2010 Design Research Society (DRS) international conference · **Design & Complexity**

designing for the periphery of our attention

a study on ambient information systems

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information systems

refers to all the persons, procedures and equipment designed, built, operated and maintained in order to collect, record, process, store, retrieve and display information, using different technologies.

(Houaiss & Villar, 2001)


Time Destination Plat Comments
10:30 Aberdeen
Calling at:
– On time National Express
Peterborough, York, Newcastle, Edinburgh, Edinburgh
10:35 Leeds
Calling at: Wakefield Westgate and Leeds.
– On time National Express
CAFE BAR & TROLLEY ONLY
Glasgow Central via
-Tweed, Edinburgh, Motherwell and Glasgow Central.
– On time National Express
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Wakefield Westgate and Leeds.
– On time National Express
CAFE BAR & TROLLEY ONLY
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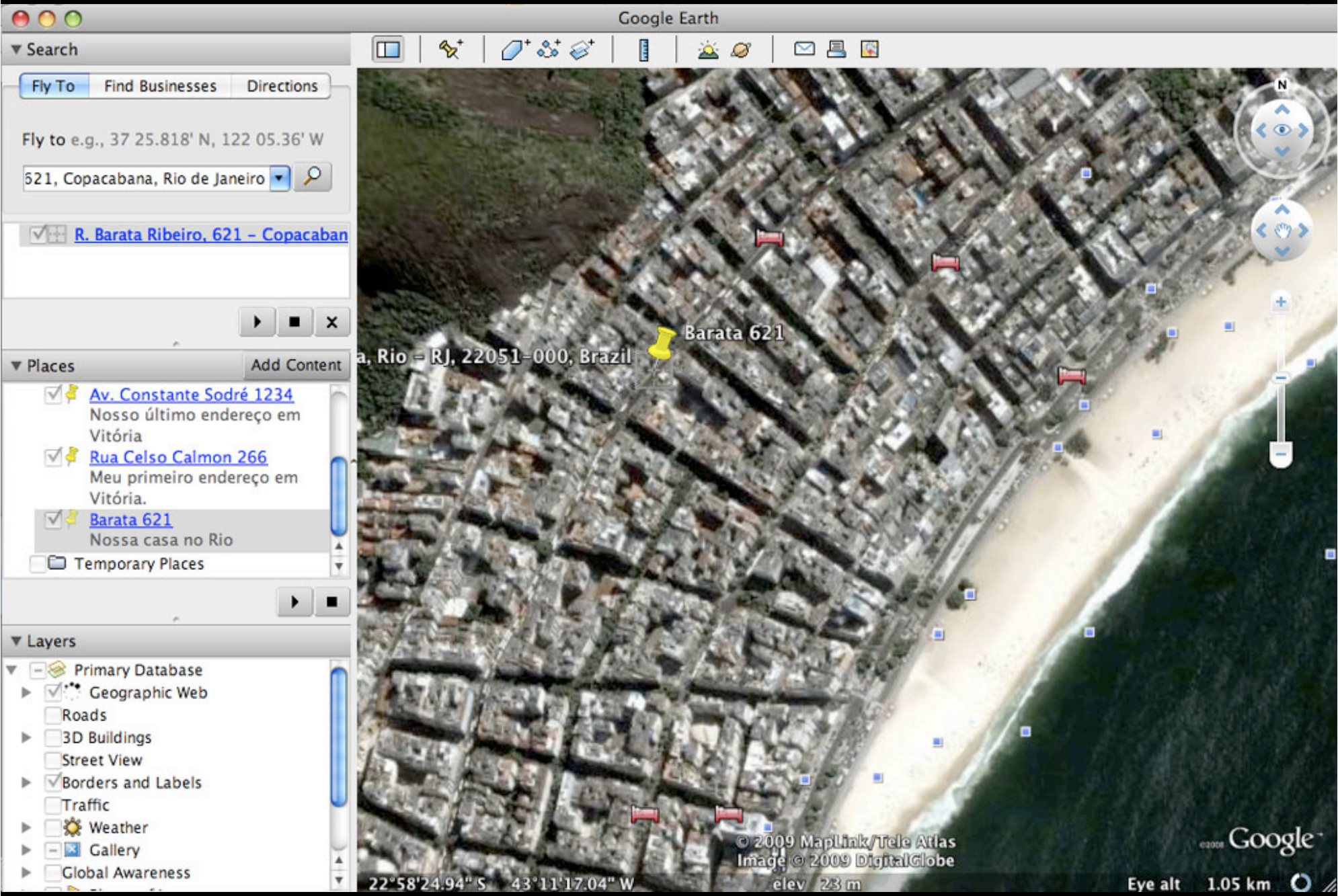
– On time Grand Central
– On time National Express
Stevenage, Peterbo
Time Destination Plat Comments
10:15 Cambridge
Calling at: Cambridge only.
10 On time First Cap Connect
The Cambridge Express
10:22 Peterborough
Calling at: , St Neots, Huntingdon and Peterborough.
11B On time First Cap Connect
10:36 Peterborough
Calling at: UR COACHES ONLY
– On time First Cap Connect
Finsbury Park, P
10:45 King's Lynn via
Calling at: he Cambridge Express
– On time First Cap Connect
Cambridge,
10:52 Cambridge
Calling at: aldock, Royston and Cambridge.
– On time First Cap Connect
xton
– On time First Cap Connect
sbury Park, Potters Bar, Hatfield, Welwyn Gdn City, Welwyn North, Knebworth,

