[Ryokai, Marti, & Ishii, 2004]



TANGIBLE USER INTERFACES

TUI vs. GUI

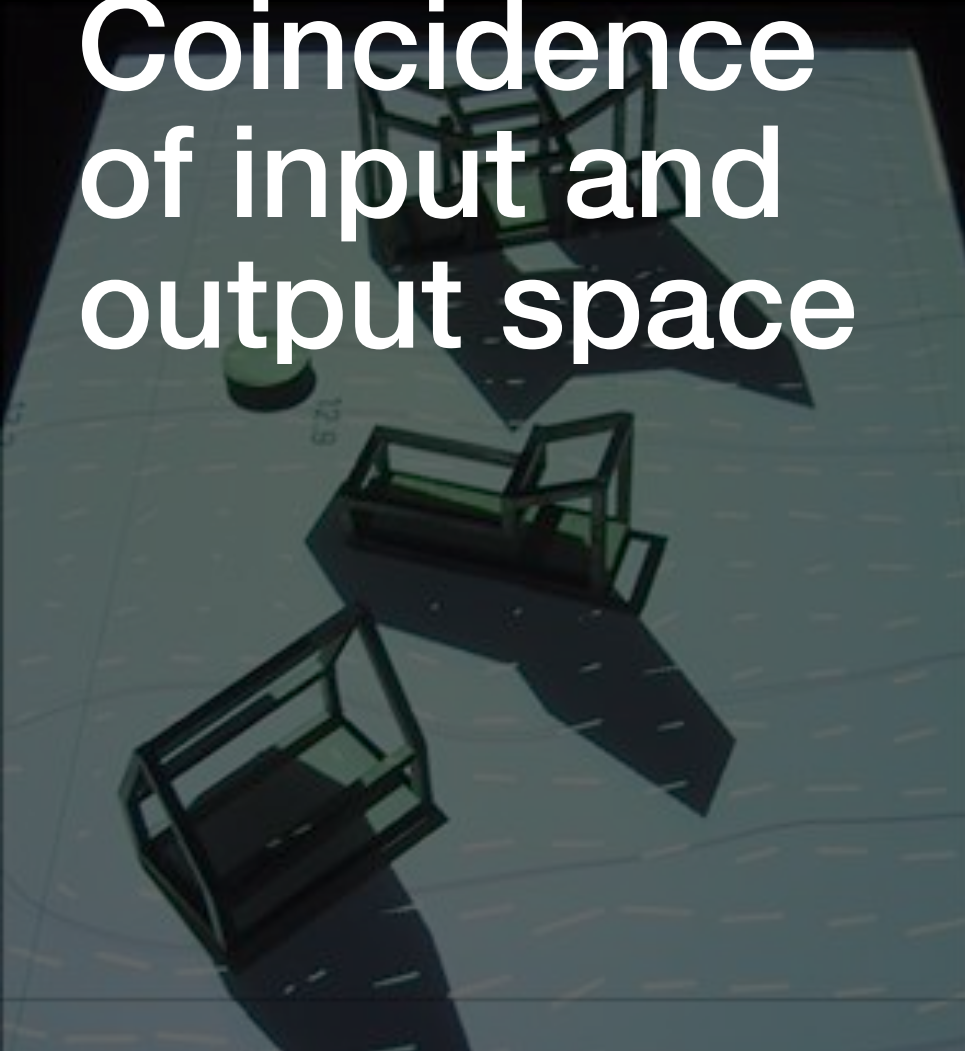


TUI

Tangible bits
Coincidence
of input and
output space

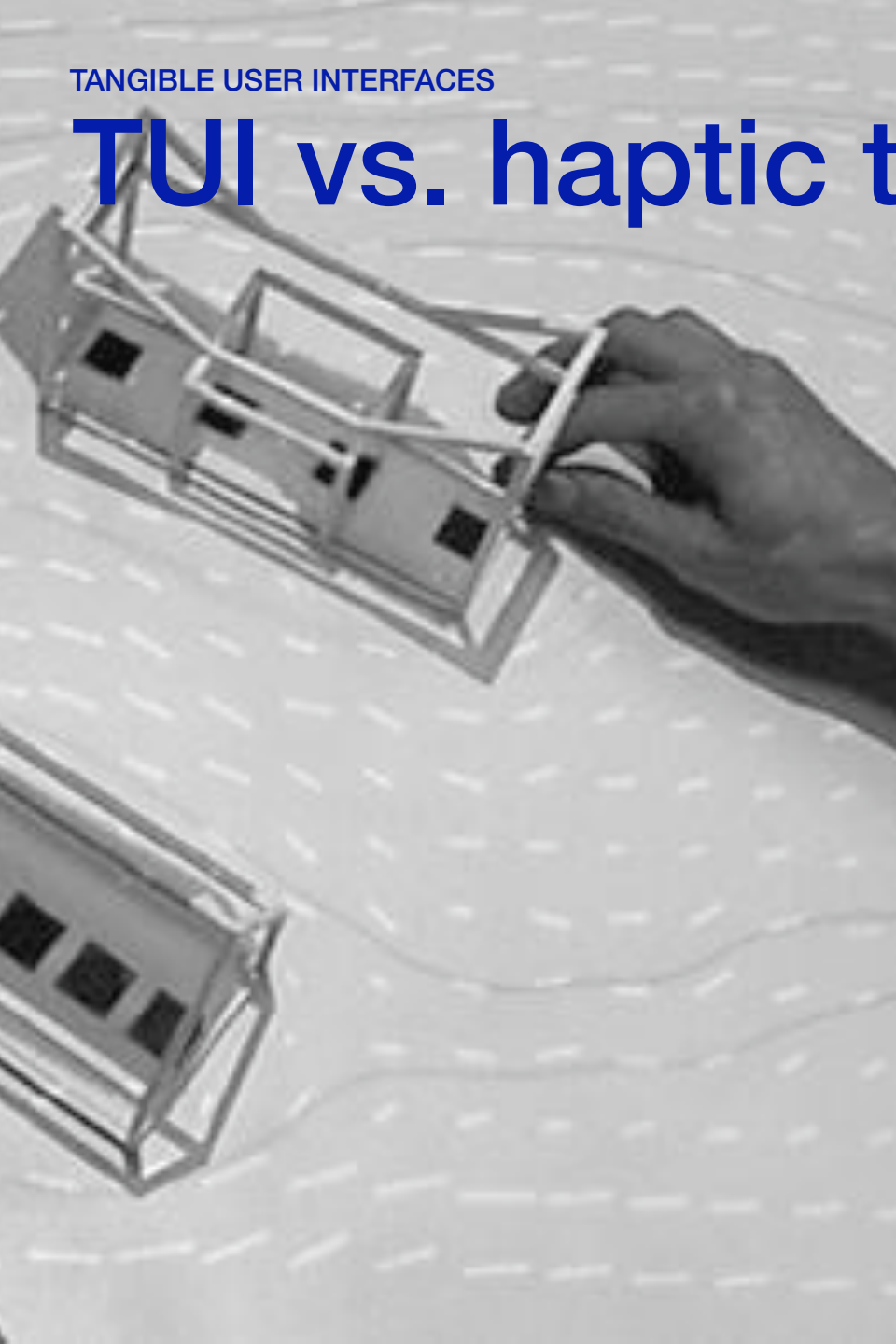
GUI

Painted bits
Generic
remote
control



TANGIBLE USER INTERFACES

TUI vs. haptic technology



TANGIBLE USER INTERFACES

TUI

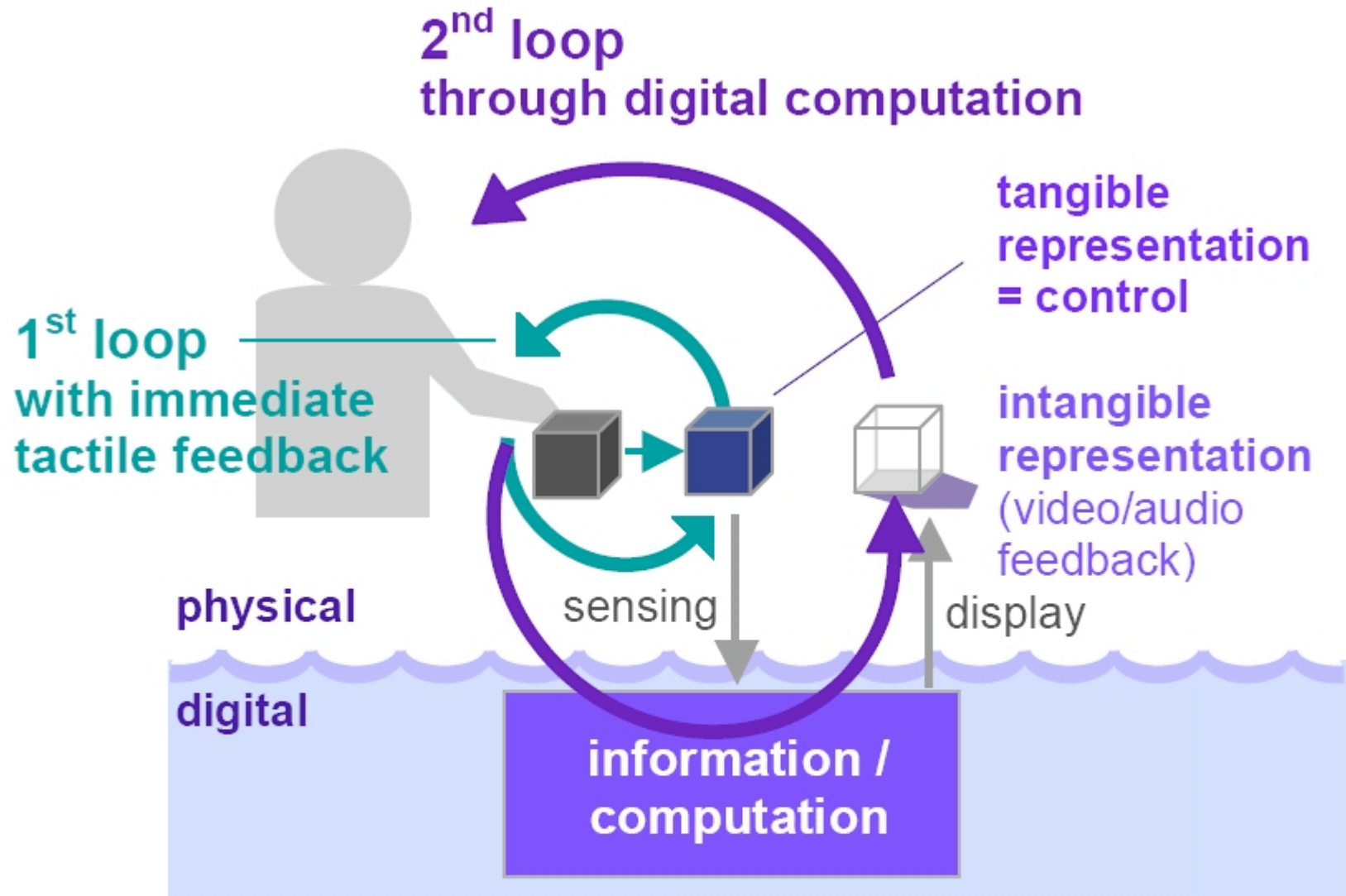
Coincidence
of input and

