

Meta-design as an emergent design culture

Theories, applications, and issues

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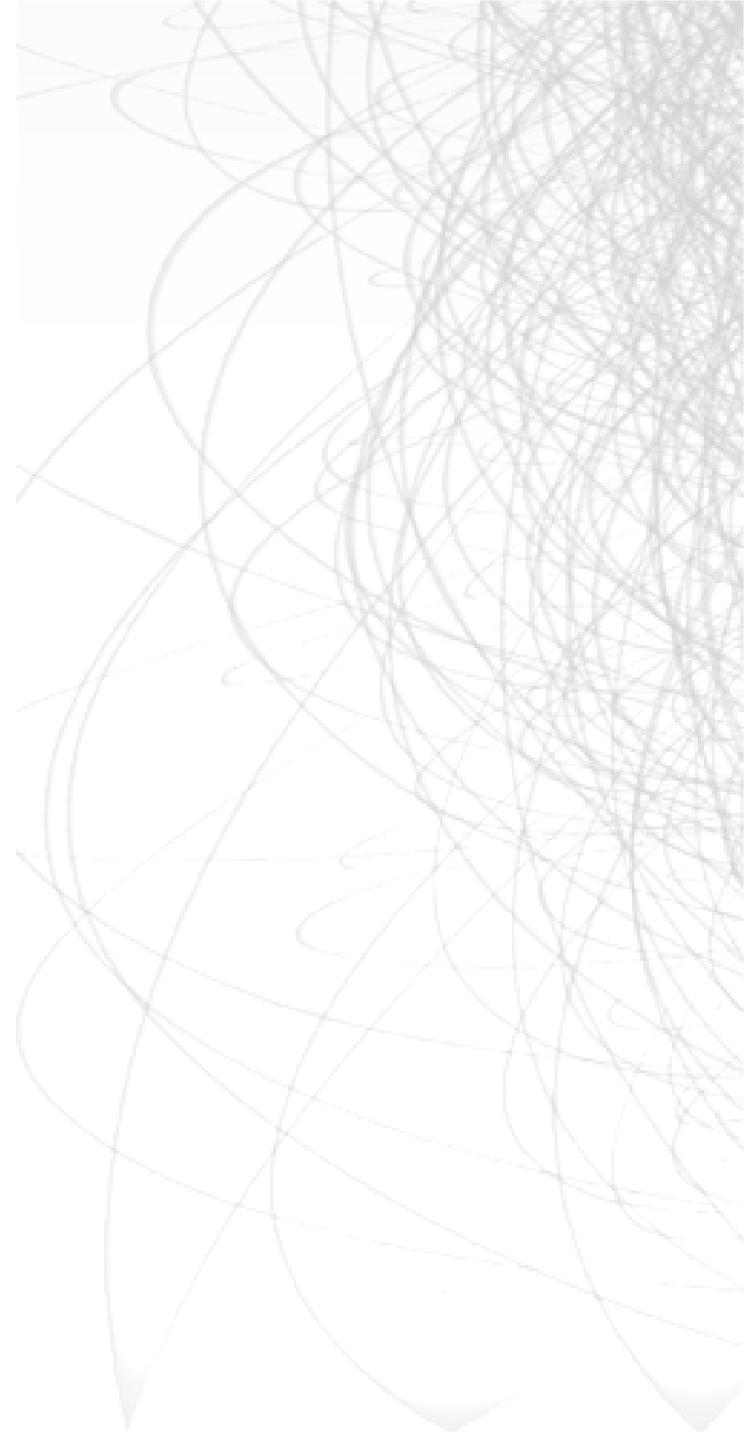
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*It's a growbag culture that is needed,
in which seeding replaces designing
(Roy Ascott, 1995)*

