

Hybridized digital-physical worlds



Nicolas Nova
Media and Design Lab / EPFL

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what?

how?

current trends?

design issues?

Vocabulary of **hybridity**

linkage, merging, fusion, linkage, interconnection, binding, assemblage, amalgam, amalgamation, blend, blending, coadunation, coalescence, coalition, commingling, commixture, **hybridization**, compound, convergence, immixture, integration, intermixture, junction, merger, merging, mixture, smelting, synthesis, unification, union, uniting, welding, assimilation, alliance, interfusion, soup, salmagundi

research about how to design for **hybridization** led to:

pervasive computing, ubiquitous computing, everywhere, wearable computing, mobile computing, things that think, calm computing, continuous computing, ambient intelligence, digital-physical computing, internet of things, networked objects, augmented reality, mixed reality, geospatial web, locative media, physical metaverse...

(all of these allow the digital-physical convergence)

underlying technologies

- identification (RFID, ipv6, visual tags...)
- sensors
 - positioning (GPS, Wifi, CellID...)
 - other information (pressure, temperature, etc.)
- communication (tcp/ip, BT/Wifi, zigbee, redTacton...)
- computation



“Media spaces LINK physical spaces through digital mediums.
Mixed reality environments FUSE physical and digital
environments.
Ubiquitous computing environments EMBED the digital into
physical environments.
Hybrid ecologies MERGE multiple environments, physical and
digital.”

(Crabtree and Rodden, 2007)

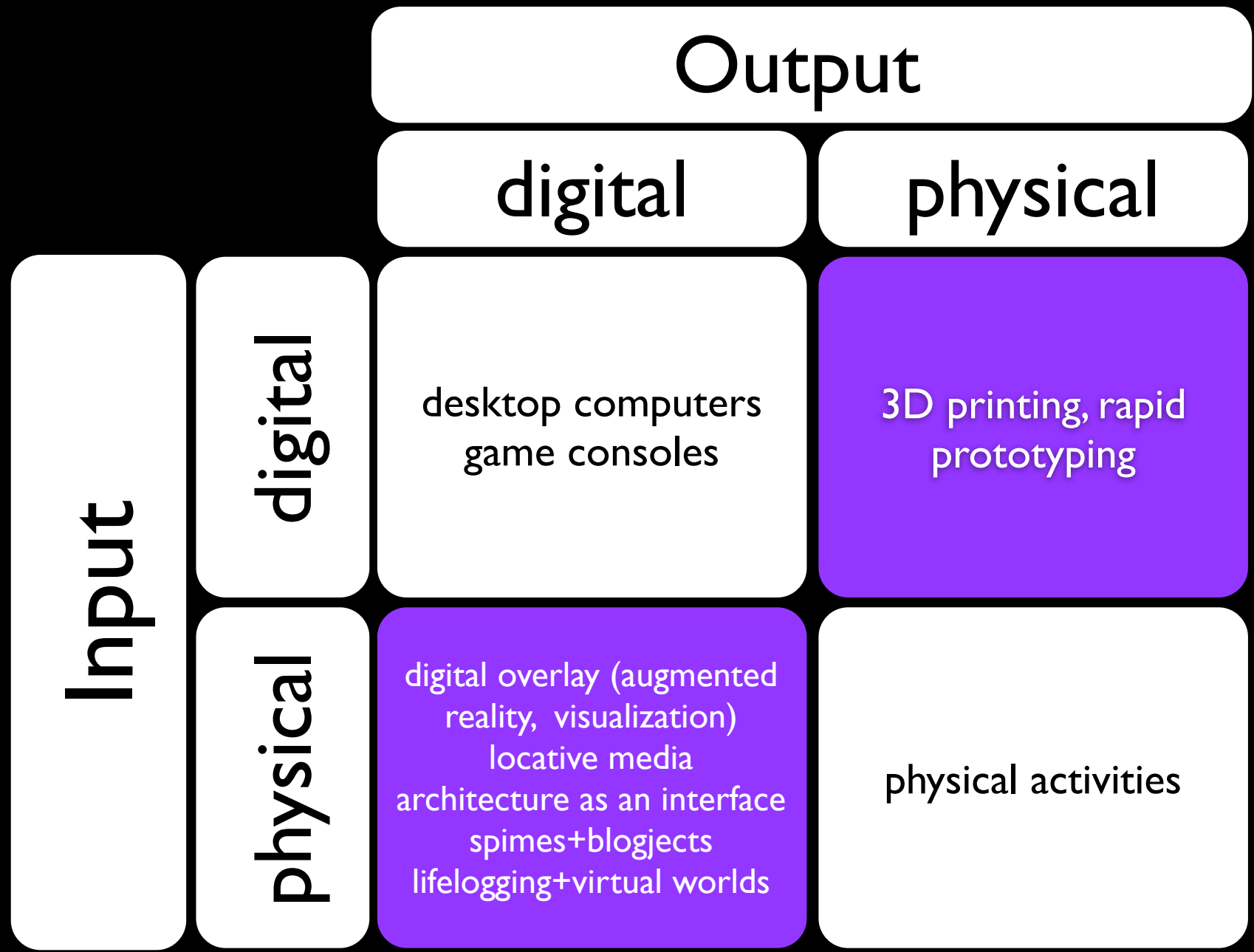
what this hybridization is not about:



