

Crafting Transition Designs: The Urgency of The Slow's resistance to The Big

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Oppositional thinking can be productive so long as it is held lightly, or not for long. When the heuristic is mistaken for the true, things get cut down to size to fit those categories.

I write from the perspective of design. I am making the assumption that I am mostly addressing people invested in various forms of craft.

Aside:

What does it mean to be invested in craft? On the one hand, this means to valorize a rich material practice. That valorizing happens in and as making, often in opposition to other kinds of practices, like writing, arguing, theorizing. If you have discourse about the value of craft, that discourse is mostly likely quite distinct from the act of making. To be knowingly, articulately, invested in craft then is perhaps something like a contradiction. I say this not as critique. On the one hand, I merely wish to point out the limit of excessively oppositional thinking. On the other hand, I want start to indicate some of the messiness that is needed to act politically with respect to the value of craft. The important resistances that craft affords to today's all-consuming 'teconomy' do not act on their own. It is not as if our societies can be transitioned out of unsustainability by makers focusing entirely upon their craft. To have political agency, those material acts must be recast within more discursive media that will feel by comparison, quite craftless, or at least much less material.

Craft vs Design

Some key figures in the discourse of design define design in opposition to craft. Both Christopher Alexander (1964) and John Chris Jones (1970), in seminal texts at the beginning of the Design Methods Movement, give historical accounts of design arising as a deliberate break with craft. In these accounts, craft is characterized by:

- small run: the hand-made-ness of completed artifacts means that production output is of limited scale and slow pace
- variable: being hand-made means that each artifact is only ever more or less similar (within the constraints of the skill of the craftsman and nature of his or her tools), with variations resulting from the individual nature of its production (see also Pye 1968)
- trial-and-error: as a material practice, craft is without articulated methods or principles; the practice is reproduced through imitation (apprenticeship) and its artifacts evolve more or less at random (within the constraints of the materials, tools and the intended function – i.e., what works)

According to Alexander and Jones, these traits served conservative communities well. But when societies began to require larger projects – the building of military vessels for the project of imperialism for instance – different approaches to making became necessary. Designers appeared as the people at the head of the division of labor, directing teams of craftspeople. That directing was done via drawings, abstract representations specifying what was to be made and even how.

Design comes into its own when the leap is made from using drawings to direct production to using drawings to make creative leaps about what might be produced. Over time, designers were not only able to develop new ideas through sketching, but also evaluate those ideas without needing to field test full-scale material productions. This is why the essence of design is forethought, the capacity to think through future scenarios before having to build them. What gets produced is more reliable, not only because the blueprints force makers to make identical things more efficiently, but because what gets produced at scale has been virtually stress-tested before going into production.

I want to underline this last point because it is the center of the argument I am trying to make. Design is the art and/or science of foreseeing. I say ‘art and/or science’ because precisely what Alexander and Jones were trying to do with this exaggerated fiction about the history of modern design being distinct from craft was to indicate that previous forms of designing were no longer adequate to the job of foreseeing reliably in increasingly complex societies. There was a need for new Design Methods that could bolster design-by-sketching’s capacity for foresight. The Design Methods Movement sought to perfect the evaluative capacity of designers that began with design’s separation from craft.

Aside:

Alexander and Jones both rejected the Design Methods they helped found and in many ways returned to variations of craft – see for instance the interview with Alexander in Cross (1984), and Jones’ Preface to the Second Edition of Design Methods (1992). Alexander dedicated himself to uncovering patterns of dwelling common to the built environment across cultures though varied by bioregional specifics. Jones advocated the design method that undermines all other methods: systems of randomization.

To evaluate a sketched-out design, even a prototyped one, is perhaps best characterized as neither an art or science, but, very exactly, a craft. To make judgments about representations of future things requires a rich sense of what their realization will entail. A craftsman’s material sensibilities are required to determine whether those materials could be manufactured into such products, and how those products will feel to use in a range of contexts. There is also a craft-like ‘visual thinking’ needed to make richly meaningful marks that creatively point to future things while also doing the work of translating materiality and experiences into legible representations.

This argument – that at the heart of design as foresight remains craft – is easier to make when designing is done ‘by hand,’ i.e., drawing. The Design Methods movement was not only prompted by the increasing complexity of societies, but also by the promise that computation could and should play a role in making sense of, if not taming, that complexity. Computer Aided Design was an explicit objective of the Design Methods movement, to the extent that the movement attempted to modify design processes to make it more amenable to calculative reasoning – part of what prompted a backlash.

Outsourcing evaluation of designs, and even the generation of designs, to computers seems quite anti-craft. But Malcolm McCullough (1998) amongst others has effectively shown that craft sensibilities remain in computationally mediated environments, from the hand-eye coordination of drawing on screen with a mouse, to the capacity to discern patterns in the aesthetics of data.

