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Frames and models of meta-design: the design of design

or designing situations in which others may design

Hugh Dubberly

Design is large, it contains multitudes.
So too the-design-of-design.

Meta-design has many frames, among them:

1. Rules, standards, and programs (design systems)
2. Semiotics, signs, and language
3. Information, feedback, cybernetics, and boot-strapping
4. Media theory and cultural construction
5. Co-creation
6. Reform of design practice and design education

Meta-design as rules, standards, and programs:

design systems

An early definition of meta-design:

“It is the design of the parameters of a system ...
the limit of the possible configurations of the elements,...
We will call the design of this visual-formal language meta-design.”
— “Metadesign,” Andries van Onck, 1965.

van Onck's frame of meta-design
is similar to Karl Gerstner's notion of programmes.

"Instead of solutions for problems,
programmes for solutions...
for no problem (so to speak) is there an absolute solution....
There is always a group of solutions,
one of which is best under certain conditions."
— *Designing Programmes*, Karl Gerstner, 1964.

https://www.lars-mueller-publishers.com/sites/default/files/karl_gerstner_designing_programmes.png

Both parallel the rise of codified ‘design systems’ in design practice.

- Westinghouse, Paul Rand, 1959
- International Paper, Lester Beall, 1960
- Chase, Chermayeff & Geismar, 1960
- Milan Metro, Franco Albini & Bob Noorda, 1964
- New York Subway, Unimark (Vignelli), 1966
- Schiphol Airport, Benno Wissing, 1967

Of course, earlier ‘systems’ paved the way, such as uniforms, vehicle livery, typefaces,
and earlier identity programmes such as AEG, Olivetti, NRA Blue Eagle.
However, the design system became standard operating procedure in the 1960s.

‘MetaDesign,’ the ‘creative brand consultancy’, built on this trend.

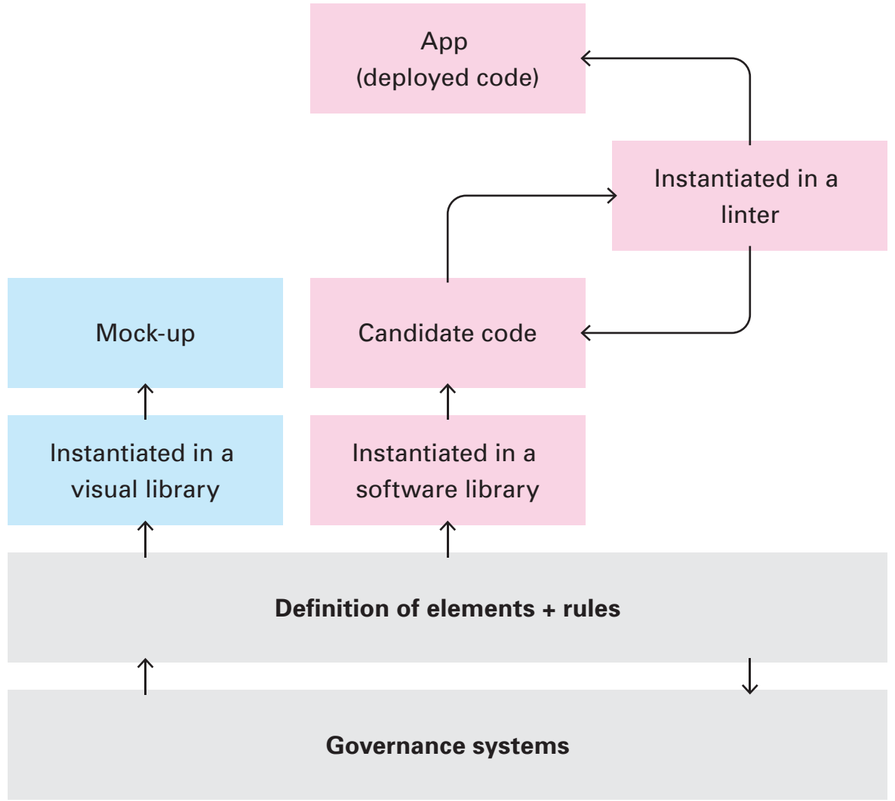
“We were partners in Berlin and London back in 1979, and MetaDesign was both a reference to the metric system that we were using in Germany, but that the Brits hadn’t quite embraced properly (as in milli-meta!), and the fact that we were doing design for design, i.e. instructions for other designers [on] how to use the rules of corporate design systems that we developed. And design for design is metadesign. The CenterCap was just starting to become fashionable, so MetaDesign.”