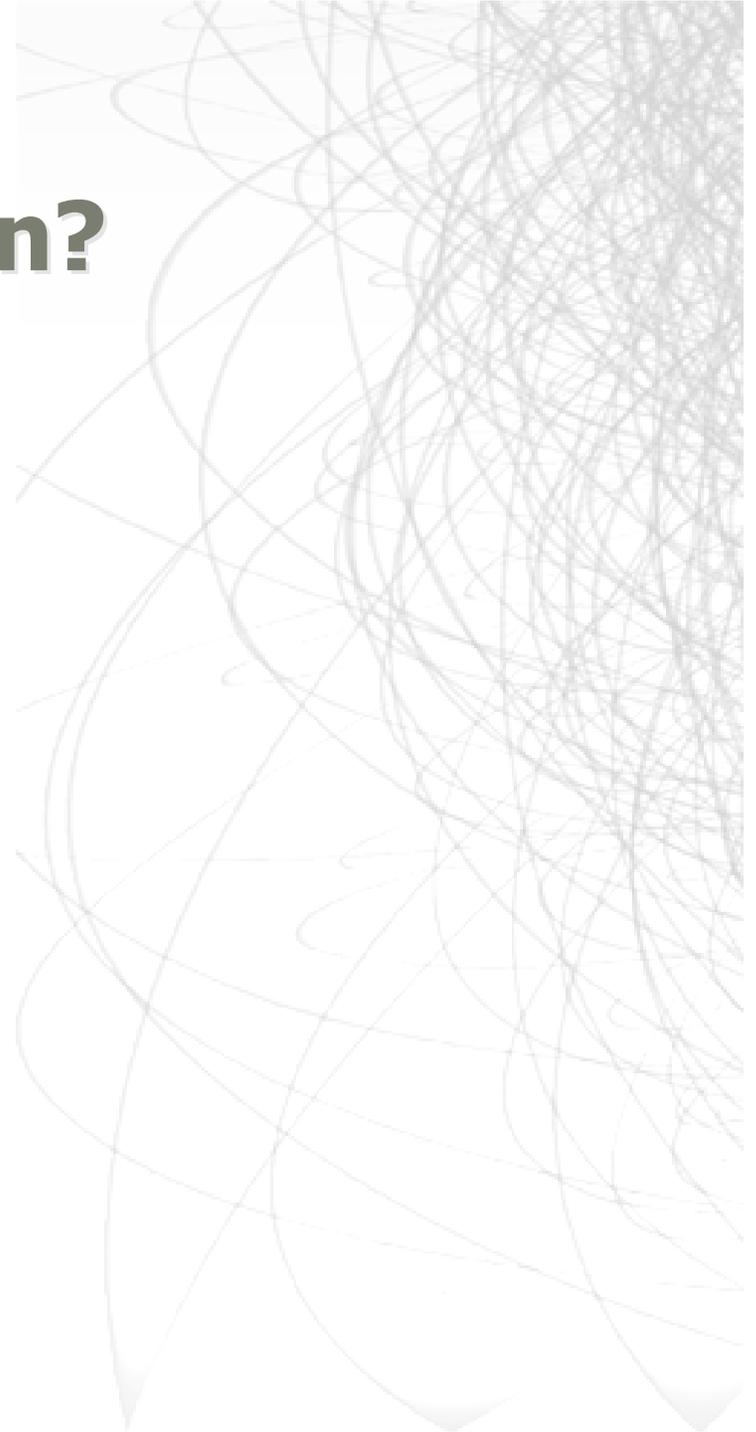
Overview

- Introduction
- Theoretical statements
- Applications of meta-design
- Development trends
- Map of issues
- Conclusions



What is meta-design?

- A theory?
- A methodology?
- A technique?
- A design philosophy?
- A cultural strategy?

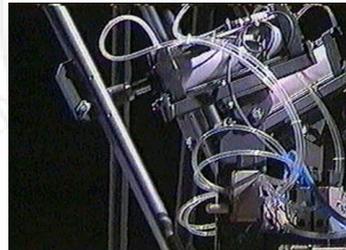
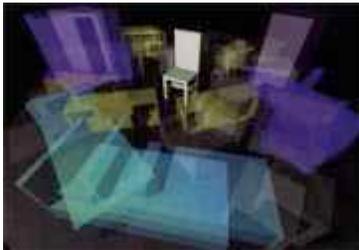


What is meta-design? (2)

- Meta-design is at the moment a design culture inspiring different, though consistent, **understandings**, **objectives** and **methodologies**, in several application fields.
- As a design culture, meta-design is facing **development trends** and an **unfolding** that we can contribute to define.

What is new?

A condition of **increased scale and complexity in natural human interaction**, made tangible by technology.