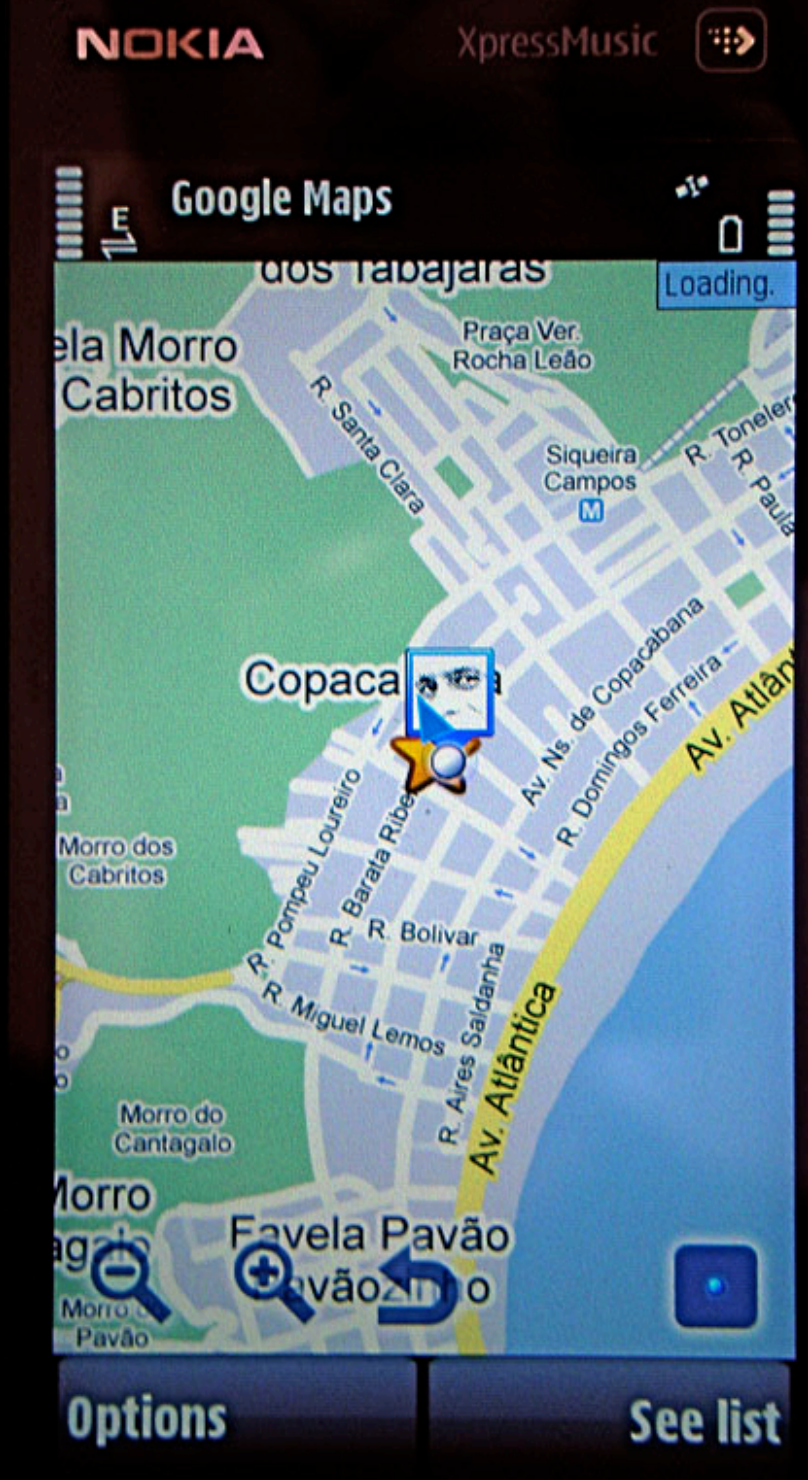

Designs for Building a Bridge with Stone to Cross the River Thames
from Blackfryers London to Southwark in Surry.
Is most Humbly Inscribed by your Hon.t most Obedient Humble Servant
Edward Oakley.
NB Each Design may be Extended or Contracted to any given Length and in some Proportion in Width and Solids Proferv'd
ALTERNATIVE
FIRST BRIDGE AT
February 1756

Lower floors
Ground floor
Upper floors

PLANTA 39


1
2
3
4
5
A
B
C
D
E
F
LAGOA RODRIGO DE FREITAS
Morro dos Cabritos
Morro do Sacopã
Ponta do Pires
LAGOA RODRIGO DE FREITAS
Morro do Cantagalo
Morro do Pavão
Ipanema
Copacabana
Arpoador
Forte de Copacabana
Ponta de Copacabana
Ponta do Arpoador
OCEANO ATLÂNTICO