— Eirk Spiekermann (personal communications)

In the last 10+ years, ‘design systems’ have become ‘software libraries’, standard packages of code, reused throughout an application or app suite.

This further codification of design systems requires additional social-technical structures:

- Definition of elements + rules for their use
- Instantiation of elements in drawing programs (a visual library)
- A parallel instantiation of elements in code (a software library)
- ‘Linters’ (software QA systems) to automatically check that rules are followed
- Governance systems to address new cases, create new elements, and modify rules



Design systems are also related to Herbert Simon's concept of 'problem space'.

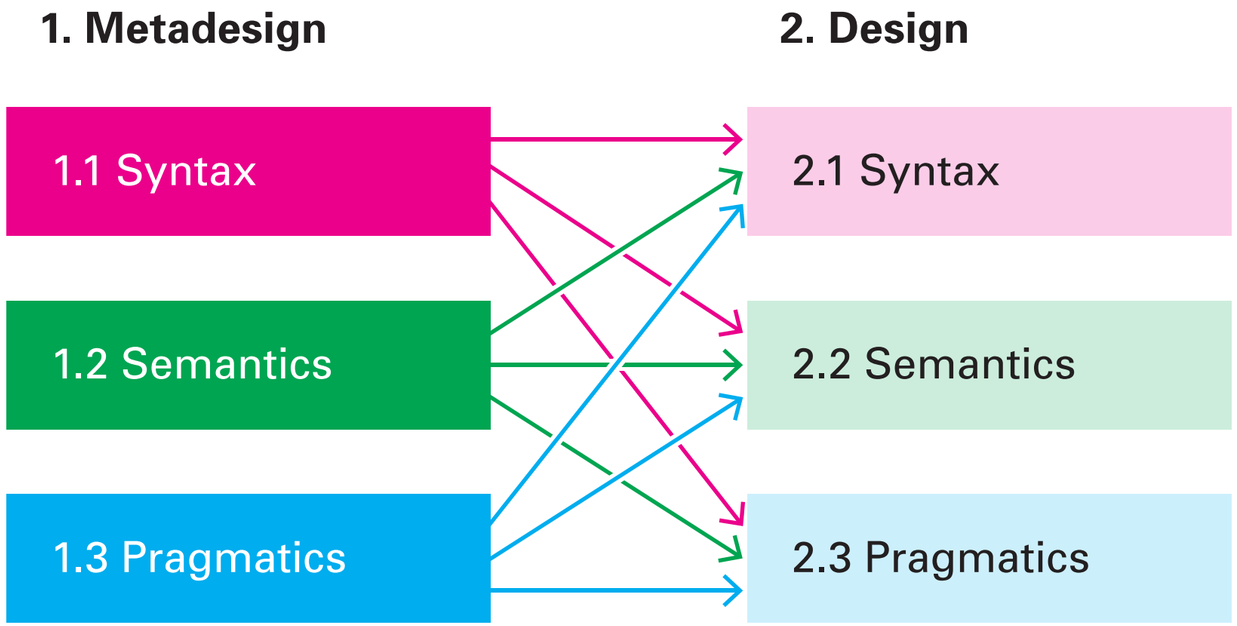
"Every problem-solving effort must begin
with creating a representation for the problem,
a problem space
in which the search for the solution can take place."
— *Sciences of the Artificial*, Herbert Simon, 1968.

van Onck’s parameters, Gerstner’s programmes, and Simon’s solution spaces set the stage for ‘generative design’ and ‘simulated evolution’.