rather about:

a less utilitarian
perspective





Output

digital

physical

Input

digital

desktop computers
game consoles

3D printing, rapid prototyping

physical

digital overlay (augmented reality, visualization)
locative media
architecture as an interface
spimes+blogjects
lifelogging+virtual worlds

physical activities

trends

digital overlay (augmented
reality, visualization)

locative media

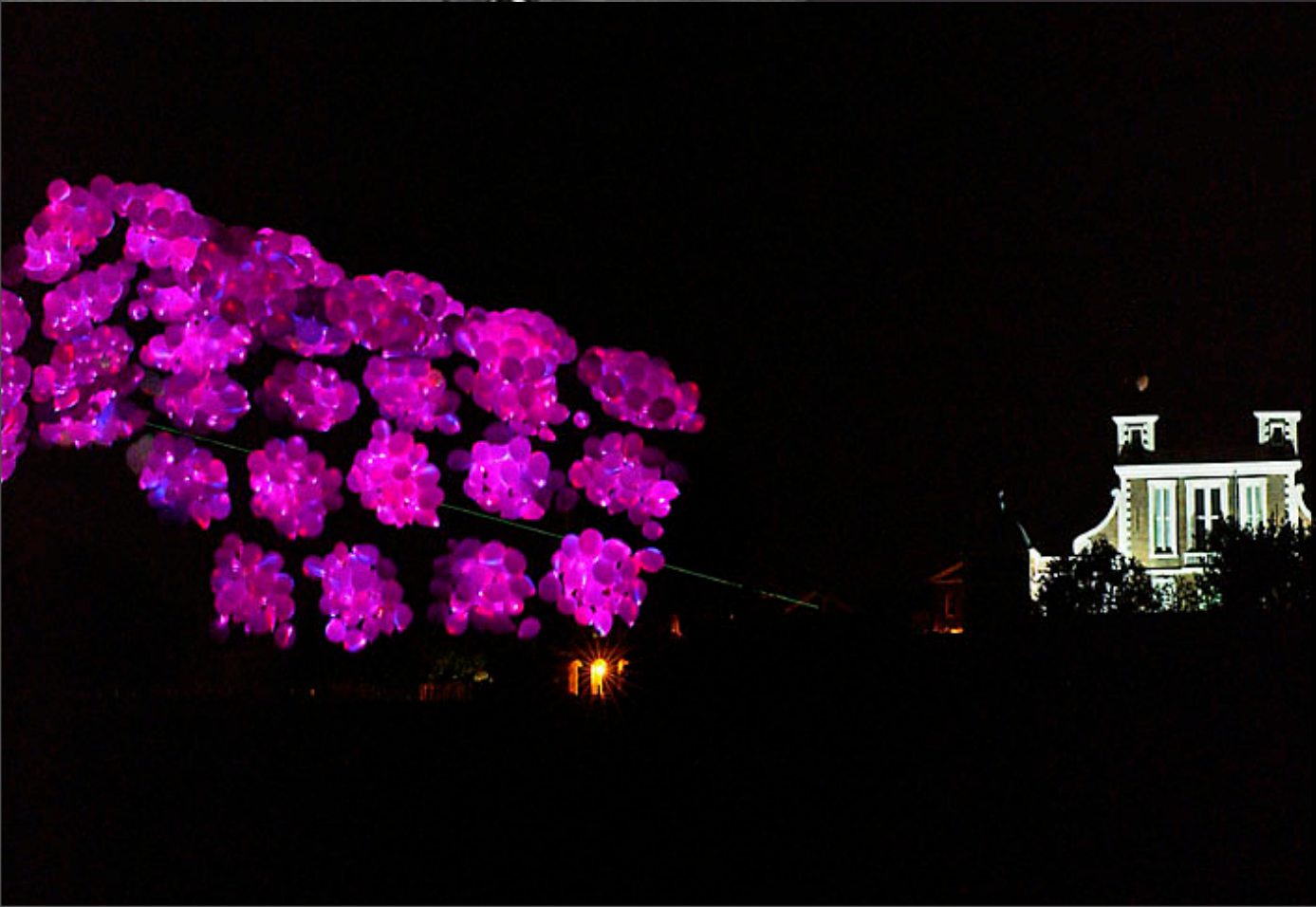
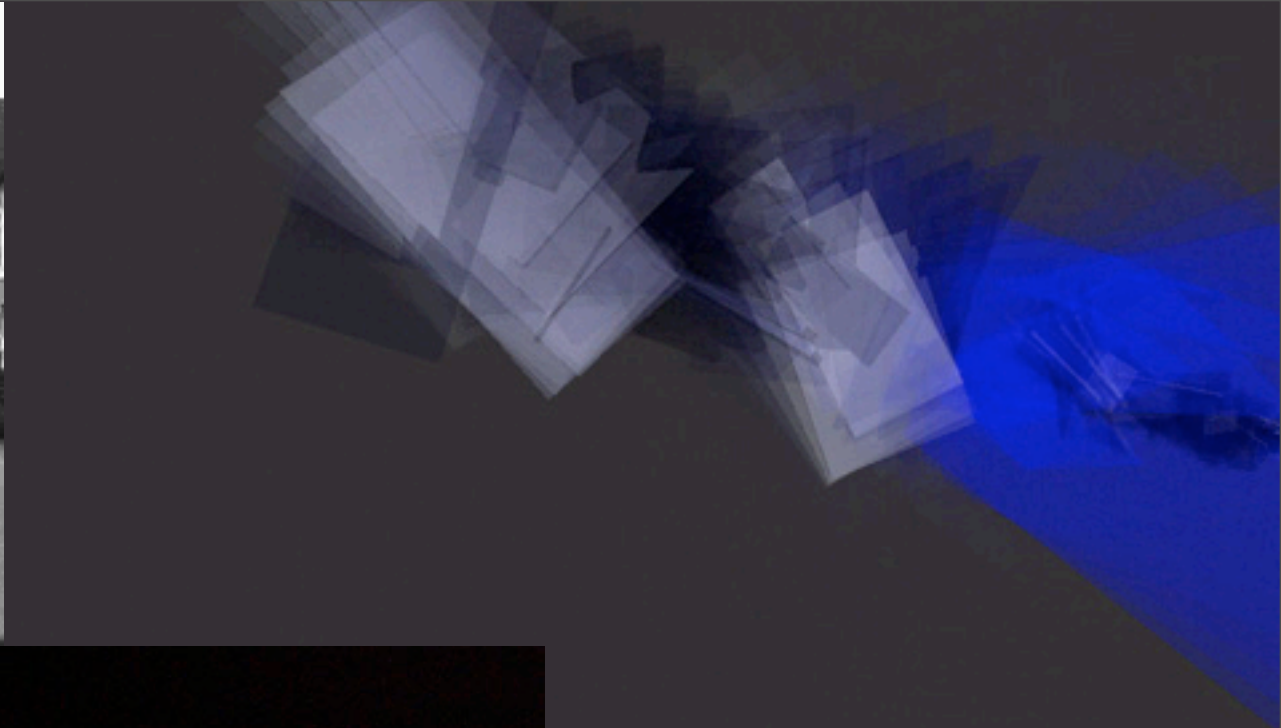
architecture as an interface