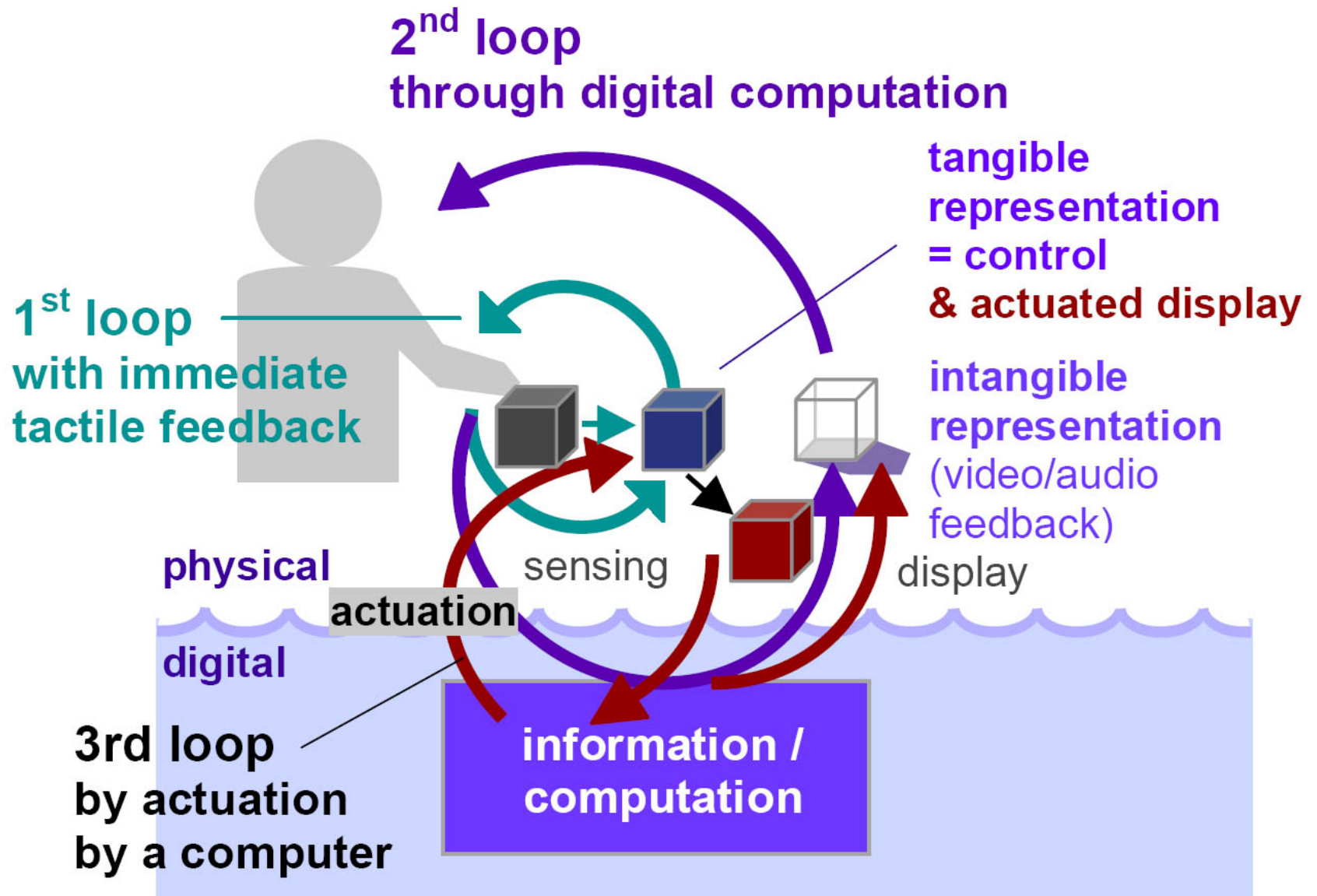
Haptic
technology

Mechanical
simulation of
touch

INTERACTION LOOP

Tangible User Interfaces





TUI interaction loop

Combining the skillful hand
with the reasoning mind



BEYOND DESKTOP

Ambient Media

Peripheral awareness

Peripheral awareness

What we are attuned to
without attending to explicitly.

[Weiser, 1995]



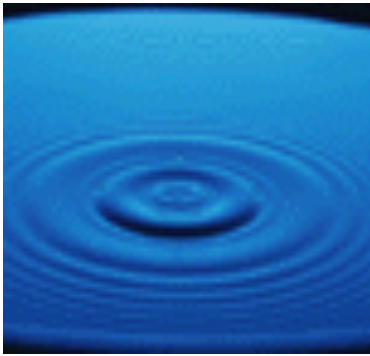
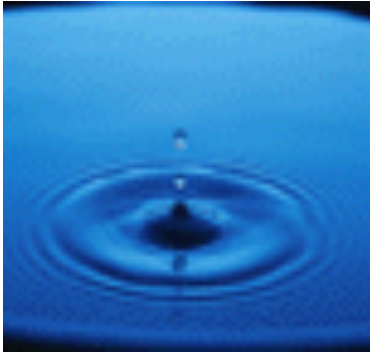






phia
nter

PSF



Peripheral awareness

What we are attuned to
without attending to explicitly.

[Weiser, 1995]

Calm technology

Engages both the center and the periphery of our attention, and moves back and forth between the two.

[Weiser, 1995]

PERIPHERAL AWARENESS

Livewire

[Jeremijenko , 1995]



Locatedness

We are connected effortlessly
to a myriad of familiar details.