Meta-design as semiotics, signs, and language:

systems of language

van Onck invokes Charles S. Peirce, Charles Morris, and Max Bense,
"[Metadesign] is analogous to the metalanguage, meaning by metalanguage the language we use when speaking of the language."



"Each metadesign category contains discourse on all categories of design."
– 'Metadesign,' Andries van Onck, 1965

Meta-design as information, feedback, cybernetics, and boot-strapping:

systems theory

van Onck also invokes the language of cybernetics.

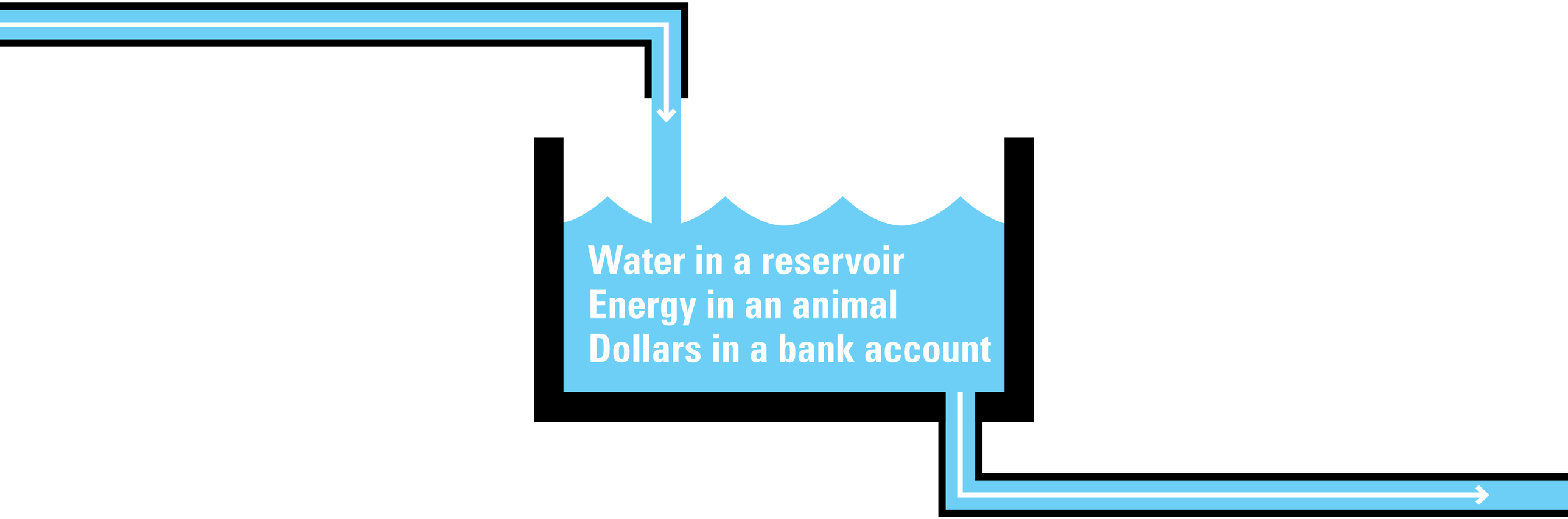
"We therefore ask that a design possess the characteristic of homeostasis … the ability to maintain an organic balance despite disturbances in the environment. Homeostasis is implied by metadesign."

— "Metadesign," Andries van Onck, 1965.