spimes+blogjects

lifelogging+virtual worlds



augmented/mixed reality: combination of real world and computer-generated data

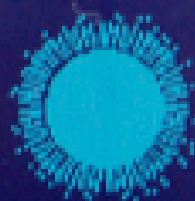


visualizing the
hybridization

Preemptive media's AIR (area immediate reading)



AREA'S IMMEDIATE READING
CO + NOx combined value



HI

LO

r: 30,2

BAT



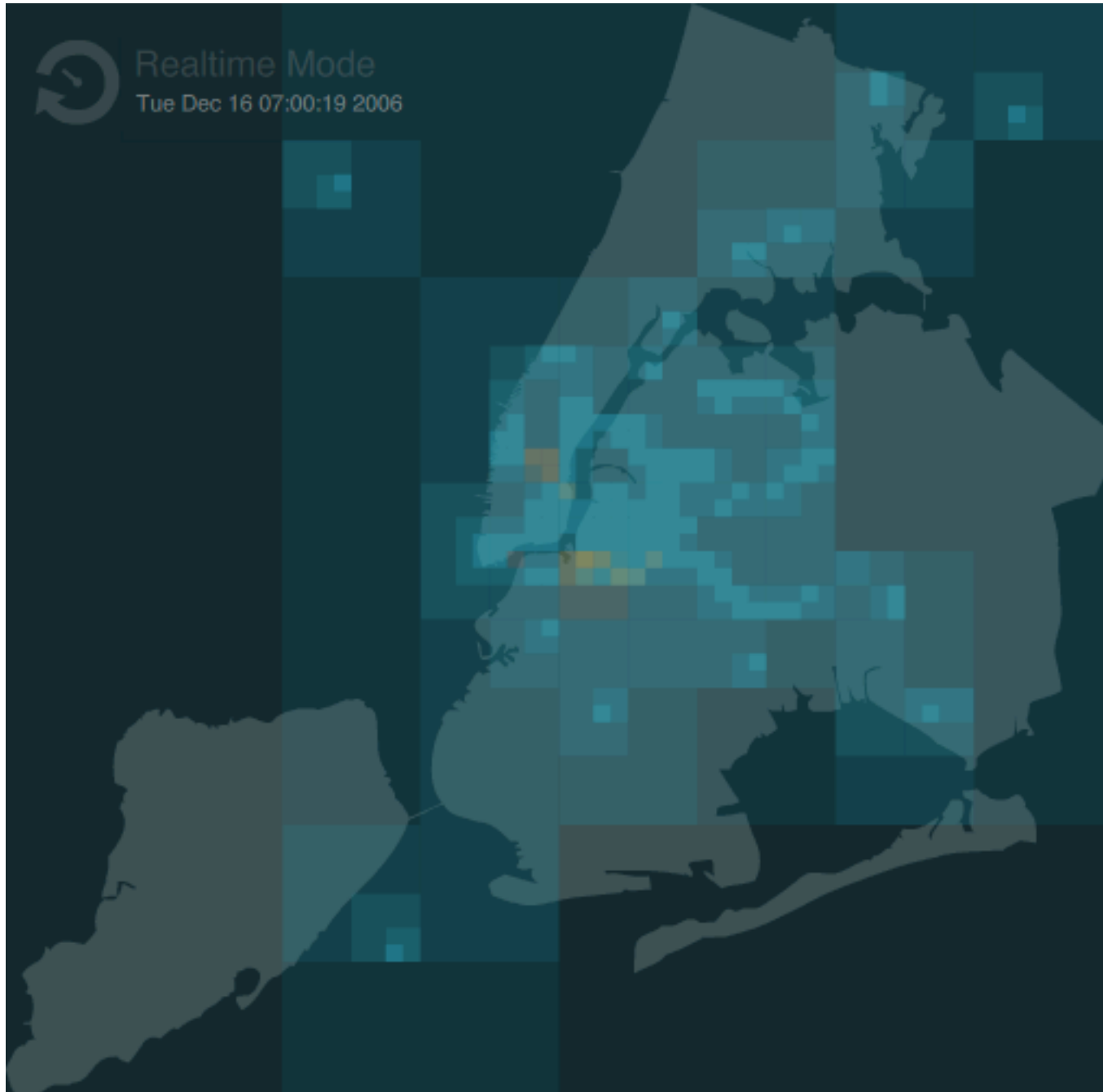
GPS II'