More, Faster, by Design

So, let's say that I speak from design to craft. The way I have recounted the difference, design appears to be the better: the more innovative, the more insightful and reliable. Nevertheless, you do not have to look far to see how devastating this 'better' form of making has been. Since design has moved to the head of the division of labor of making stuff, our societies seem have become almost irreversibly unsustainable.

That unsustainability however derives not so much from qualities associated with this or that product – at this level, we could admit that design can result in higher quality, more useful products (though they could always be more efficient, less toxic, etc). Rather, our societies are unsustainable as a result of the sheer quantity of stuff that design-led making affords. What appears to have been unanticipated by design's foresight are the collective consequences of so many designs. In other words, what is at issue is less the design of large things, such as the ships that seem to have spurred the development of design, than the design of a large number of things as a result of design's capacity to specify the production of the identical. Design is the sorcerer's apprentice of apparently limitless replication.

Aside:

Architecture should be differentiated from design. The issue here is the scale of what is being produced. Design produces things, a word we use to refer mostly to objects of human-scale. A thing tends not to be alive – it is politically incorrect to call or treat a person and even an animal as a thing. But a thing also tends not to be an inert lump; it should have a function, even an operation – which is to say it should be of handleable size.

Certainly, architecture involves design. This happens not only when architects become responsible for interiors and even furnishings, but also when they scale-down what they are building to the size of a maquette in order to comprehend and manipulate it. But when architecture (or planning) tries to think at the scale of whole buildings or cities, this is perhaps something other than designing.

For the same reason, there is engineering design and then forms of engineering (of large structures and infrastructures) that are not designing.

Another important difference is that architecture produces one-offs. Each architectural project is supposed to be unique – site-specific for instance. Modular architecture for 'kit homes' seems to be another example of when architecture is in fact doing design, but for this very reason, these are not considered iconic exemplars of architectural practice.

Buildings nevertheless last a long time, or should, and so, especially when they are public institutions (which are often exemplars of architecture), will impact very large numbers of a people who work in them, move through them, or even just see them. So while the architect may only make one building at a time, and perhaps only a dozen important ones over the life of their professional practice, those structures will structure the work and perhaps lives of a large number of people. Nevertheless, the scale of an architect's impact may often still be very limited compared to that of a designer, whose pocket-sized device sells in the millions or more, and is used for hours on end for years.

An interesting category in this regard is interaction design. The person who designs an applet on a social media platform may impact the daily life of a billion people. Is that widget a designed thing even though immaterially digital; or is that person more properly understood as an 'information architect'?

All of this is perhaps a convoluted way to say that design is what lies at the very heart of technological commodification. Design takes quality ideas that arise, in the best cases, from a keen sense of the material practices of the human condition, and then works out methodically how to produce those ideas at great quantity.

There is invariably some compromise needed in this process: the context specificity that perhaps motivated the original innovation must be tempered with the requirements of efficiently standardized production methods. But, so argues design, the situatedness that is lost is more than compensated by the democratization of the innovation that its redesign accomplishes: more people can afford to get some of the quality of improvement that that innovation accomplishes.

Perhaps then it is better to characterize the designerly source of our societies' current unsustainability in terms of speed rather than size. Designers design mid-sized things, and they do so in each case with forethought; but it is precisely the specification involved in the latter that affords rapidly wide-spread production of those things. We end up with big problems faster than they can be anticipated and so avoided because so many small things get produced in such short amount of time.

And do not forget that design not only speeds things up in terms of production and product diffusion, but also by enabling creative leaps. The same process of visualization that allows ideas to be virtually tested without needing field trials allows designers to imagine radically different products, environments and even human practices. If these disruptive ideas appear on paper or in the community to be viable, then we as a society can be accelerated into very new conditions. It is not that design thinks big things; rather it can think things into existence that speed society up into new ways of living and working, because those things can also be produced for, and then used in, everyday life at scale.

In the fable that I am recounting we therefore have a process of design that emerges out of the desire to create bigger things, but along the way develops the capacity to speed things up, by leaping to new possibilities and then specifying ways in which they can be deployed in our societies in vast numbers quickly. But an unforeseen consequence of that increase in speed has been very large scale problems.

Goliath, designer

Oppositional thinking then suggests that our response to these large scale problems of speed should involve slowing down, reducing scale, getting local, being more deliberative, celebrating the long-form qualities of material details. If our problems arise from design's separation from and domination of craft, we must restore the centrality of craft.

Aside:

I am framing this argument about the dangers of design in terms of size and speed to side-step some other common critiques of design-as-technological-commodification that I believe are misdirected. I am thinking of critiques that proceed by way of, yet often reinforce, mind-body separations. Craft, it is argued, is smaller and slower, and so better than design, because it is an embodied material practice, or vice versa. I am thinking of less academic, recent celebrations of being a maker/maintainer/repairer such as Crawford (2010), Korn (2015) – though embodiment is not the only virtue of craft that these books argue for.