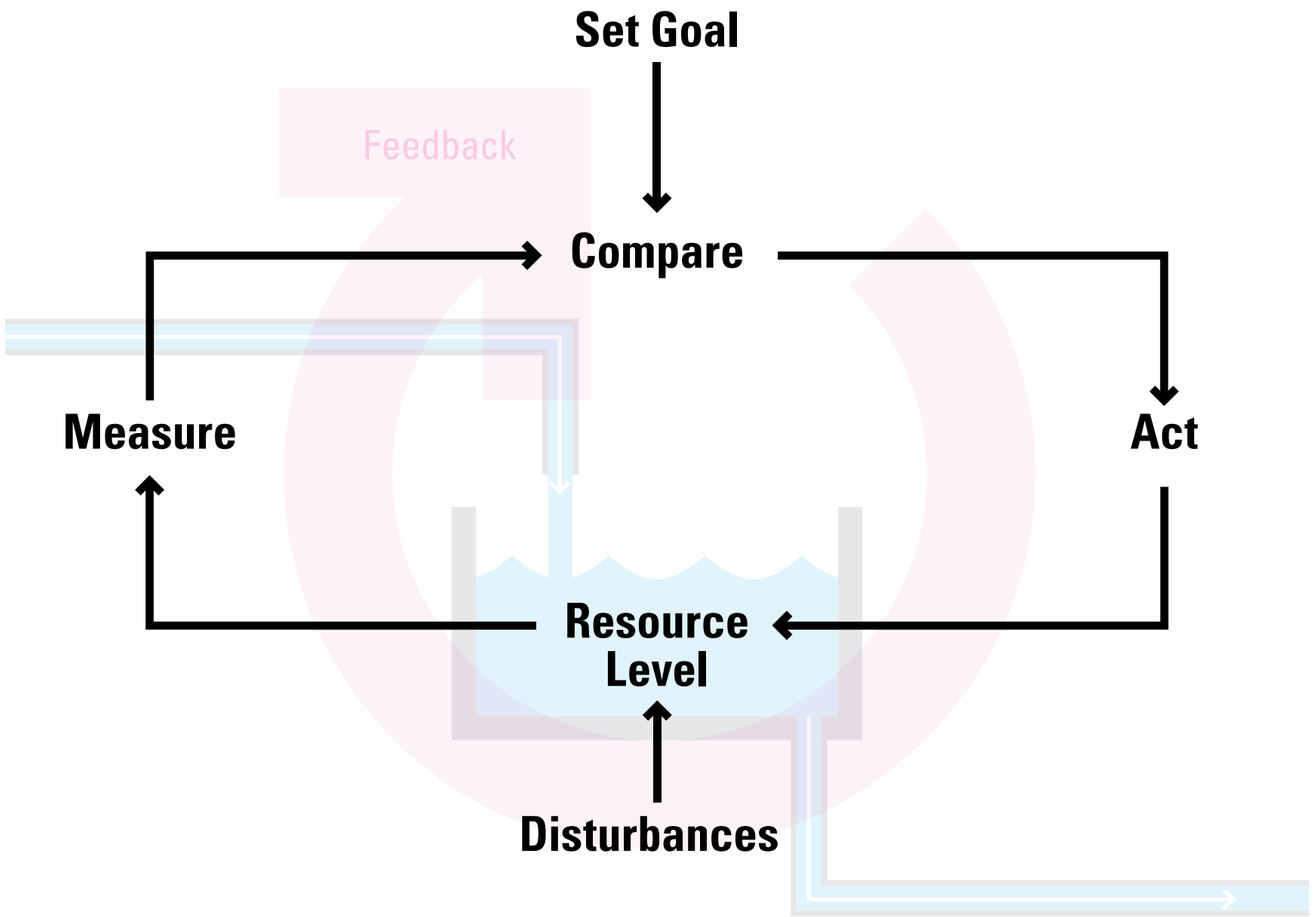
Homeostasis or dynamic equilibrium is a state of balance—