Google Earth
Search
Fly To
Find Businesses
Directions
Fly to e.g., 37 25.818' N, 122 05.36' W
521, Copacabana, Rio de Janeiro
R. Barata Ribeiro, 621 - Copacaban
Places
Add Content
Av. Constante Sodré 1234
Nosso último endereço em Vitória
Rua Celso Calmon 266
Meu primeiro endereço em Vitória.
Barata 621
Nossa casa no Rio
Temporary Places
Layers
Primary Database
Geographic Web
Roads
3D Buildings
Street View
Borders and Labels
Traffic
Weather
Gallery
Global Awareness
Barata 621
a, Rio - RJ, 22051-000, Brazil
© 2009 MapLink/Tele Atlas
Image © 2009 DigitalGlobe
Google
22°58'24.94" S 43°11'17.04" W
elev 23 m
Eye alt 1.05 km


NOKIA
XpressMusic
Google Maps
Loading.
Praça Ver.
Rocha Leão
R. Santa Clara
Siqueira
Campos
R. Toneler
R. Paula
Av. Ns. de Copacabana
R. Domingos Ferreira
Av. Atlân
R. Pompeu Loureiro
R. Barata Ribe
R. Bolivar
R. Miguel Lemos
R. Aires Saldanha
Av. Atlântica
Morro dos
Cabritos
Morro do
Cantagalo
Favela Pavão
Pavão
Options
See list

the medium influence the way we perceive, comprehend and use information

media creates environments

environment implies behavior

shush!

in which environment are we living?


City Chill

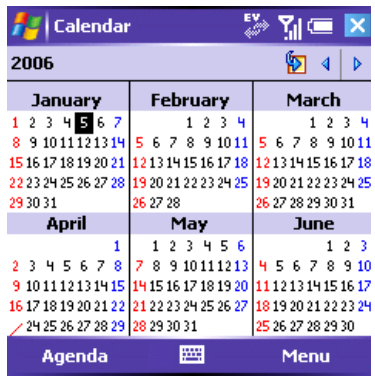

FREEZER

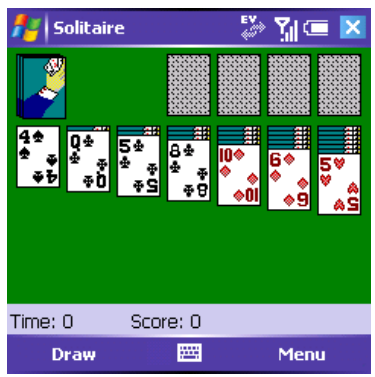

Infrared port
Ringer on/off switch
Stylus
Antenna
Expansion slot
Camera (back)
2.3" W x 4.4" H x 0.9" D, 6.4 oz
Speaker (back)
Volume button
Integrated Bluetooth® (internal)
Customizable side button
240x240 color display
Left action key
Right action key
Phone/Send
Power/End
Start button
OK button
5-way navigator
Headset Jack
Multi-connector
Microphone
palm
verizon
Start
10:19
Verizon Wireless
Type a name or number
Mary (w)
Page (w)
Monday: Staff Meeting
10:00AM-11:00AM (Conference ...
Search...
Messaging
Menu
Treo

Many functions and programs

Bubble Breaker
Calculator
Camera (photos & video)
Downloads (Verizon)
File Explorer
Internet Explorer Mobile
Microsoft® Office Mobile
- Word Mobile™
- Excel® Mobile
- PowerPoint® Mobile
Microsoft® Office Outlook® Mobile
- Email
- Calendar
- Contacts
- Tasks
- Notes
Phone
Pocket MSN®
Quick Tour
Search
SMS & MMS Messaging
Solitaire
Sounds Manager
Terminal Services Client
Voice Command
Windows Media® Player Mobile
Wireless Sync Downloader

Different interfaces to deal with in order to use the product





different trends in product development

the general concept of the product remains the same

evolution through time doesn't affect too much the way we use the product

limited functions

trend in computer technology

the general concept of the product evolves through time

as the product evolves, this evolution affects the way we use the product

products are multifunctional

pervasive computing

pervasive computing (also known as Ubiquitous Computing or simply ubicomp) is a post-desktop model of human-computer interaction in which **information processing has been integrated into everyday objects and activities.**

in pervasive computing, ordinary objects not only have computational resources; **they are networked, connected in a way that they can share information.**