[Weiser, 1995]

Foreground and background

[Buxton, 1995]

	FOREGROUND bursty	BACKGROUND persistent
HUMAN- HUMAN	conversation, telephone, video conf.	“Portholes”
HUMAN- COMPUTER	GUIs	smart house technology



[Buxton, 1995]

	FOREGROUND bursty	BACKGROUND persistent
HUMAN- HUMAN	conversation, telephone, video conf.	“Portholes”
HUMAN- COMPUTER	GUIs	smart house technology

Ambient media

Ambient media

Information conveyed via calm changes in the environment so that users are more able to focus on their primary tasks while staying aware of non-critical but important information that affects them.

[Pousman & Stasko, 2006]

AMBIENT MEDIA

Pinwheels: wind of bits

[Ishii et al., 1997]



AMBIENT MEDIA

ambientROOM

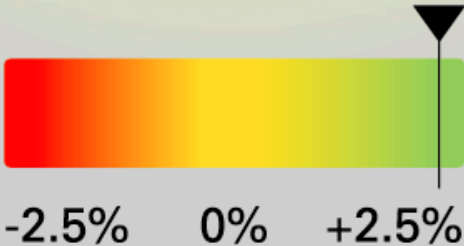
[Ishii et al., 1997]



AMBIENT MEDIA

Orb

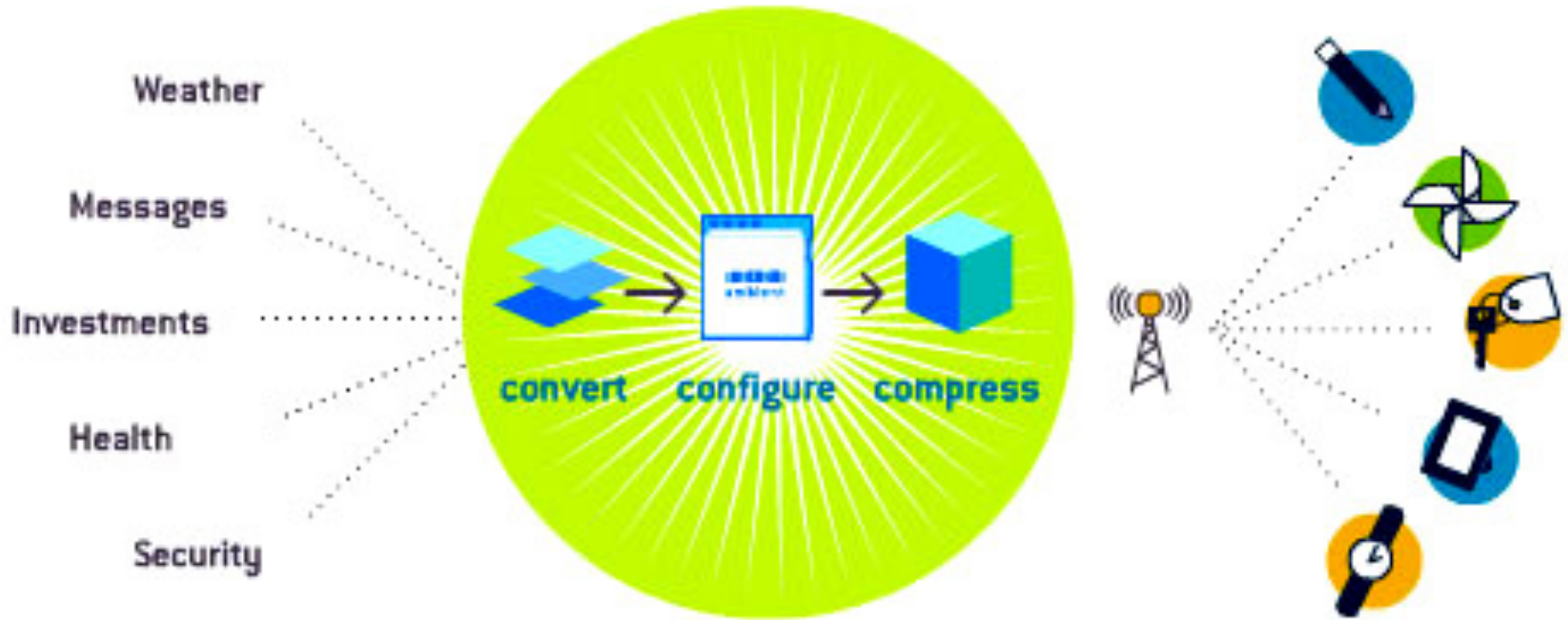
[Ambient Devices]



AMBIENT MEDIA

Orb

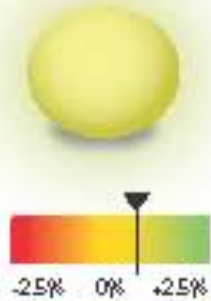
[Ambient Devices]



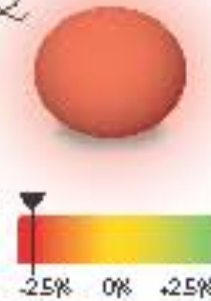
Orb

[Ambient Devices]

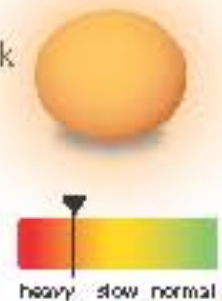
DOW
"Large blue-
chips are
rising"



NASDAQ
"Call the
broker"



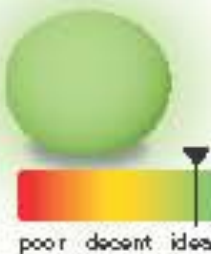
TRAFFIC
"Take the back
roads"



WEATHER
"Wear your
heavy coat
tomorrow."



GOLF
"Schedule a
weekend tee
time."