a resource that stays at the same level

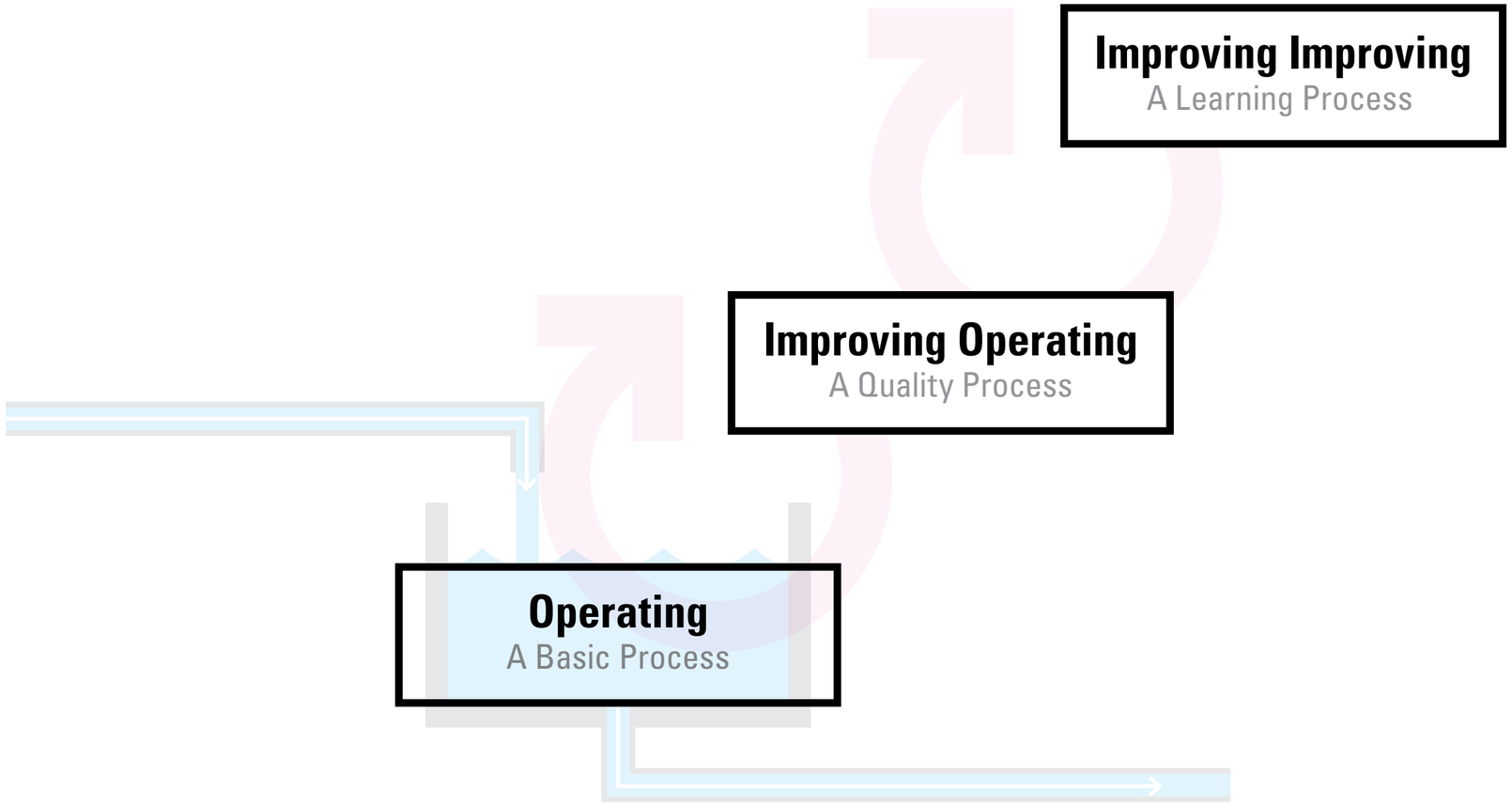
even as it flows through a system.



Self regulation is a process of maintaining balance—
using feedback to control the resource level,
e.g., governing how much flows in or out.



Boot-strapping is a process of self-improvement—
studying a basic process to improve it
and in turn studying the improvement process to improve it.



— after Douglas Engelbart

Englebart's bootstrapping process is echoed in Michael Geoghegan's model of three levels of 'creativity'.

