Design thinking
- implications for the issue of designing for mass impact

Wolfgang Jonas
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Germany

„Design for a billion“, Gandhinagar, 7/8/9 November 2014

„There is no purer myth than the notion of a science which has been purged of all myth.“
Michel Serres
Overtures
Overtures

Essays in Gandhian Economics

Diwan, Romesh

Created by Natalie Z. Wong for Jugaad Innovation, LLC.
modesty
lack of respect
systematic doubt
moderate optimist
dilemmas of rationality
activist
MUMBAI (17 Sept. 2014):

World's largest furniture retailer Ikea today said it has plans to invest Rs 12,500 crore to set up 25 stores in the country over the next decade.
(crore = 10 million)

The first „Great Transformation“

The „dis-embedding“ of the markets.

Karl Polanyi (1886-1964): The Great Transformation (1944)
“The average Ecological Footprint per person worldwide is 2.6 global hectares (6.5 global acres), while the average biocapacity available per person is 1.8 global hectares (4.5 global acres).”

Wackernagel & Rees (1996)
Reduction, alternative paths ...

In persuading people to buy things they don’t need, with money they don’t have, in order to impress others who don’t care, commercial design is probably the phoniest field in existence today.

– Victor Papanek
Dean, California Institute of the Arts

Victor Papanek (1971)
Reduction, alternative paths ...
Reduction, alternative paths …

… for the first 10 %

Cynthia E. Smith (2007)
The role of design
The role of design

Production
Dynamics of the economic and financial system
„unchained capitalism“

Design
The willing executor?

Consumption
Sociology and psychology of consuming
„insatiable consumers“
The role of design

UBS Asian Consumption Fund

Investment objective: Achieve long term capital appreciation

The Fund aims to achieve long-term capital appreciation by investing primarily in securities within the Asia ex Japan sectors: consumer discretionary, consumer staples and healthcare focusing on those companies that have substantial business exposure to Asia. The Fund may also invest in companies based in developed markets that are expected to benefit from Asian consumer growth, as well as Asian consumer companies tapping business growth outside of the region.
KYOTO DESIGN DECLARATION 2008:

"A statement of commitment by the members of Cumulus to sharing the global responsibility for building sustainable, human-centered, creative societies. …

Human-centered design thinking, when rooted in universal and sustainable principles, has the power to fundamentally improve our world. It can deliver economic, ecological, social and cultural benefits to all people, improve our quality of life and create optimism about the future and individual and shared happiness. “
Design is permanently changing …

NextDesign (2012), The Semantic Turn (Krippendorff 2006)
**Design has / claims extremely broad subject matters**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Subject matters / Areas of Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platon</td>
<td>The beautiful (τὸ καλὸν)  The true (τὸ ἀληθὲς)  The good (τὸ ἀγαθὸν)</td>
</tr>
<tr>
<td>Vitruvius</td>
<td>The beautiful (Venustas)  The solid (Firmitas)  The useful (Utilitas)</td>
</tr>
<tr>
<td>Immanuel Kant</td>
<td>Judgement  Reason  Moral</td>
</tr>
<tr>
<td>David Pye (1978)</td>
<td>The beautiful  The efficient  The useful</td>
</tr>
<tr>
<td>Bruce Archer (1979)</td>
<td>Products  Process  People</td>
</tr>
<tr>
<td>Nigel Cross (2001)</td>
<td>Phenomenology  study of the form and configuration of artefacts, the 1920s  Praxiology  study of the practices and processes of design, the 1960s  Epistemology  study of designerly ways of knowing, the 2000s</td>
</tr>
<tr>
<td>Alain Findeli (2008)</td>
<td>Aesthetics  Logic  Ethics</td>
</tr>
<tr>
<td>Wolfgang Jonas</td>
<td>Forms  Processes  Knowledges</td>
</tr>
</tbody>
</table>

Source: Jonas
The dilemma of rigor or relevance …

Donald Schön (1983: 42)

“... there is a high, hard ground ... effective use of research-based theory and technique, and there is a swampy lowland where situations are confusing "messes" incapable of technical solutions. ... the problems of the high ground ... are relatively unimportant to clients or to the larger society, while in the swamp are the problems of greatest human concern. …”

→This requires:

- appropriate notions of complexity
- ways of dealing with evolutionary uncertainty
- epistemological frameworks
  - which integrate thinking and making as well as normative, causal and evolutionary ways of knowing, and
  - which allow for reflecting user / stakeholder / observer / designer involvement
Design thinking - theorizing design ...
„There is no purer myth than the notion of a science which has been purged of all myth.“

Michel Serres
Matters of fact → matters of concern.