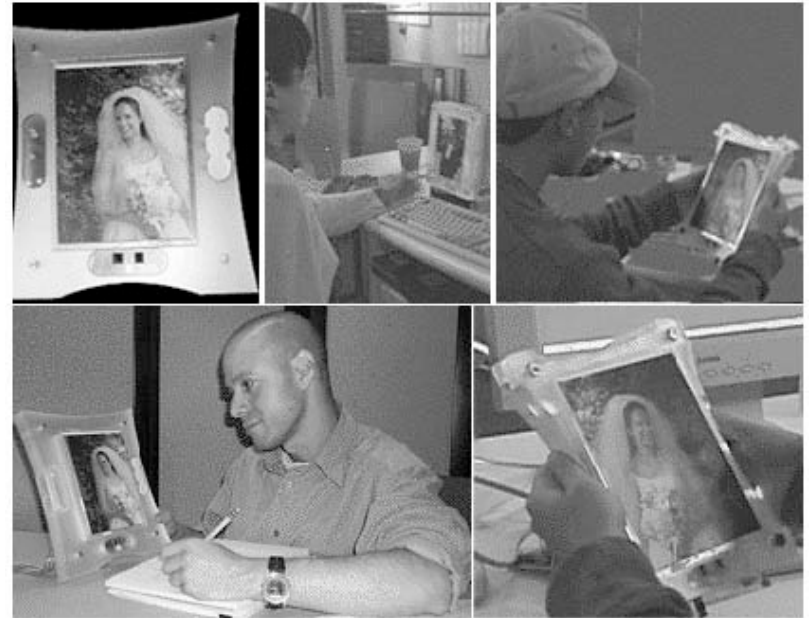
SAILING
"Light wind
today."



AMBIENT MEDIA

LumiTouch

[Chang, Resner et al., 2001]



AMBIENT MEDIA

iCom

[Agamanolis, 2003]



Design principles

1. Display important but not critical information
2. Can move from the periphery to the focus of attention and back again
3. Focus on representation in the environment
4. Provide subtle changes to reflect updates in information (should not be distracting)
5. Are aesthetically pleasing and environmentally appropriate

[Pousman & Stasko, 2006]

Representational fidelity

Representational fidelity

How the data from the world is encoded into patterns, pictures, words, or sounds.

[Pousman & Stasko, 2006]

AMBIENT MEDIA

Sign

SIGNS

Signified

The physical thing or idea that the sign stands for.



Signifier

The representation of the object, which could be a word, a picture, or a sound.



Sense

The understanding that an observer gets from seeing or experiencing either the signified or its signifier.

**Warm, hot, burn,
bright,
dangerous, etc.**

Signs

- Symbolic
- Iconic
- Indexical

[Pousman & Stasko, 2006]

SIGNS

Symbolic signs

Code or rule-following
conventions required

SIGNS

Symbolic signs

Language characters,
numbers



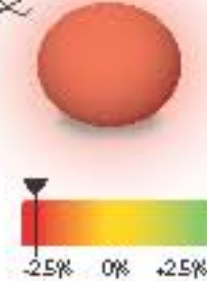
Symbolic signs

Abstract visual representations

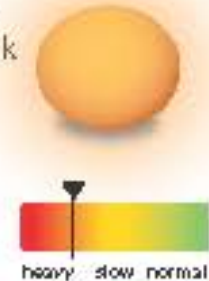
DOW
"Large blue-chips are rising"



NASDAQ
"Call the broker."



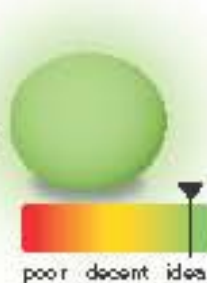
TRAFFIC
"Take the back roads."



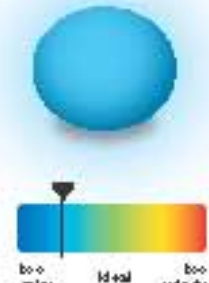
WEATHER
"Wear your heavy coat tomorrow."



GOLF
"Schedule a weekend tee time."



SAILING
"Light wind today."