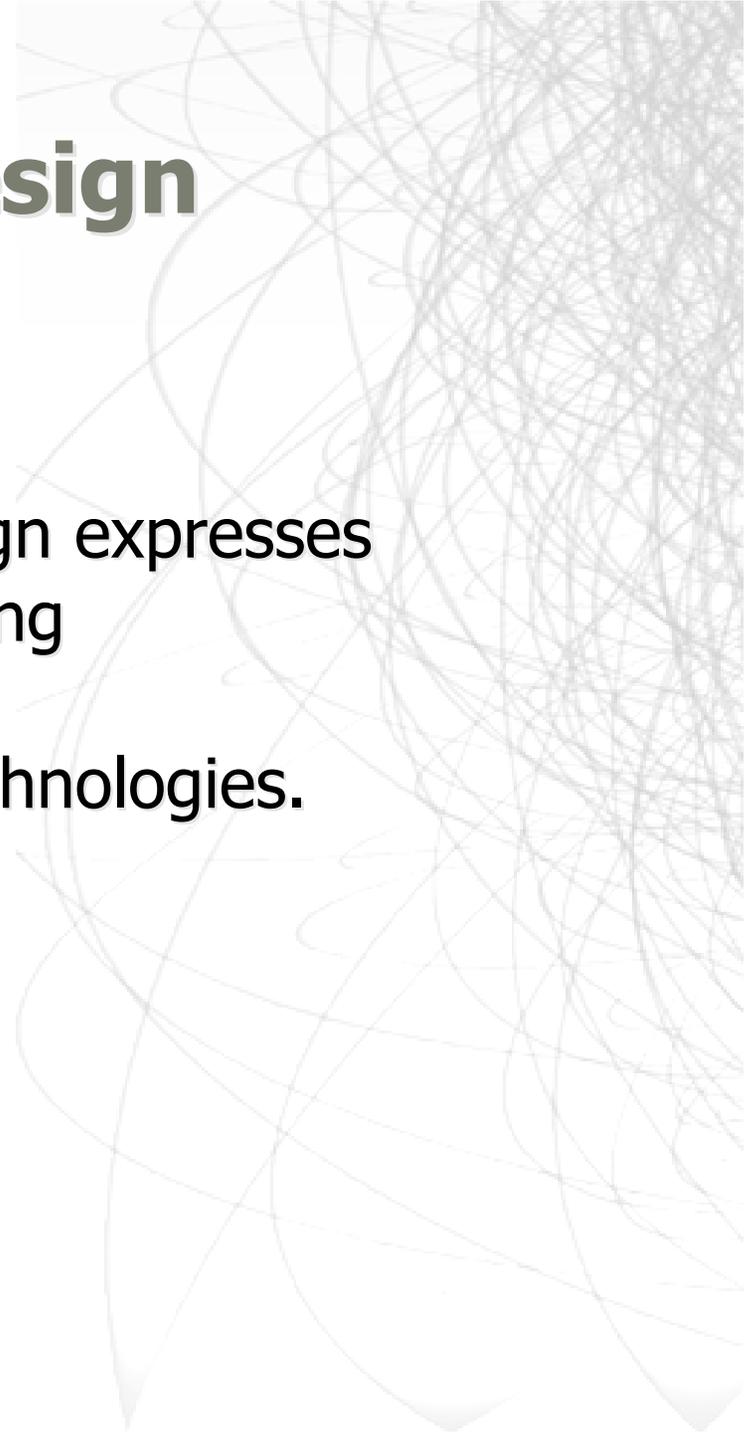
What is new? (2)

- New status and properties of **objects** and **materials** (**discrete, malleable, performative**)
- **Pervasiveness** of computing power and connectivity (**anywhere, everywhere, within**)



What does meta-design express?

Generally speaking, meta-design expresses a movement aimed at identifying **the new design space** engendered by information technologies.



What does meta-design represent?

- Generally speaking, meta-design represents a **paradigm shift** from an idea of design as planning towards an idea of **design as seeding.**
- It represents a call for an **expansion of the creative process.**



Some statements

- Meta-design deals with the creation of **context**, rather than content (Youngblood, 1986).
- Meta-design puts the **tools** rather than the object of design in your hands. It defines the **conditions for a process of interaction** rather than the process itself (De Kerckhove, 1995).



Some statements (2)

- Meta-design implies **co-creation**. It opens up new **relational dimensions**, which have the potential to become a grounding reality in the course of human history (Maturana, 1997).
- Meta-design involves a **reflexive thinking** about design. It is a model of design based on **embodied interactionism**, rather than a mode of praxis (Thacker, 2002).

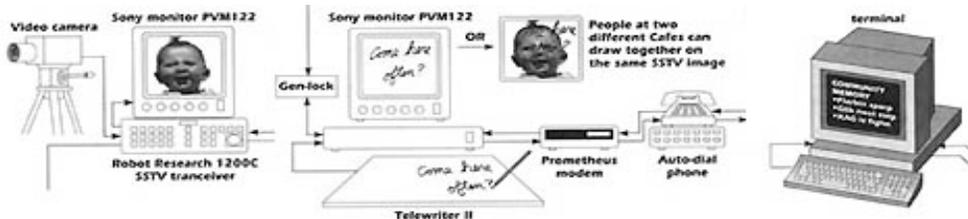
Applications of meta-design approaches

Applications have focused on different concepts associated to meta-design (high order levels of design, evolution, participation, etc.):

- Environmental design
- Information design
- Distributed design
- Generative design
- Information architecture
- Collaborative design (see L3D)