Latour (2013):
”In other words, why not transform this whole business of recalling modernity into a grand question of design?”
Problems of control, prediction and observation

Control:
- systemic wholes
- not completely determinable
- limited control

Prediction:
- evolutionary processes
- based on the past,
- experimenting with the new
- limited predictability

„Everything that is said is said by an observer.“ (Heinz von Foerster)
Systems thinking: my 4 „systems heroes“
“The reason for this is that there is no professional expertise that is concentrated in the expert’s mind, and that the expertise used or needed, or the knowledge needed, in doing a design problem for others is distributed among many people, in particular among those who are likely to become affected by the solution - by the plan - and therefore one should look for methods that help to activate their expertise. Because this expertise is frequently controversial, and because of what can be called ‘the symmetry of ignorance’ - i.e. there is nobody among all these carriers of knowledge who has a guarantee that his knowledge is superior to any other person’s knowledge with regard to the problem at hand - the process should be organized as an argument.”

Planning as civilized conversation in a mode of radical transdisciplinarity

"For the applied scientist, the scientific method has to incorporate an overall philosophy, however vague, inadequate, or difficult to justify it might be. This is what the Germans call ´Weltanschauung´... the main reason why the applied scientist does not simply apply the results of research alone, but also applies his world view.

... His role is tragic in a truly heroic way: he must act, but can never know whether his actions are appropriate. His role is also comic: his conduct has a humorous aspect that everyone can appreciate. As he is human, he is reluctant to become heroic. ...

"Weltanschauung“ and self-reflection as essential traits, the planner as tragicomic hero
“... designers play a key part in future development, not because they are more intelligent, or better informed, or more creative, but because they have been accorded the role of the overall synthesist. This is a role that does not even require the power to make decisions, for it is often enough to demonstrate the interrelations and their consequences, as well as the possibilities for ‘cybernetically meaningful’ new products, and to make sure they are talked about. No member of another discipline could assume this role. ... It is only the industrial and environmental designer who is confronted horizontally with all fields of knowledge. It is precisely these coordinators that are lacking today. “

Interconnected thinking, cybernetic integration of knowledges by design
"Closely related to the notion that new goals may emerge from creating designs is the idea that one goal of planning may be the design activity itself. The act of envisioning possibilities and elaborating them is itself a pleasurable and valuable experience. Just as realized plans may be a source of new experience, so new prospects are opened up at each step in the process of design. Designing is a kind of mental window shopping. Purchases do not have to be made to get pleasure from it.

... One can envisage a future, however, in which our main interest in both science and design will lie in what they teach us about the world and not in what they allow us to do to the world. Design like science is a tool for understanding as well as for acting."

Design as knowledge production, introducing „Research Through Design“
“The success of planning on such a scale may call for modesty and restraints in setting the design objectives and drastic simplification of the real-world situation in representing it for purposes of the design process.”
“The heart of the data problem for design is not forecasting but constructing alternative scenarios for the future and analyzing their sensitivity to errors in the theory and data. ...

... we can then turn our attention to constructing paths that lead from the present to that desired future.”

Projection and scenario-building as core competencies
Skepticism regarding the intelligence and social responsibility of the people

153:
“The members of an organization or a society for whom plans are made are not passive instruments, but are themselves designers who are seeking to use the system to further their own goals. …”

Simon continued …
“The idea of final goals is inconsistent with our limited ability to foretell or determine the future. The result of our actions is to establish initial conditions for the next succeeding stage of action. What we call ‘final’ goals are in fact criteria for choosing the initial conditions that we will leave to our successors.”

“Social planning without fixed goals has much in common with the processes of biological evolution. Social planning, no less than evolution, is myopic (short-sighted).”

The problems of prediction and control, small tentative steps, no final goals
Simon continued ...

167:
“Our grandchildren cannot ask more of us than that we offer to them the same chance for adventure, for the pursuit of new and interesting design, that we have had.”

The prosaic ethical imperative: Design for future flexibility - increase the variety of choices
My 4 „systems heroes“ - incompatible or complementary?

- "Biocybernetics" missionary
- "Sciences of the Artificial“ positive
- "Philosophy of social system design“ melancholic
- "Second generation design methods" ironic

- strained prescriptive
- composed descriptive
- optimistic empirical - analytical
- pessimistic philosophical - reflective
Facts and values in sociological theory (Lykins 2009)

Source: Jonas, adapted from Chad Lykins (2009)
Epistemic democracy establishes the design / inquiring system of „Research Through Design“

Dewey: „epistemic democracy“

„Research Through Design“

The disembodied, objective Cartesian inquirer is replaced by an embodied, social, intentional inquirer.
Research Through Design

The RTD model comprises three systemic dimensions:

(1) the wider context of a design situation or the relevant environment,
(2) the design / inquiring system, which may be a designer / scientist, a group, a company, a community, etc. and
(3) the driving force, which is determined by the value base, the motivation and the goal of the inquiry.