- **Recognizing invention**
  (loosely 'research' creating new language — e.g., radio waves)

- **Profiting from discoveries**
  (development + deployment — e.g., radio)

- **Developing efficiencies**
  (scaling while reducing unit cost — e.g., the NBC network)

Maturana also connects cybernetics and meta-design.

“The question that we must face
is not about the relation of biology with technology, …
nor even about whether or not metadesign shapes our brains. …
[it] is about our desires
and about whether we want or not to be responsible of [sic] our desires.”
— “Metadesign,” Humberto Maturana, 1997.

(With reference to Virilio, published in *TechnoMorphica*,
“…a collection of essays on the merging of the biological with the technological.”)

Meta-design as media theory and cultural construction:

political systems

Meta-design as the “political ideology of design”.

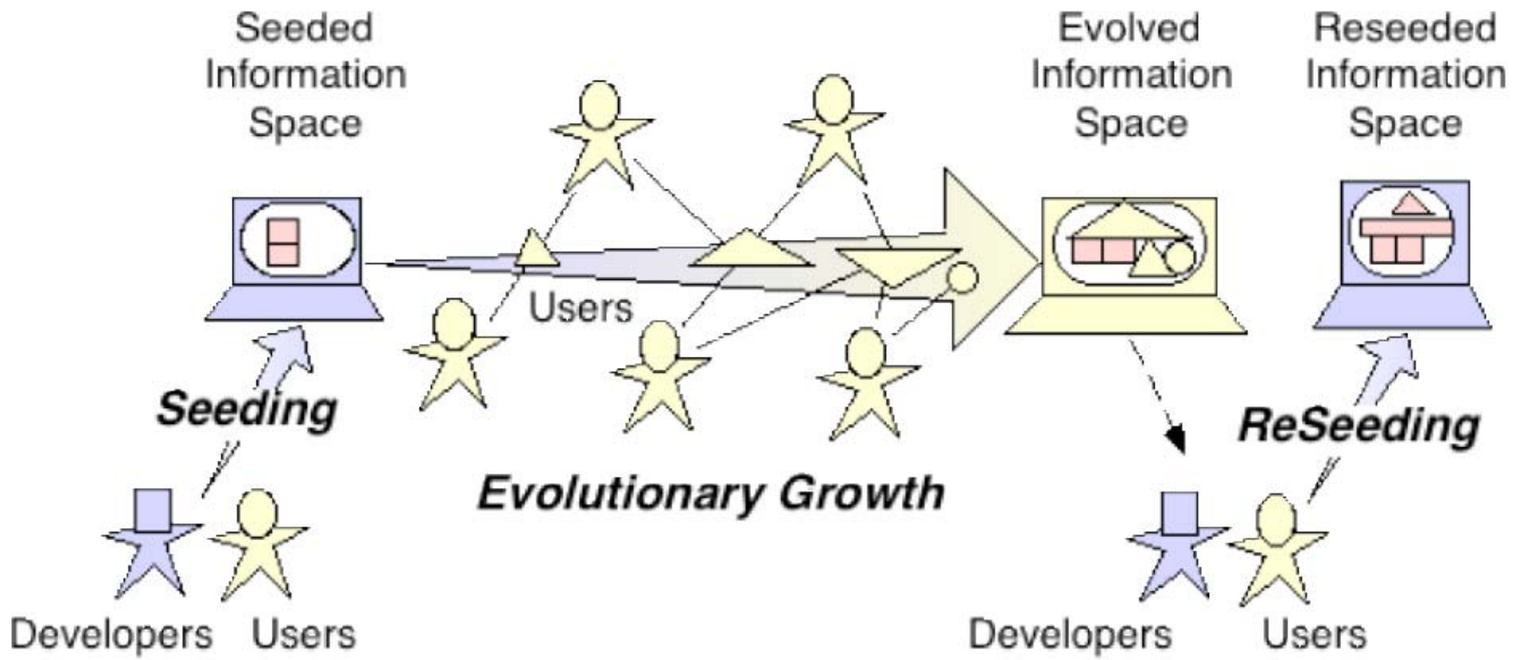
— Jean Baudrillard, “Design and Environment
or How Political Economy Escalates into Cyberblitz,”
in *For a Critique of the Political Economy of the Sign*, 1981.