Meta-design as environmental design

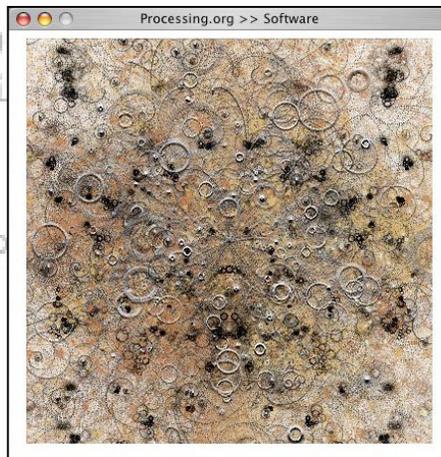
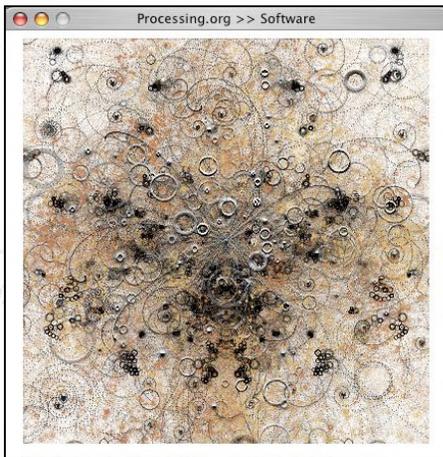
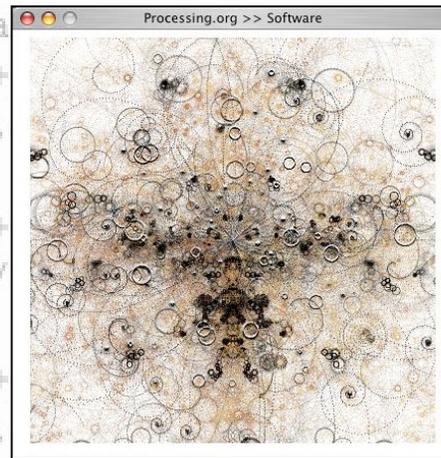
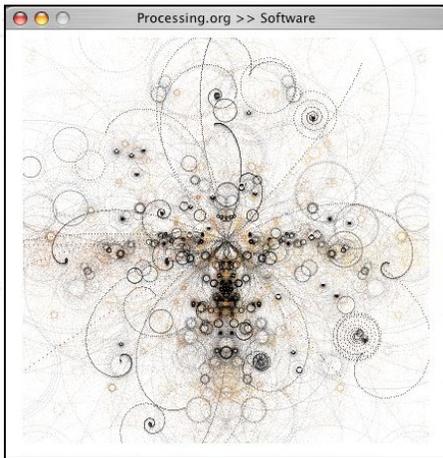
In interactive art meta-design is a mode of creating environments (i.e. communication and information systems) in which people (as communities) can control the context of their cultural production.



```
void setup() {  
  // processing is awesome  
  size(dim,dim);  
  background(0);  
  // fill(0);  
  // rect(0,0,1000,1000);  
  noStroke();
```

Meta-design as information design

```
// insta  
for (int  
  axion[  
}  
for (int  
  hadron  
}  
for (int  
  quark[  
}  
for (int  
  muon[i  
}  
  
// ok, d  
collide0  
}  
  
void loop(  
  //background(0); // and erase all that hard wo
```



In graphic design and industrial design the term meta-design is primarily connected to the idea of working with computational structures on a higher level (design of a design process).

Meta-design as distributed design

In product design meta-design primarily means to construct a networked system of options (accessible through the Internet) that make the thing “that thing”, without actually designing it (design of a design process, again).