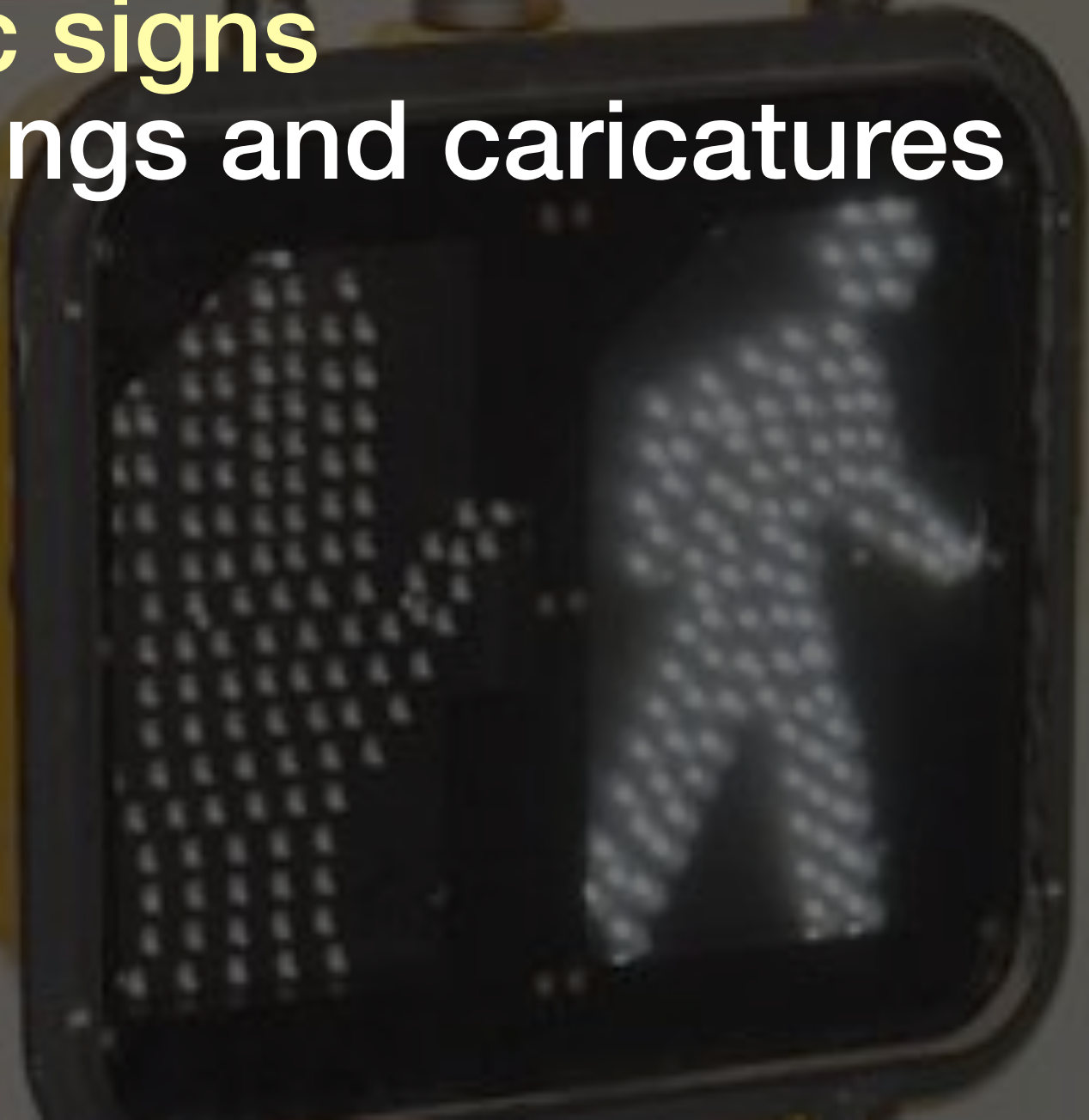
Iconic signs

An intermediate degree of
transparency to the signified
object

SIGNS

Iconic signs

Drawings and caricatures



SIGNS

Iconic signs Metaphors



Indexical signs

Directly connected to the signified.

Indexical signs

Natural signs



SIGNS

Indexical signs

Measuring instruments (scale, thermometer, clock)



SIGNS

Indexical signs

Measuring instruments
(weathercock, thermometer,
clock)



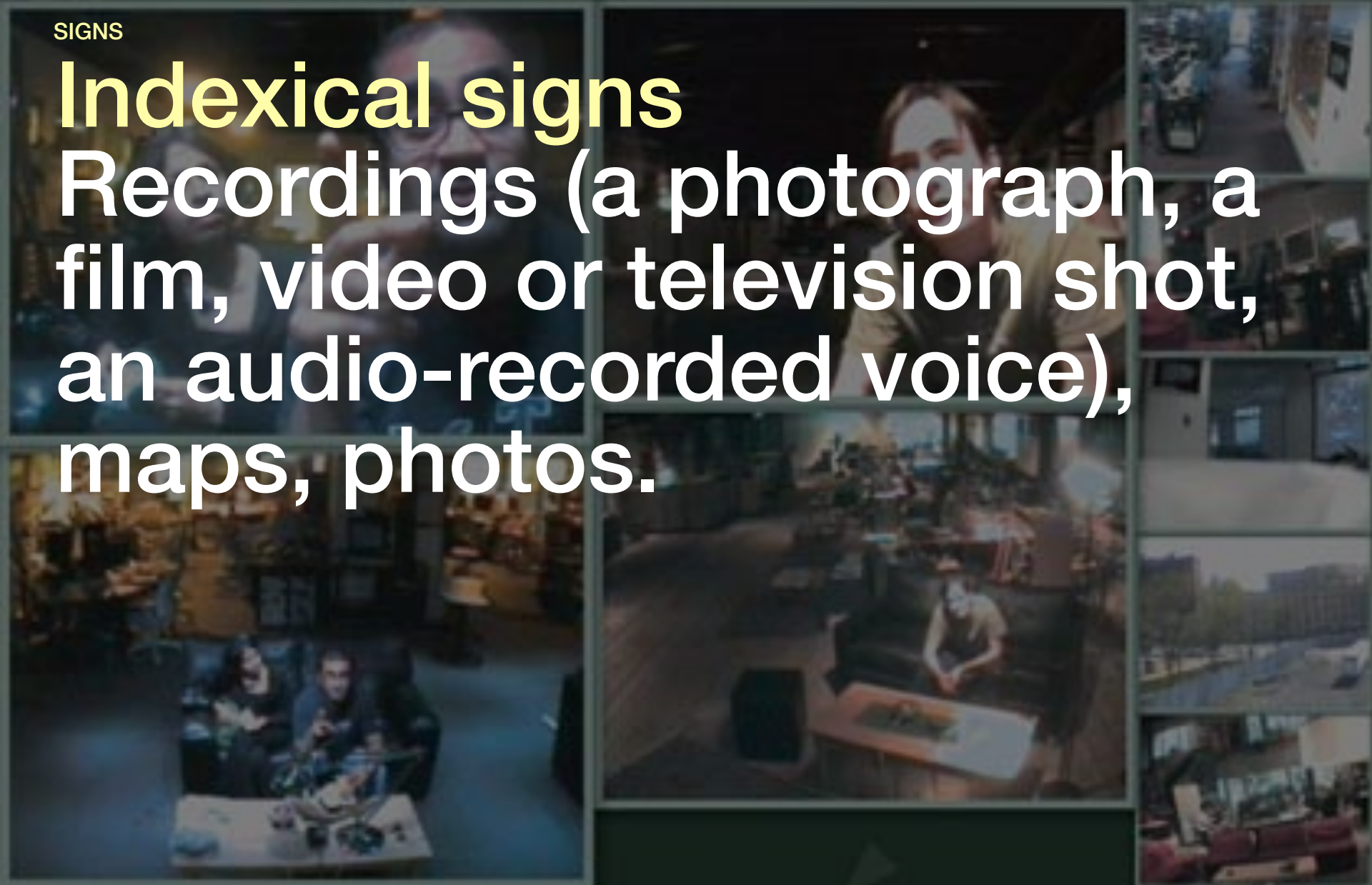
Indexical signs Signals



SIGNS

Indexical signs

Recordings (a photograph, a film, video or television shot, an audio-recorded voice), maps, photos.