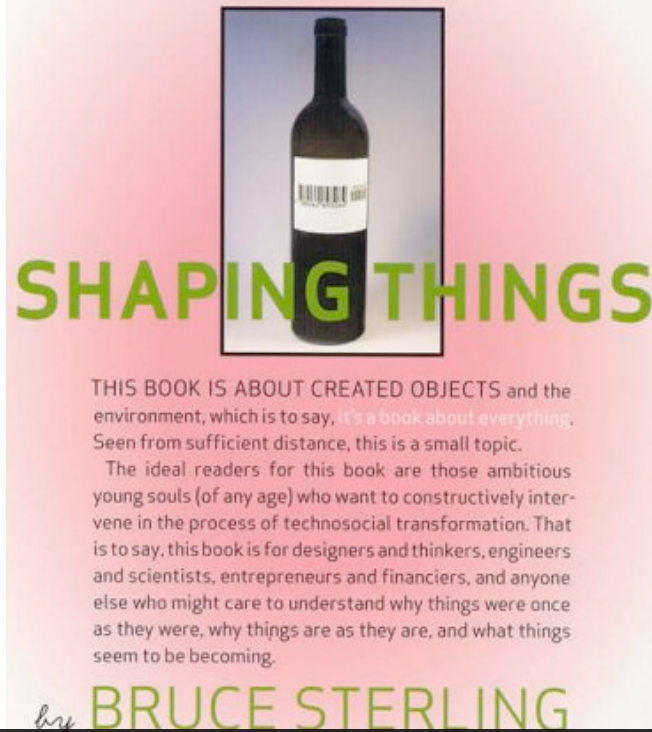
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Realtime Mode

Tue Dec 16 07:00:19 2006





Title:
A Manifesto for Networked Objects — Cohabiting with Pigeons, Arphids and Aibos in the Internet of Things

Short Title:
Why Things Matter

trackbacks:
Bruce Sterling. Shaping things. MIT Press, Cambridge, Mass., 2005.
Donna J. Haraway. The companion species manifesto: dogs, people, and significant otherness. Prickly Paradigm, University Presses Marketing, Chicago, Ill., 2003.
Bruno Latour. We have never been modern. Harvard University Press, Cambridge, Mass., 1993.

tag cloud:
spimes, spime, things, thing, lift06, ubiquitous computing, design, object, objects, rfid, arphid, arphids, pervasive networks, blogject workshop, near-field communication, nfc, web 2.0, world 2.0

permalink:
Ever since this "blogjects" topic has started circulating, I've been asked lots of things, but two questions have come to the fore. First, why would objects want to just blog? Second, why would I care if objects "blog"?