pervasive computing

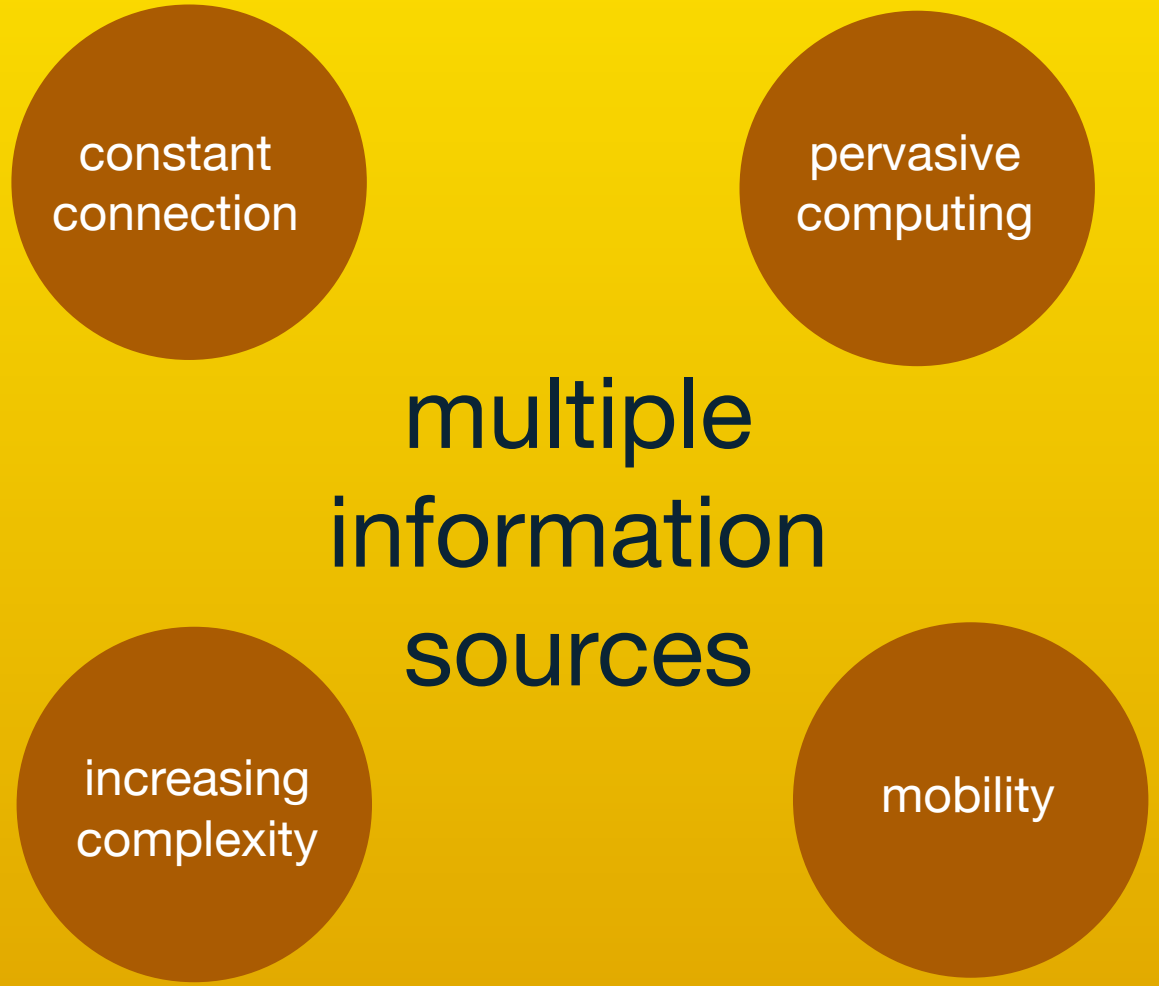
anything can be a “node” of a complex information system