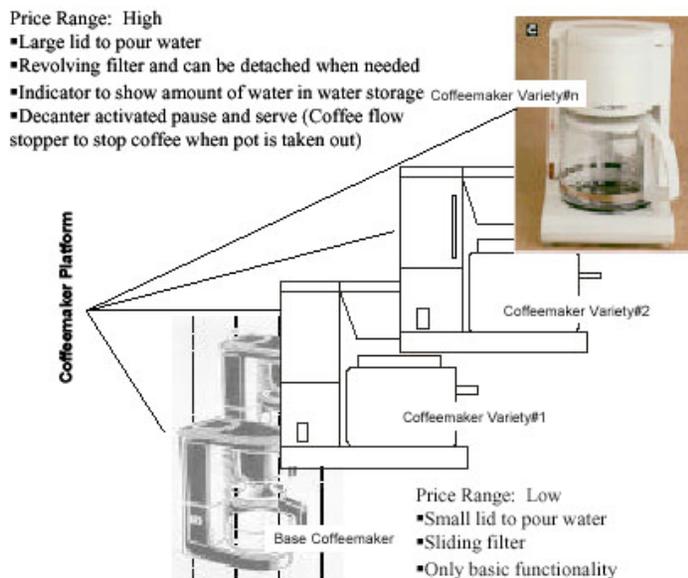
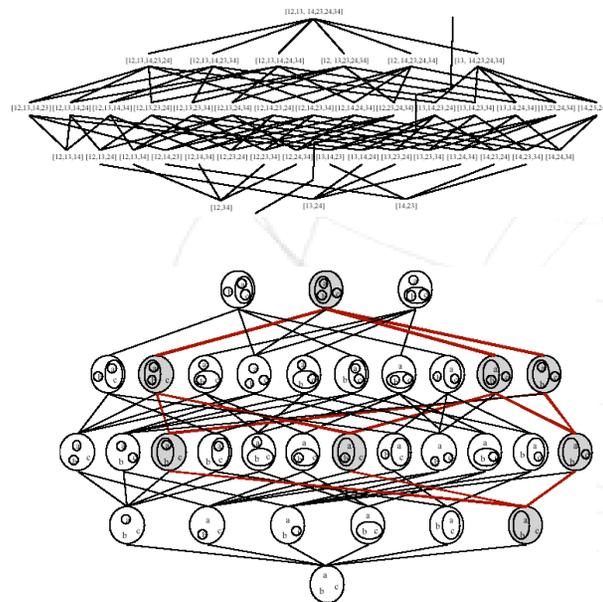


Figure 6 - Coffee Maker Product Family Development



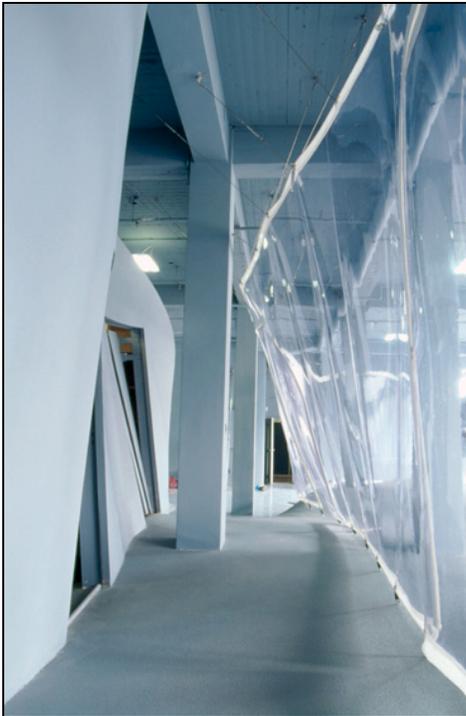
Meta-design as generative design



From a generative perspective, meta-design has to do with defining paradigm and algorithms of transformation (design of a generative principle).



Meta-design as architecture



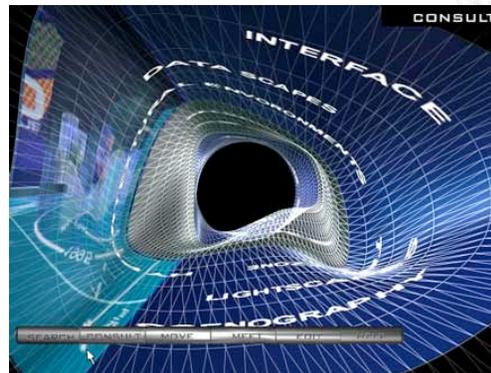
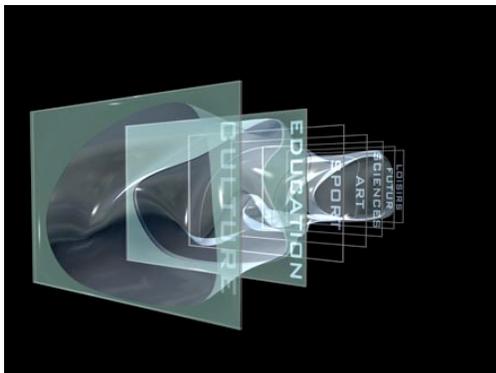
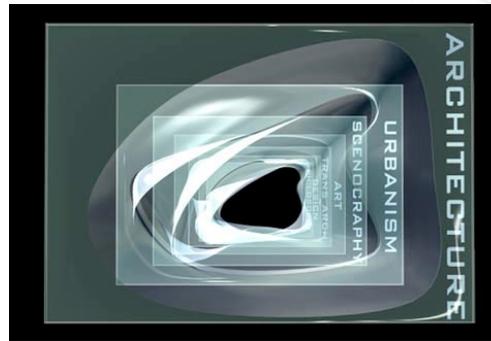
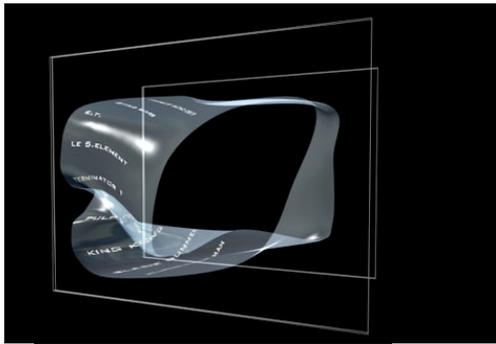
In architecture and information architecture, meta-design is aimed to the organization of information flows and events, and it enables the construction of new typologies of space (both physical and electronic).