“[Metadesign] It’s where you create context, not content. ...
The software designer creates computer languages
and applications that are environments, contexts for creating content. ...
The user creates content that the metadesigner makes possible
but does not determine.”

— “Metadesign: Toward a Postmodernism of Reconstruction,” Gene Youngblood, in *Ars Electronica*, 1986.

"... *technological* stimulants, will soon promote a behavioral mutation that will undoubtedly shape living conditions.
The METADESIGN of postindustrial social practices and behavior will then take over where the industrial era's DESIGN of forms and objects left off."

— *The Art of the Motor*, Paul Virilio, 1995.



“Metadesign is a set of four cognitive tools:
(a) diagram; (b) abstraction; (c) emergence; (d) procedure.”

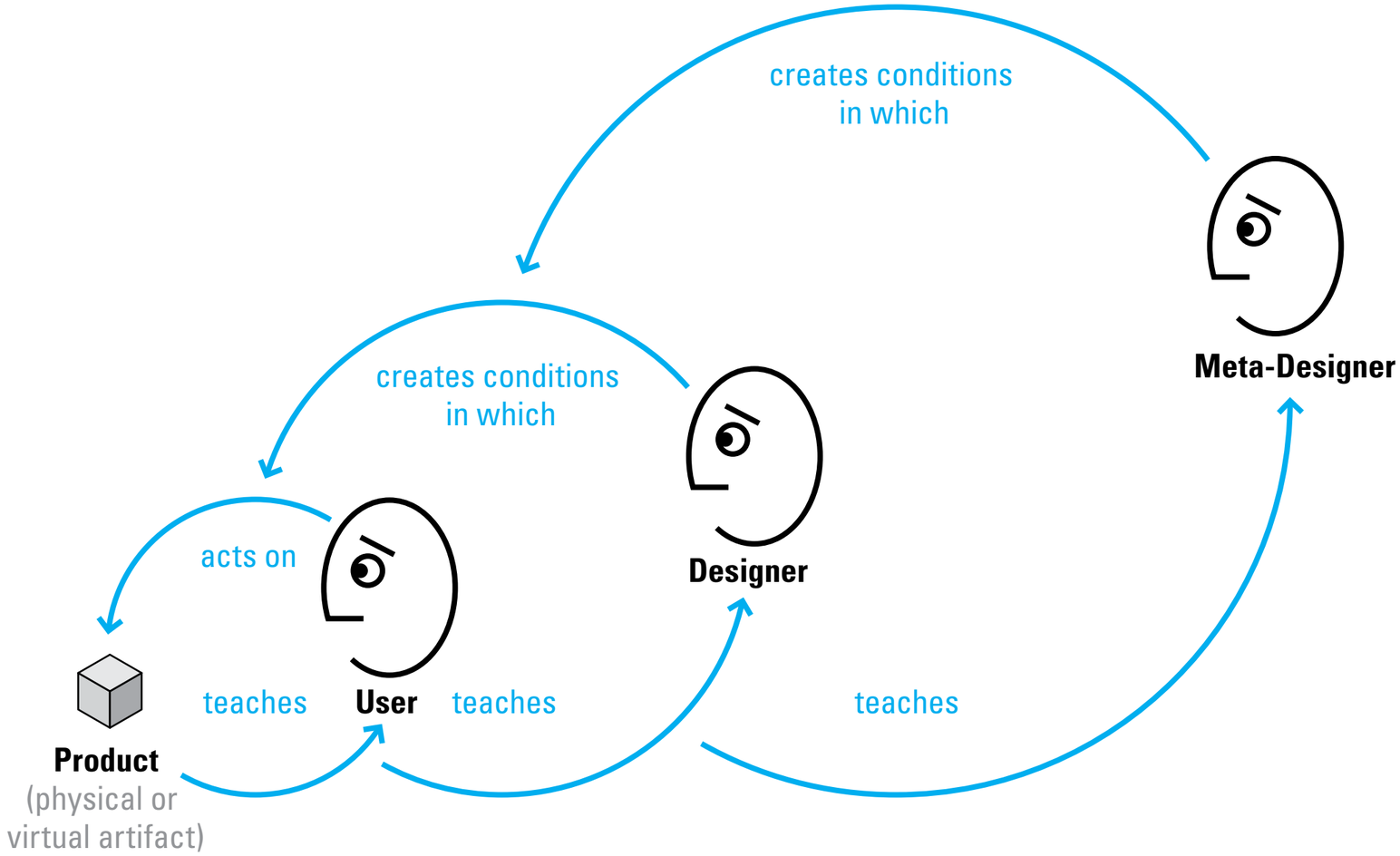
— “Design and Politics: Metadesign for social change,” Caio Adorno Vassão, 2017