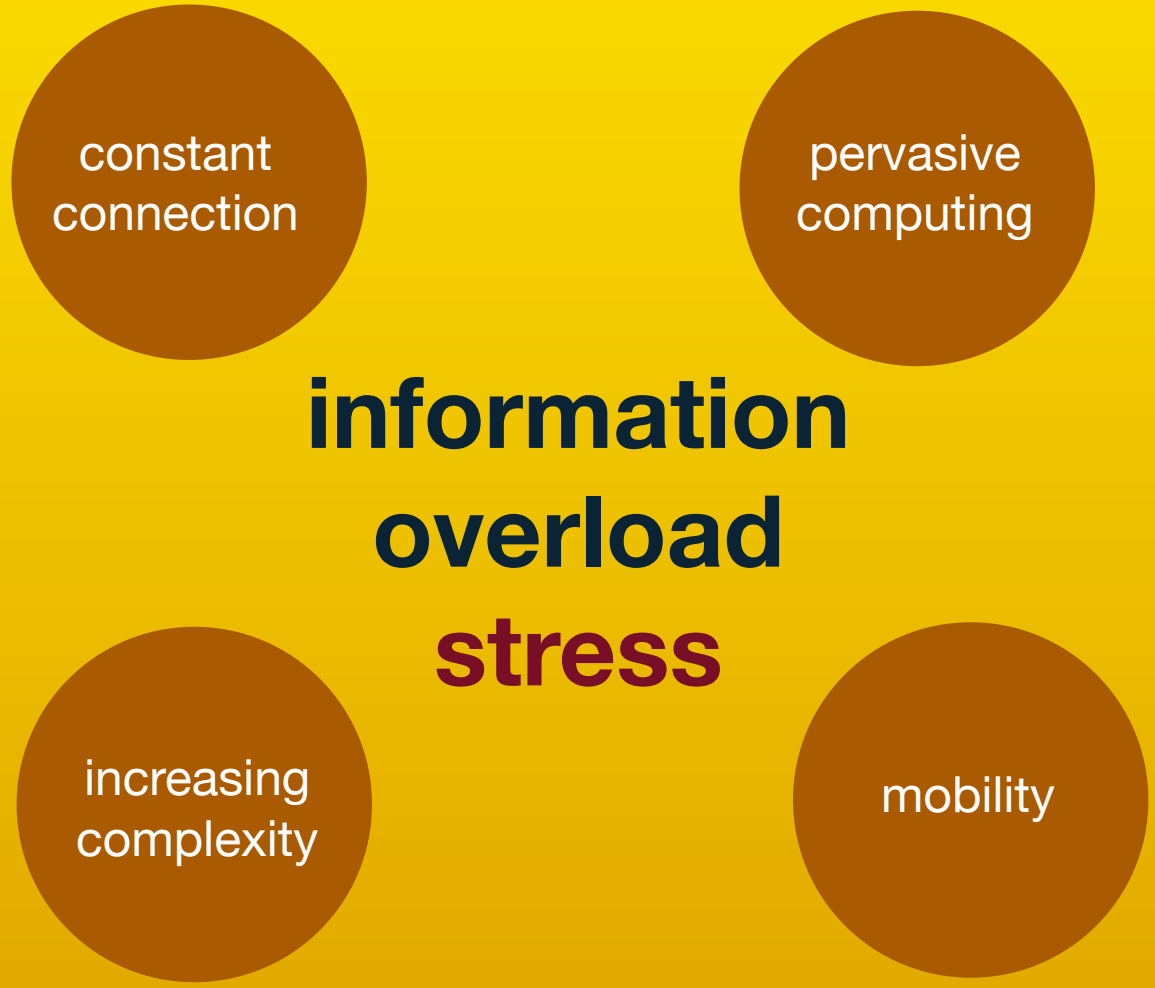
multiple information sources

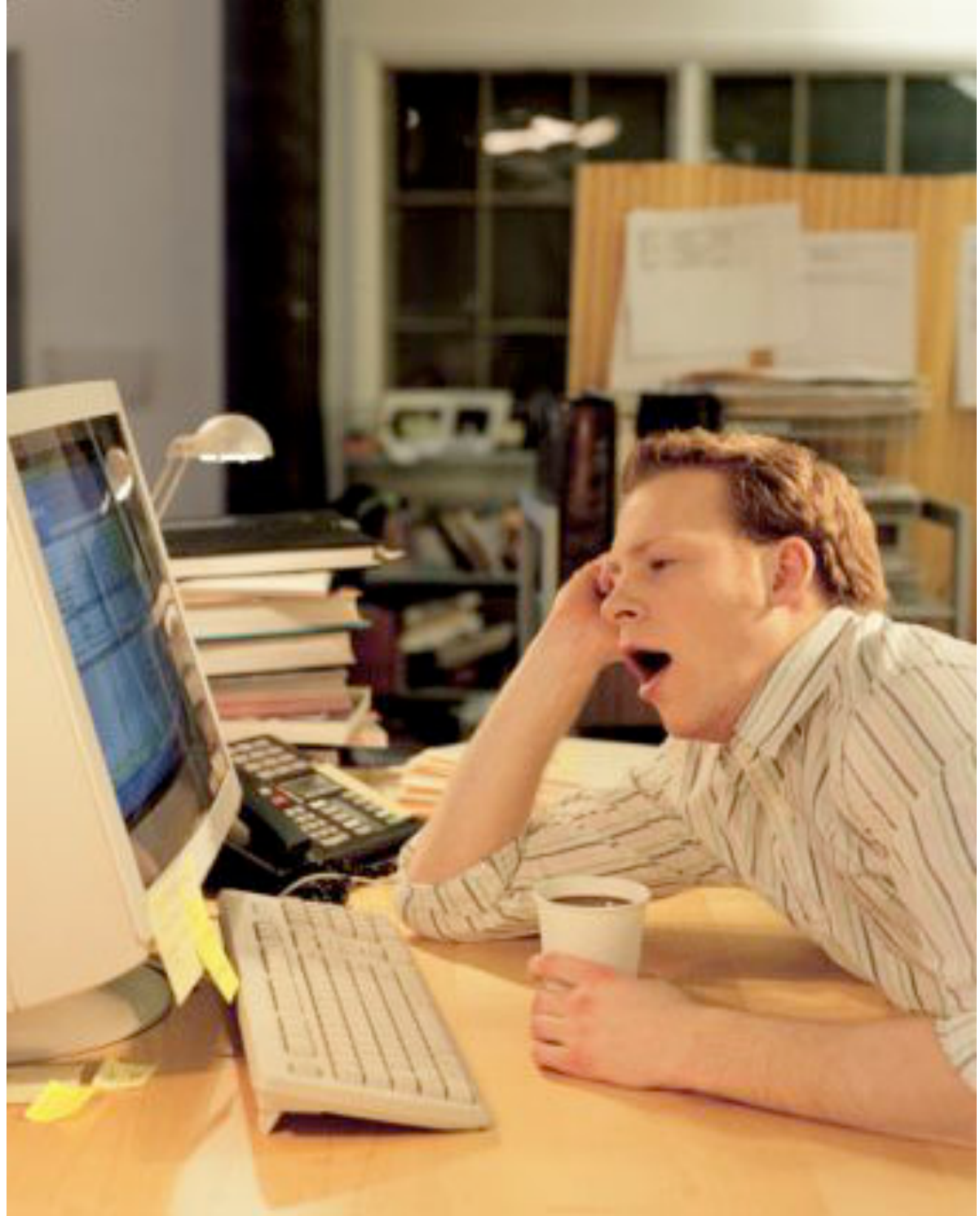
in different formats and contexts

Pileus Internet Umbrella (Takashi Matsumoto, Sho Hashimoto, Keio University)
http://www.pileus.net/

Hug Shirt
http://www.cutecircuit.com


constant connection
pervasive computing
multiple information sources
increasing complexity
mobility


constant connection
pervasive computing
information overload
stress
increasing complexity
mobility



how can we make it less stressful?