author:
Julian Bleecker, Ph.D.
Research Fellow, Annenberg Center for Communication
Assistant Professor, Interactive Media Division
University of Southern California
julian [at] techkwondo dot com

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blogject (blog-objects)

thing:
link Beta [Home](#) [Search](#) [Create](#) [Label](#) [Blog](#) [Support](#) [Thinglink](#) [Register](#) [Log in](#)

Search
for things and makers »

Create
a new thinglink »

Label
your thing with a sticker »



blogject #1: traces



Un corps c'est la mort... et nous...
tirés des rêves de...
// qd des plus effrayants...
c'est la mort: ténèbres et pierre. Malheur à celui
se voit dans son corps, avec son nom...
les apparitions — toutes celles qui nous traversent
l'esprit. Quelques-unes sont... Vous faisons
exemple celle de l'É... Voici par
Mara-Mara) ou celle du pain... (il déigne
fait signe que c'est son...)
la ville. Les autres sont toutes sorties de notre im-
agination. Avec cette divine prérogative des enfants qui
prennent au sérieux leurs jouets, le miracle qui est
en nous nous le devons... nous faisons
nous jouons... plus un jeu mais une réalité merveilleuse dans laquelle
nous vivons éloignés de tout, jusqu'aux limites de la
folie. Eh bien, nous sommes... autres à nous...
autres à nous... sez votre bouillon. Vous êtes arrivés au but. Depuis
des anges, j'attends ici des gens comme vous afin de
donner corps à d'a... Mais nous...
Mais nous... présent... votre fable de l'enfant
échangé comme un prodige qui se suffit à lui-même,
sans avoir besoin de rien demander à...
ILSE. — Ici.
COTRONE. — Seulement pour nous.
COTRONE. — Il nous invite à rester...
ne comprends pas?
DOCCIA. — Ils sont huit!
LUMACCHI. — Moi je ne dis pas non.
BATTAGLIA. — L'endroit est joli.
ILSE. — Donc je m'en irai toute seule sinon créer,
du moins récrire la fable.
SPIZZI. — Mais non, Ilse, qui voudra rester res-
terez. Moi, je te suivrai toujours.
DIAMANTE. — Moi aussi, (Au comte.) Tu peux tou-
jours compter sur moi.
COTRONE. — Je comprends que la comtesse ne
puisse pas renoncer à sa mission.
ILSE. — Jusqu'au bout.
COTRONE. — Elle ne veut pas non plus que l'œuvre
vive pour elle-même. Comme elle le pourrait seule-
ment ici.

TPS
les
lumière
colorant
éclairant
R/V
p. 103

Un corps c'est la vie...
la vie éternelle...
LES GÉANTS DE LA MONTAGNE 107

— Elle vit en moi; mais cela ne suffit pas.
Il faut qu'elle vive parmi les hommes.
COTRONE. — Quelle œuvre! Comme le poète ne
reçoit pas de vous l'amour, ainsi l'œuvre ne recevra
jamais des hommes la grâce. Mais arrêtons-nous là.
Il est bien tard et il vaudrait mieux aller se reposer.
Puisque la comtesse refuse, j'ai une idée, je vous la
soumettrai demain à l'aube.

Le COMTE. — Quelle idée?
COTRONE. — Demain à l'aube, monsieur le Comte.
partent aux rêves
et seuls les...
hommes. L'aube pour l'avenir; le couchant pour le
passé. (Il tire le bras pour indiquer l'entrée de la villa.)