SIGNS

Symbolic

Language characters, numbers, abstract mapping (e.g. colors of “orb”)

Iconic

Drawings, caricatures, metaphors

Indexical

Measuring instruments, maps, photos

Signs in context of use



to represent “snow flake” == **Iconic**

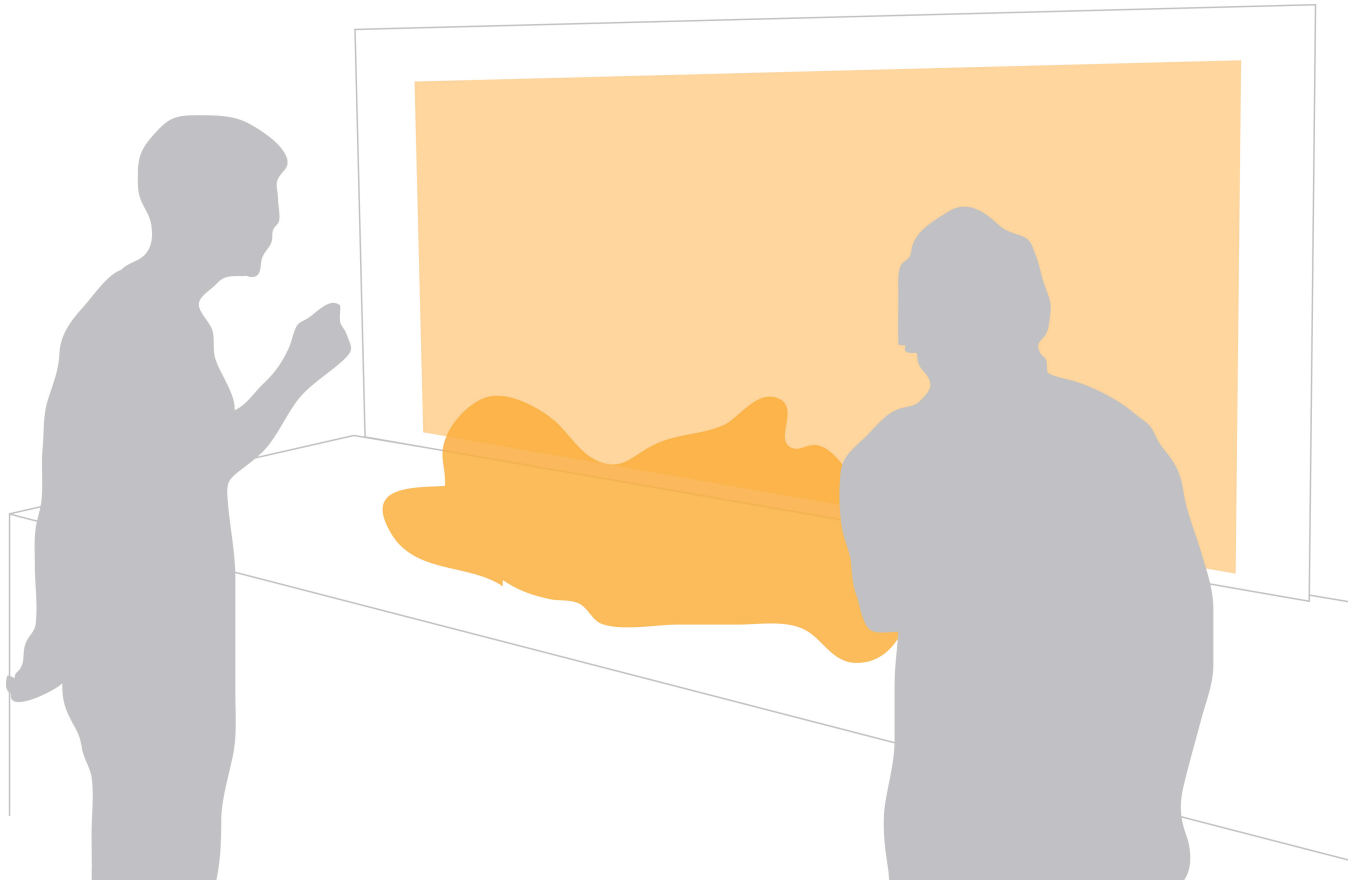
to represent “cold weather” == **Indexical**