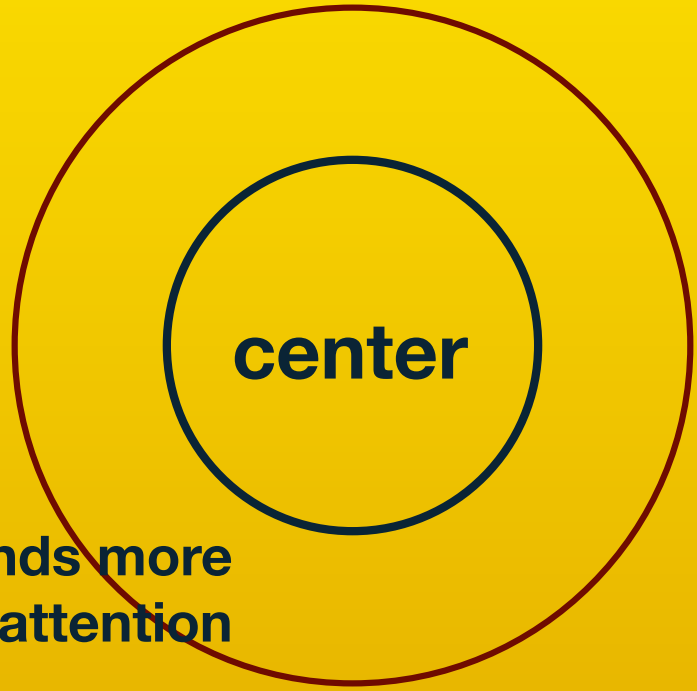
not all information is important

all the time

information must be available,
but not all information needs to
be **in the center of our attention**

Mark Weiser's concept of **calm technology**

attention // perception



demands more attention

more stressful

more rational response

works in the background, demands little attention

less stressful

more intuitive response

ambient information systems

most common application of the **calm technology** concept

- publish information in a nonintrusive manner
- demand little attention
- information is embedded in the surroundings
- work in the periphery of our attention
- preattentive processing

dangling string

Natalie Jeremijenko,

Xerox PARC

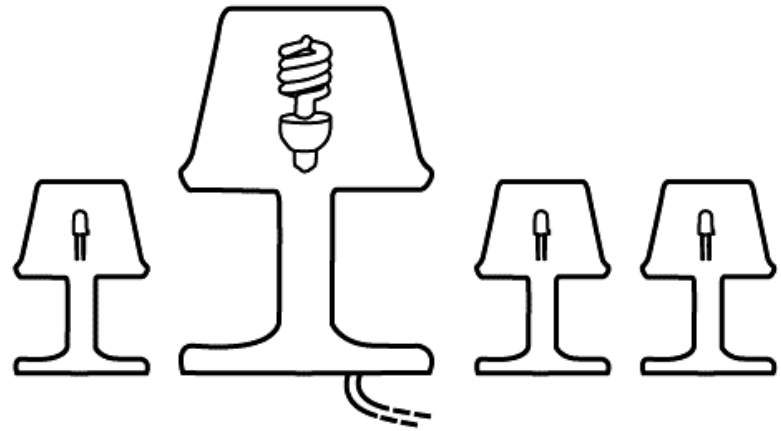
(80's)