A non-computational instance of meta-design as architecture



What it matters here are the relations that identify and qualify space as internal, external or intermediary. The nature of space is not determined by structural elements per se, but by the relation between external and internal that they engender and is subject to change.

Meta-design as information architecture



For Lab[au], meta-design is about the setting of codes that allow data to be organized in spatial and temporal forms, and to integrate users interaction in the structure of the information itself.

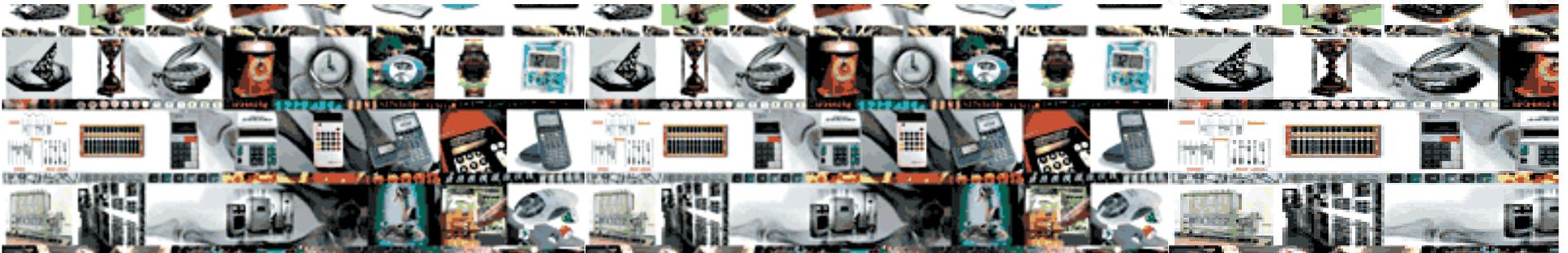
Two conceptual alternatives and one continuum

- Model of design vs. Mode of existence
(prosumer or co-creator? praxis or reflexive thinking?)
- Technology determinism vs. Constructivism
(closed or open? just a set of options or new inputs? design instances or byproduct of interaction?)
- Dimensions of intentionality
(from unintentional to proactive, from embodied action to motivated behavior)

Meta-design as networked model of design

- Product refinement and personalization
- Mass customization

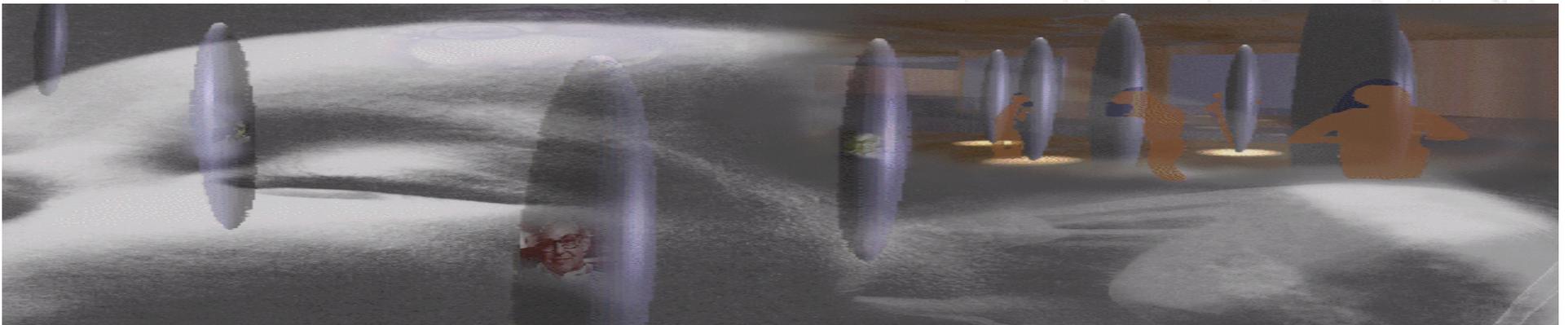
According to this development, meta-design is conceived as a new praxis of design, which does not question the role of the consumer in the process of production, but rather it empowers it. This development relies on some basic assumption of meta-design, but it does not accomplish fully its potential.