to represent “GO for ski” == **Symbolic**

Course exhibition

1. Artifact

2. Print media

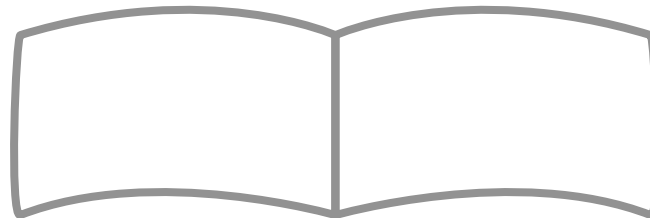
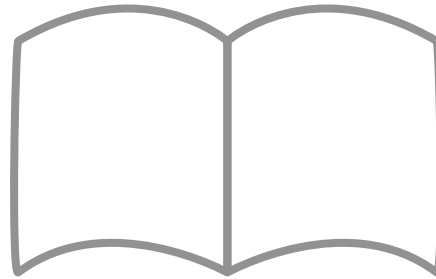
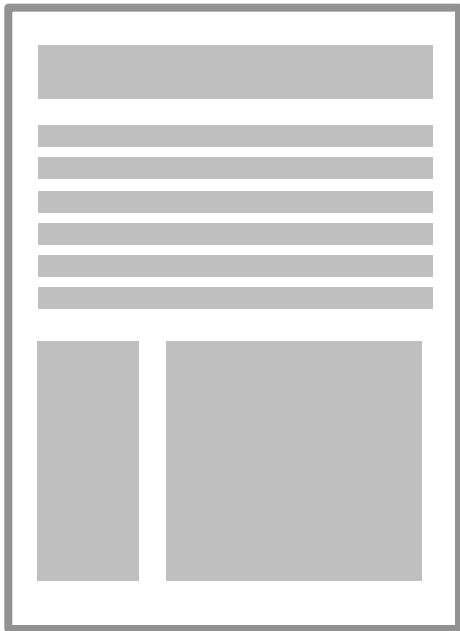


1. Artifact

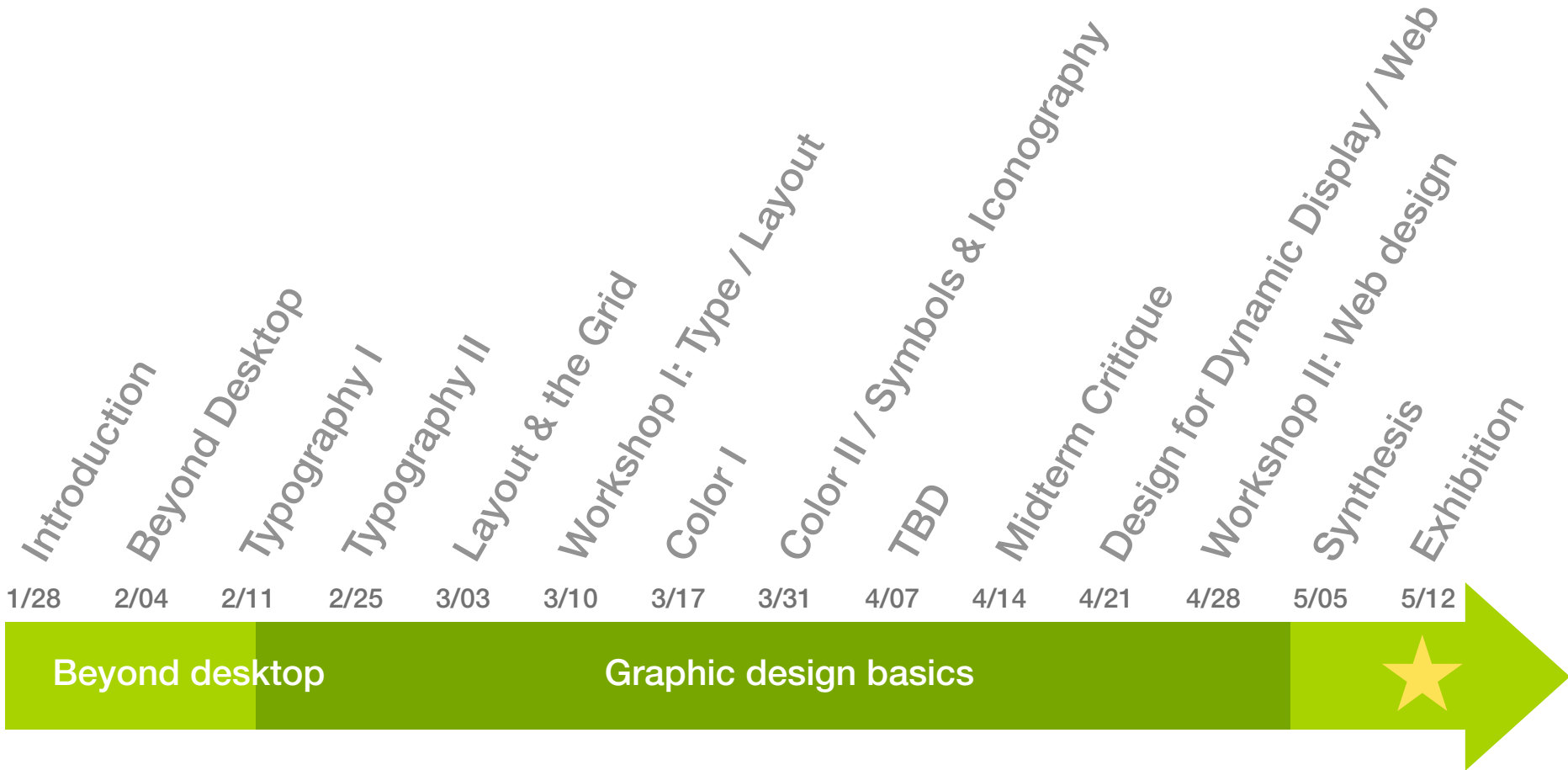
Website or a physical artifact you are working on.

2. Print media

Describe the process of your design work.



Course schedule



Beyond desktop

Graphic design basics



INTERFACE AESTHETICS

Week 3

Typography

Homework for week 3

Find two examples of type in your environment (i.e., not from the web).

- Successful type: text that you believe fits its purpose.
- Unsuccessful type: text that you believe does not fit its purpose.

Take a straight photo of each ‘found’ type example, minimizing distortion. For example, don’t take the photo at a strange angle. Post your photos by Sunday, February 10th.

INTERFACE AESTHETICS

Thanks!