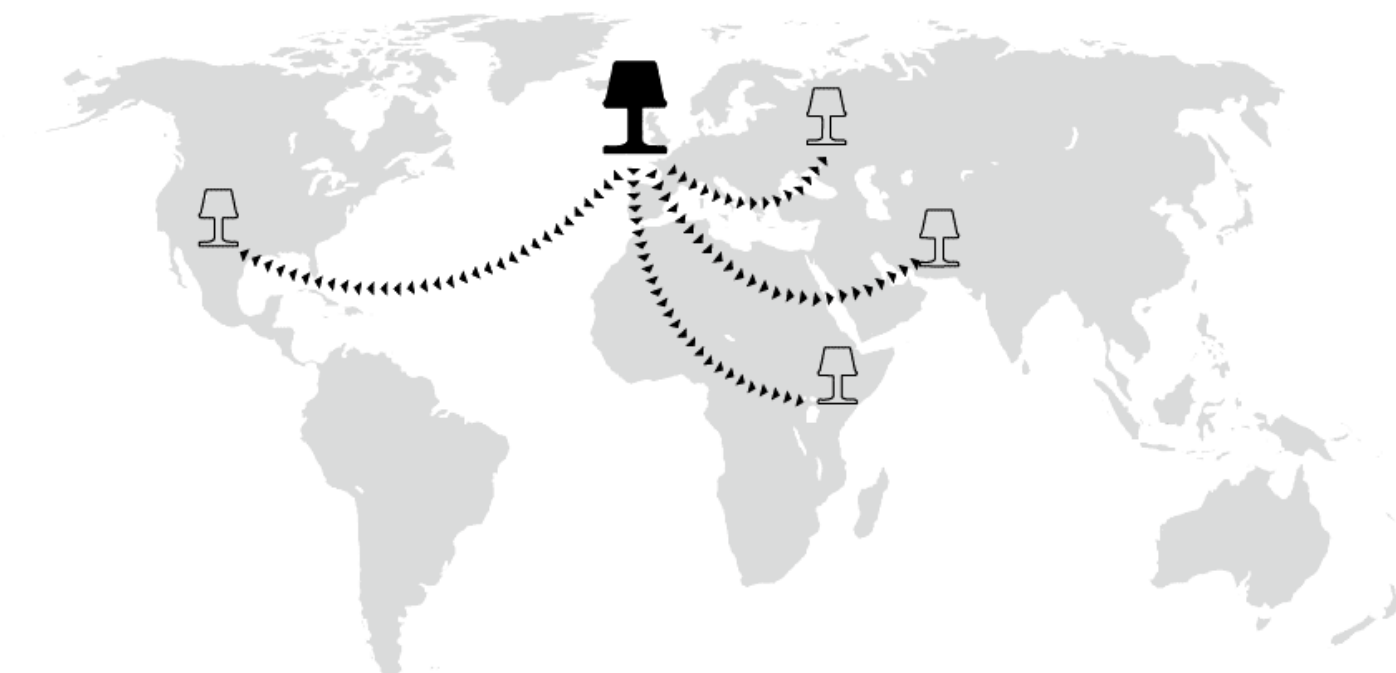
galo meteorológico (weather rooster)