Meta-design as co-creation

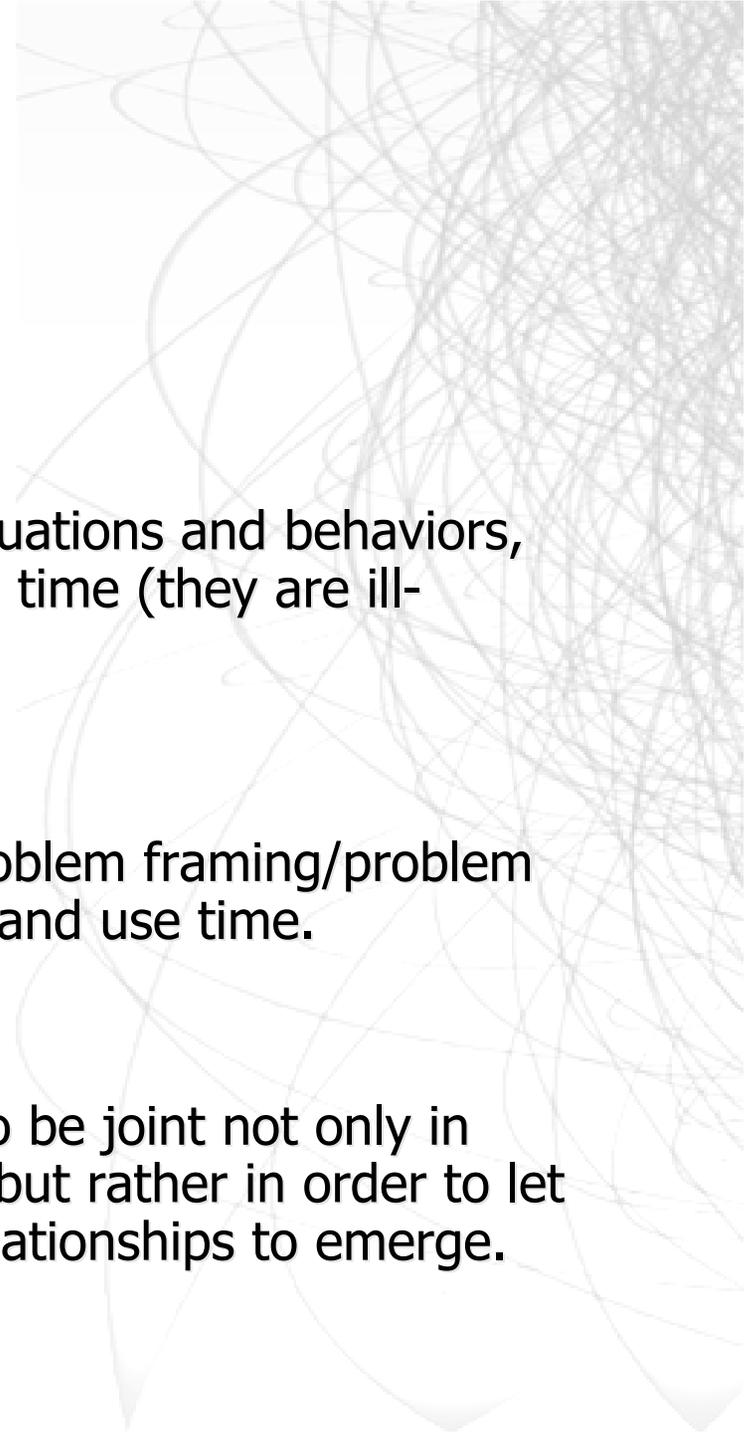
- Emergence, evolution and adaptation
- Informed participation and social creativity

According to this development, the operational terms and potential of designing at a meta-level must be joint to a more reflexive, lifelong, and collaborative practice of design.