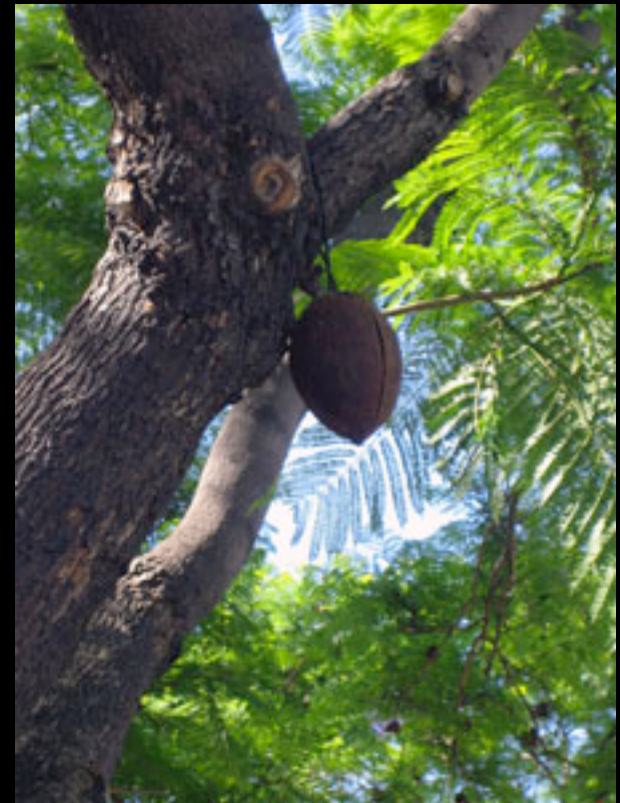
Nearnt impossible
mais... à la
condamnée.
Rideau.

Pourquoi Cotrone appelle-t-il
la fable de l'enfant échangé un
prodige? Pour
la transformation que cette
œuvre a produite chez Ilse?

turn history of interactions
in a continuous experience,
object learn from their
histories

blogject #2: history

tripwire (Tad Hirsch)



crittercams





Blogging pigeons (Beatriz Da Costa)



blogs

weblogs are online journals, a way for people to publish ideas, pictures, audio and video for their friends, family and the world.



data

no matter what you do, you collect data. runners keep track of how far they run. salespeople keep track of leads. most of us review movies, restaurants and albums.



datablogging

unleash the power of your data with powerful and customizable charts and graphs. build complex queries to fit your interests. connect with people based on the data you share. datablogging is an advanced form of blogging. it leverages the simplicity of blogging and the power of data mining.



(automatic) lifeblogging +virtual worlds (or... pedometers everywhere)



Spimes (Bruce Sterling)



Speculative category of objects that:

1. Have a unique ID (RFID? thinglink?...)
2. Can be precisely located on Earth (GPS?, radio-frequency?)
3. A way to mine large amounts of data for things that match some given criteria, like internet search engines.
4. Tools to virtually construct nearly any kind of object; computer-aided design.
5. Ways to rapidly prototype virtual objects into real ones. Sophisticated, automated fabrication of a specification for an object, through “three-dimensional printers.”
6. “Cradle-to-cradle” life-spans for objects. Cheap, effective recycling.

design trends

- The InternetS of Places, People and Things
- Make explicit the invisible or the implicit (often negative phenomena)
- Underlying trend: collection of traces + new interaction partners
- Intricate relationships between the physical world and X virtual environments that are interconnected
 - What's being in a place?
 - What does it mean to be with someone? a pet?

design issues

- Agency: human? pet? artifacts?
- Reshuffled interaction design
 - Intentional/unintentional inputs
 - Synchronous/asynchronous output
 - Fragmented interactions
- Affordances of space
 - does the physical space afford specific behavior in virtual space?
 - the other way around?
 - is it so interconnected that behavior is seamless?

what drives design?
unfortunately: tech tech tech
BUT

also need new experiences

1) playful

2) with forgotten partners (pets, weather)

3) non utilitarian practices

4) lowtech/low bandwidth can be relevant

Thank you

nicolas.nova@epfl.ch

oh btw, this is not new



(“piazza-listening device” by Athanasius Kirchner, 1650)