All of these are not „given“, but have to be negotiated by stakeholders, designers, the wider public…
The cybernetic concepts of 1st and 2nd order observation are helpful for the distinction between classical detached inquiry and situated inquiry. The diagram, inspired by Ranulph Glanville, attempts to substantiate the concepts of research FOR / ABOUT / THROUGH design as introduced by Archer and Frayling ...

<table>
<thead>
<tr>
<th>Observer position and perspective relative to the design / inquiring system and the life-world</th>
<th>1st order cybernetics</th>
<th>2nd order cybernetics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observer is situated outside the design / inquiring system producing facts</td>
<td>Observer is situated inside the design / inquiring system producing (arte)facts based on values</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Observer looking outwards</th>
<th>research FOR design</th>
<th>research THROUGH design</th>
</tr>
</thead>
</table>

| Observer looking inwards | research ABOUT design | research AS design (?) |
Research Through Design - 3-step process models

**Research Through Design** with the phases **ANALYSIS - PROJECTION - SYNTHESIS** is one possible realization. Note the analogy to **Transdisciplinarity Studies**.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Phases / components / domains of knowledge production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fallman (2008)</td>
<td>PROYECCIÓN: Design Studies, Design Exploration, Design Practice</td>
</tr>
<tr>
<td>Transdisciplinarity Studies</td>
<td>System knowledge, Target Knowledge, Transformation Knowledge</td>
</tr>
</tbody>
</table>
Design might be the new model for Transdisciplinary Science, as has been suggested by Glanville, who describes Science as a specific sub-category of Design.

The concept of Mode-2 science with its emphasis on socially robust instead of true knowledge might be a strong theoretical support.
Research Through Design integrates Design and Science by means of abductive PROJECTION

<table>
<thead>
<tr>
<th>ANALYSIS</th>
<th>PROJECTION</th>
<th>SYNTHESIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Induction</td>
<td>Abduction</td>
<td>Deduction</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>„Normal Design“</th>
<th>System knowledge</th>
<th>Target knowledge</th>
<th>Transformation knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Research / Mode-2 Science / Transdisciplinarity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scientific Research / Mode-1 Science</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Jonas
How to advance the new „Great Transformation“?

In order to achieve this new “Great Transformation”, Polanyi’s first GT will have to be reversed in major parts.
The „re-embedding“ of the markets into society.
Niche actors are the essential initiators

Global cooperation

The proactive state

„The design of the unplannable“

Source: WBGU (2011)
Niche actors are the essential initiators. They act in the mode of „epistemic democracy“ following the process model of …
Conclusion: Bottom-up approaches …

... for breaking seemingly fixed social / economic / technological trajectories, referring to various experience:

- Gandhian economics
- Jugaad innovation
- Transition towns
- ...
My conclusion

Instead of

„Design for a billion“

→ „Design through glocal communities“

No final solutions, but small, reversible, and scalable designerly projects, real-life laboratories ...

... small steps in order to increase the variety of choices.
The end
Design tries to bridge these gaps by means of artefacts ...

... Design as the expert discipline for dealing with not-knowing
Prediction: Evolutionary patterns in natural and artificial processes (was slide 25)

Design is creating **variation** in sociocultural evolution …

The conscious **Design process** (A - P - S) is just the **variation** part of the evolutionary **trial & error** process.
Critical reflection of (our) positions within systemic design ...

<table>
<thead>
<tr>
<th>Hard Systems Thinking (HST)</th>
<th>Soft Systems Thinking (SST)</th>
<th>Critical Systems Thinking (CST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>systematic</td>
<td>systemic</td>
<td>critical to ideas of reason</td>
</tr>
<tr>
<td>mechanistic paradigm</td>
<td>evolutionary paradigm</td>
<td>normative paradigm</td>
</tr>
<tr>
<td>instrumental</td>
<td>strategic</td>
<td>communicative</td>
</tr>
<tr>
<td>efficiency emphasised</td>
<td>effectiveness emphasised</td>
<td>ethics emphasised</td>
</tr>
<tr>
<td>Management of scarceness</td>
<td>management of complexity</td>
<td>management of conflict</td>
</tr>
</tbody>
</table>

Flavors / paradigms of systems thinking (Hutchinson 1997, in Ulrich 1988)