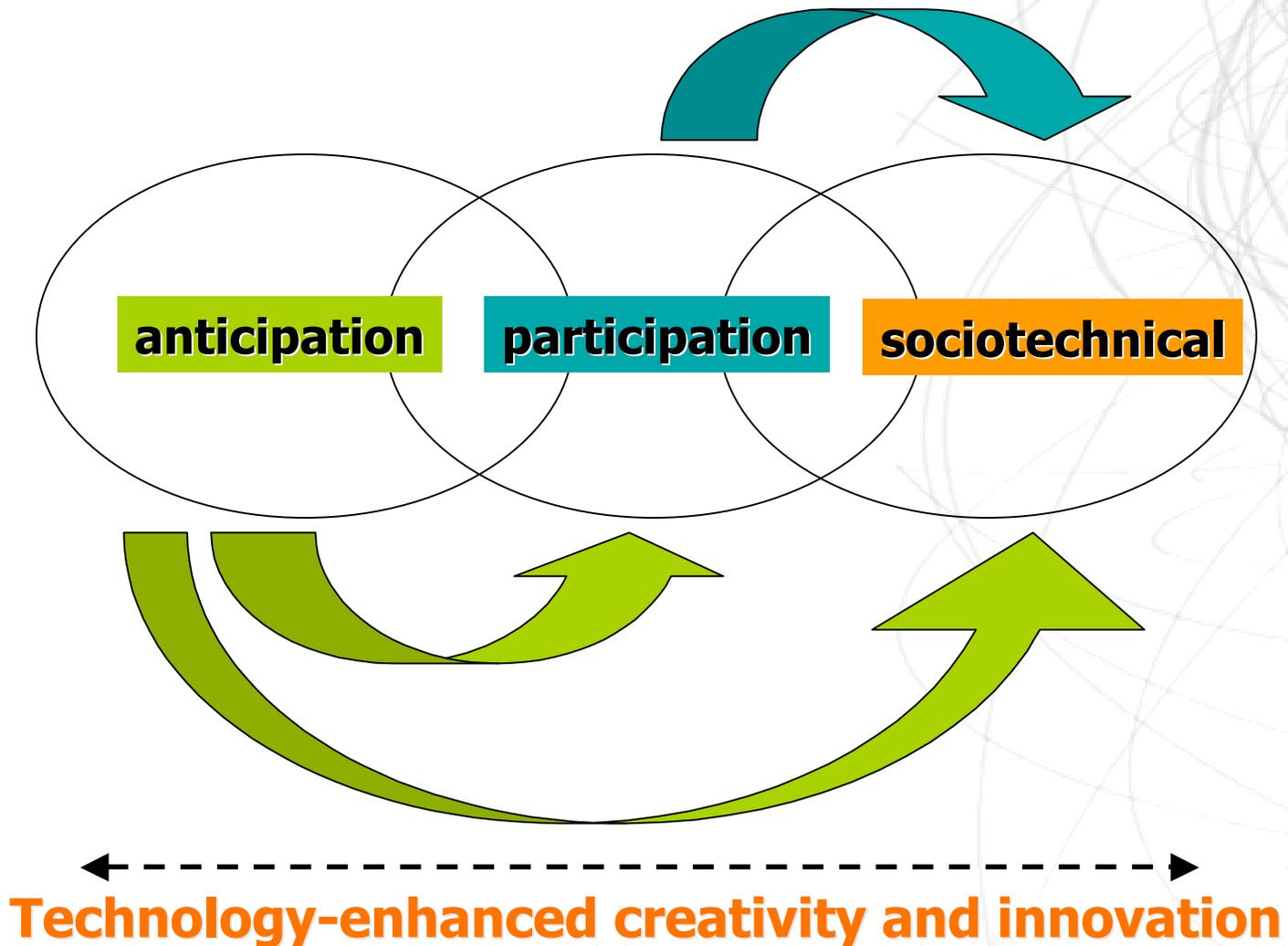


Issues at stake

- **Anticipation**
 - Users' needs and task, as well as situations and behaviors, cannot be fully anticipated at design time (they are ill-defined and change over time).
- **Participation**
 - Users need to be engaged in the problem framing/problem solving process both at design time and use time.
- **Systems integration**
 - Social and technical systems need to be joint not only in order to be optimized and efficient, but rather in order to let new conditions, interactions, and relationships to emerge.



Map of the issues



Ways of misunderstanding meta-design

- To think that working on a higher level of design necessarily implies meta-design (that could be even mere planning, while meta-design deals with emergence!)
- To think that matching one of the issues at stake is enough (it makes meta-design fall under other current design theories!)
- To mix up the verb “to meta-design” with the noun “meta-design”, i.e. to confuse method and tools

Conclusions

In order to be consistent and evolve into a meaningful approach which is appropriate to our new material and existential condition, **meta-design needs both theoretically and methodologically to clarify and integrate the levels of its new design space.**

“A piece of software does not guarantee you autonomy. What it is, what it is mixed with, how it is used are all variables in the algorithms of power and invention that course through software and what it connects to” (Matthew Fuller, 2003)

More...

Giaccardi, E. (2003) **Principles of Metadesign: Processes and Levels of Co-Creation in the New Design Space**. PhD Dissertation, University of Plymouth, UK.

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