ambient umbrella


datafountain
¥
€
$

goodnight lamp



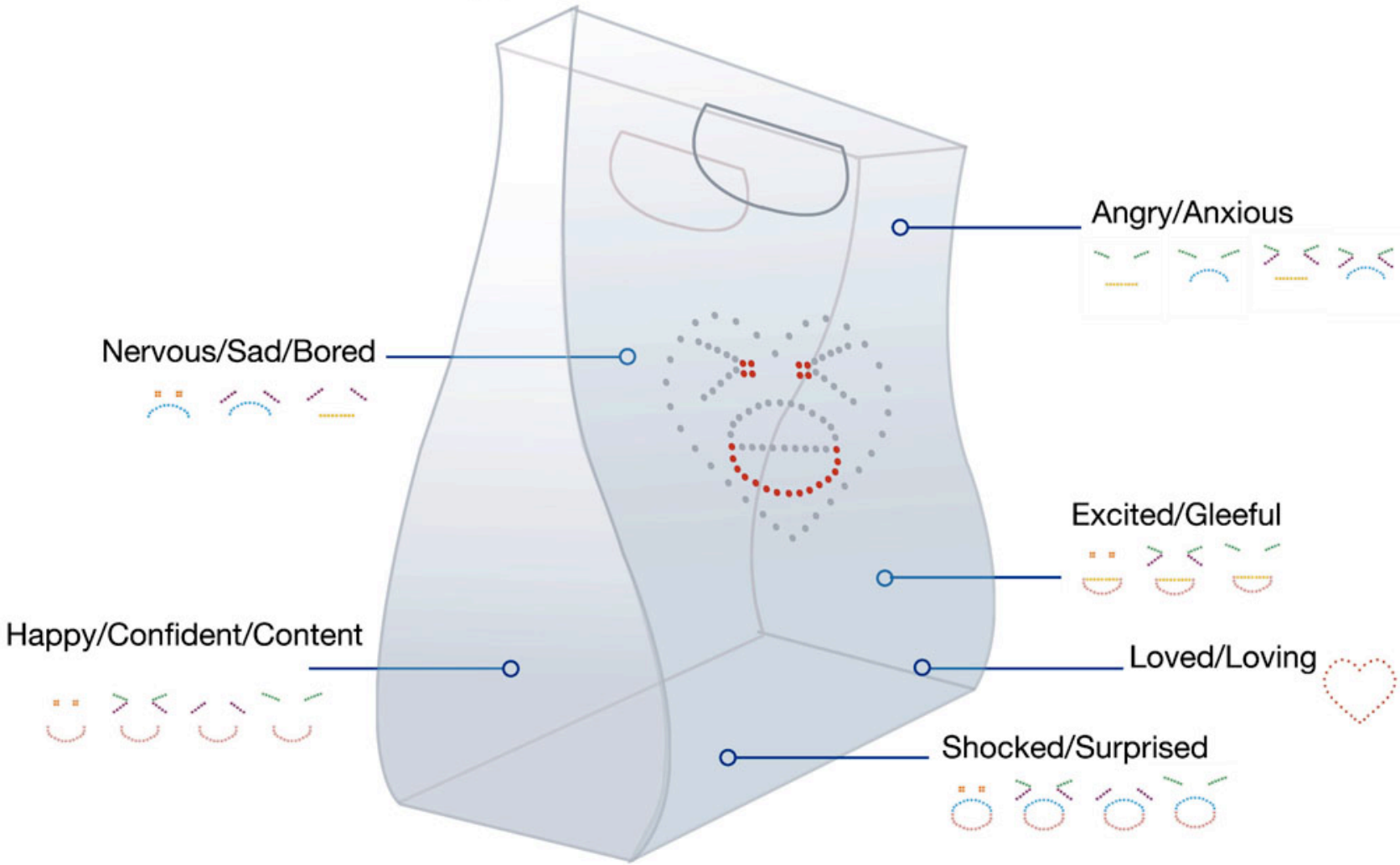


thirsty light

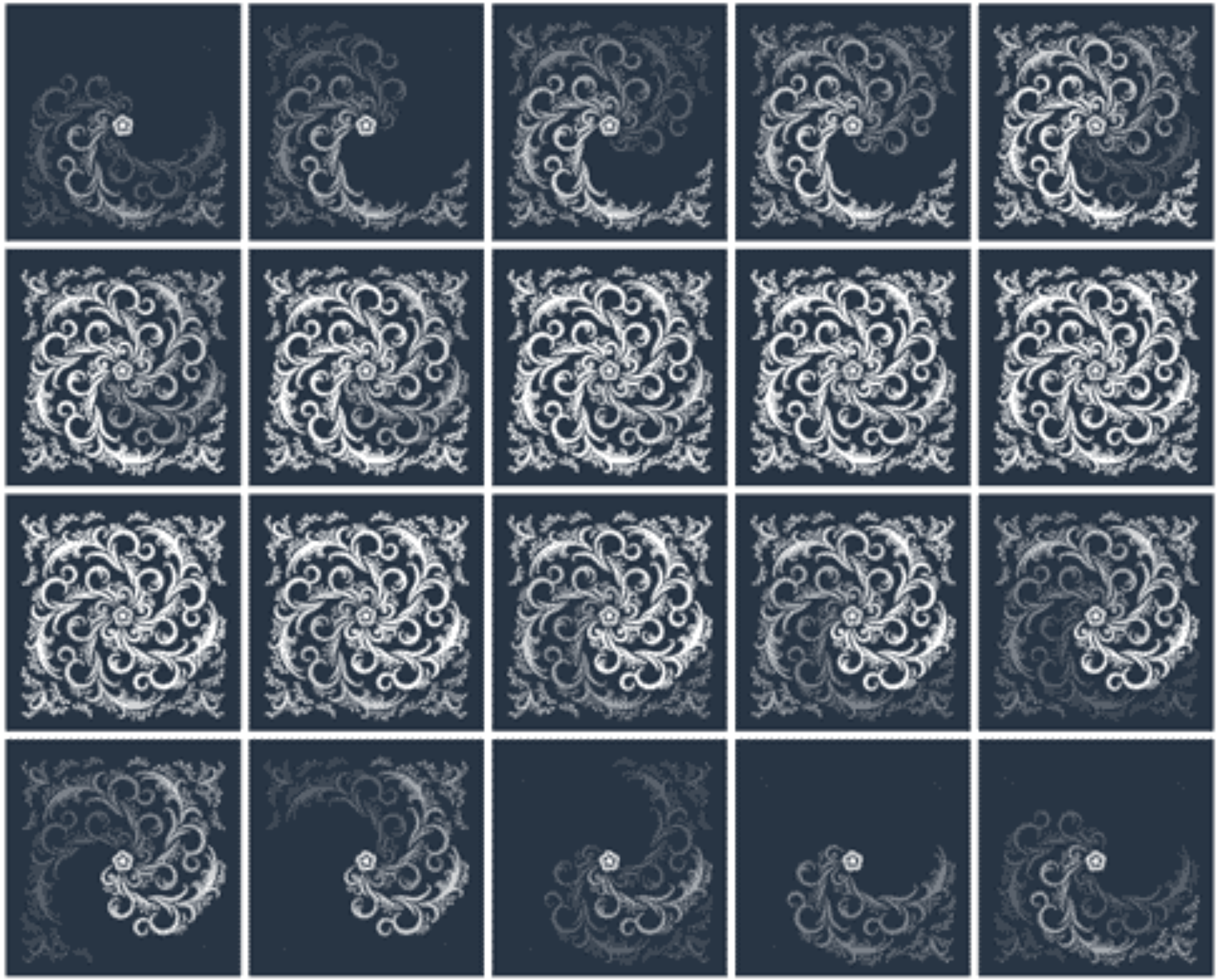

ladybag

ladybag

Emotion to emoticon mapping



weather patterns



ambient information systems

general guidelines

- not suited for critical data monitoring
- works better with coarse data
- not suited for complex data analysis

ambient information systems

some conclusions

- we can create information systems that are fun
- having access to more information doesn’t necessarily mean more stress
- the periphery of our attention can be explored for communicating without overburdening us

topics for future research

- how to design information systems that do not draw our attention, acting in the periphery?
- why not design for the other senses, besides vision?
- which metrics and evaluation methods should we use to assess the effectiveness of ambient information systems?
- are there types of information that are more appropriate to these systems?

preliminary findings about perception //attention // preattentive processing

based on psychology studies

- influenced by previous knowledge and memory

preliminary findings about perception //attention // preattentive processing

based on psychology studies

- influenced by previous knowledge and memory
- influenced by the nature of the information

thank you
merci

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