https://pdfs.semanticscholar.org/b4ea/ab4b441d943194660ee44a94bfb3fcca70c5.pdf

Meta-design as co-creation:

service systems

Meta-design: Creating conditions for systems to grow, learn, and thrive—and for the conversations that make that possible.



Young designers often begin by designing within existing systems;
as experience increases scope of work may increase.
Also as experience increases, designers may need to adjust rules,
then add to elements, and then create new systems.

Traditional design practice
working within existing rules

- at the component level
- at the ensemble level
- at the product level
- at the network of products level

Emerging meta-design practice
creating new rules

- for new types of components
- for new types of ensembles
- for new types of products
- for new types of industries

Meta-design as reform of practice and education:

manifestos and models

Designers are continually redesigning design, for example:

“First Things First: A Manifesto,” Ken Garland et al., 1964.
http://www.designishistory.com/1960/first-things-first/

“Design for the Real World,” Victor Papanek, 1971.
https://monoskop.org/images/f/f8/Papanek_Victor_Design_for_the_Real_World.pdf

“First Things First (Revisited),” Eye + Tibor Kalman, 2000.
http://www.eyemagazine.com/feature/article/first-things-first-manifesto-2000

“Icograda Design Education Manifesto,” 2000.
https://www.ico-d.org/database/files/library/IcogradaEducationManifesto.pdf

“Icograda Design Education Manifesto,” 2011.
https://www.ico-d.org/database/files/library/IcogradaEducationManifesto_2011.pdf

“Design Futures Research,” Meredith Davis et al., 2018.
https://www.aiga.org/sites/default/files/2021-02/introduction-to-design-futures.pdf

“DesignX: A Future Path for Design,” Don Norman et al., 2019.
https://jnd.org/designx_a_future_path_for_design/

“Future of Design Education,” Don Norman et al., in progress.
https://www.futureofdesigneducation.org/

A timeline of meta-design events

- *Designing Programmes*, Karl Gerstner, 1964.
- “Metadesign,” Andries van Onck, 1965.
- *Sciences of the Artificial*, Herbert Simon, 1968.
- ‘MetaDesign’ (the consultancy), Erik Spiekermann et al.,1979.
- “Design and Environment or How Political Economy Escalates into Cyberblitz,” Jean Baudrillard, 1981.
- “Metadesign: Toward a Postmodernism of Reconstruction,” Gene Youngblood, 1986.
- “The Art of the Motor,” Paul Virilio, 1995.
- “Metadesign,” Humberto Maturana, 1997.
- “Metadesign as an Emergent Design Culture,” Elisa Giaccardi, 2005.
- “Metadesign: Object and Environment in France, c. 1970, Larry Busbea, 2009.
- “Design and Politics: Metadesign for social change,” Caio Adorno Vassão, 2017.
- *Metadesign*, John Wood, book in production.

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