I indicated in a previous aside that in fact design's process of testing ideas, while virtual, depends on craft-based experiences with materials and visuals, and on ethnographical participant-observation of people's everyday activities. Design avoids having to do full-scale, live field-tests because it is, in its best cases, an expert improvising mime artist, experiencing lived futures on the basis of scant props in minimalist scenarios. There is an embodiment that remains central to designing.

Further, all design is the design of body-thing interactions. The essence of design lies in what James Gibson's tried to identify with the term 'affordance;' perceived action possibilities (see Norman 1999 for the introduction of this notion to the practice of design). Rather than the form of things being decoded into remembered actions by a computational mind, people (and animals) perceive interaction-ables, because seeing is in fact a kind of imagined-doing-with. This is why affordances can be immediate yet creative (e.g., in emergency situations, innovative repurposing of some things can be done apparently without thinking) rather than contemplative correlations to a limited set of experienced actions.

This is not to say that the discipline and profession of Interaction Design has not tended toward overly cognitive versions of fairly restricted ways of being bodies. The digital devices of late capitalism do seem to be reducing our being-in-the-world to various versions of fingers-on-glass (Victor 2011), or worse retreats into virtual environments. These are not necessary tendencies in design however.

The point is perhaps better made in another direction. Design for mass production is clearly part of industrialized capitalism's alienation of labor. Compared to the evidently hand-made-ness of crafted objects, designed products appear in our households and workplaces fully formed, without any sign that they were made by someone somewhere, or even that they were designed by someone somewhere. Design, apart from exaggerated icons, is inherently anonymous. Consequently, exposing traces of workers on mass produced designer goods appears to be an act of resistance.

But this humanist gesture occludes the ways in which products are animated by design to be sensitive to the needs and habits of people. Talk of affordances means that a chair, merely by its design, is offering itself as a weight-relieving service. When the presence of the maker or designer is evident in a product, it can over-shadow the way in which such a product is already a non-human actor, playing a vital role in what it means for our society to be civil (Latour 1992). As Elaine Scarry has argued (1985: 291-2), the anonymous product is more of a gift with respect to the work it can do for anybody who comes across it than the product made specifically for one person by another. In other words, there is a danger of restricting our understanding of embodiment if only those humans who make are considered to be authentically a body, as opposed to the bodying-forth that the products of those humans accomplish without them.

For these reasons, I think that it is important to acknowledge that designing and designs have embodiments that are only different not less than acts of crafting. This seems more resistant to capitalist alienation than a direct opposition based on reductive accounts of embodiment.

But you cannot counter the big with the small or the fast with the slow. By definition, the small can only have a small effect, so will quickly be overwhelmed. And while the slow might be able to provide local and temporary resistance to the fast, it will not be long before such resistances are overrun. Appeals to craft, especially when it is cast in stark opposition to techonomy-oriented design, seem destined to be inadequate.

In fact, this conceptual challenge to the value of craft in an era of acceleratingly designed crises is subject to two further challenges: explicit derision and appropriation.

When the planetary scale and consequent urgency of our societies' current unsustainability is acknowledged, a common response these days is to demand bigger and faster. We need a Manhattan Project Moonshot that can "science the shit out of this," (a quote from *The Martian* (2015)). By comparison, acts of craft-like caretaking constrain the prometheanism now needed, denying that we moderns are, in essence, "explorers, pioneers" (a quote from *Interstellar* (2014); see Monbiot (2014)).

The most explicit instance of this is the Proactionary Imperative (see Fuller & Lipinska 2014). This post-Kantian manifesto was drafted in explicit opposition to the Precautionary Principle, a center-piece of ecological sustainability. The latter argues that initiatives should not take place if the risks involved are possibly large-scale and wide-spread even if we cannot know, scientifically the likelihood of those risks. The Proactionary Imperative argues that initiatives must be undertaken despite their risks if there is a possibility that the outcome could be of wide-spread and large-scale benefit. The Proactionary Imperative is therefore an exponentializing of design's use of creative leaps without any of design's virtual risk evaluations. It extols craft's 'just do it,' or at least craft's 'you must do it to see,' without any of craft's protective constraints, slowness and small-scale-ness.

The appropriation of craft is more direct with the techonomy's insertion of Agile and Lean into Startup culture. Agile was originally a software development philosophy which aimed to shelter developers from inappropriate forms of management (Bulajewski 2013).

It involved firstly refusing fixed masterplans for whole systems that needed to be created all at once, working instead on iteratively building functioning interrelated components without a determined final form; and secondly, giving the development team time outside of conventional management review to build component systems that could then be proven to work (rather than prejudged as to whether they meet the 'requirements specifications'). Some tech companies and startups added aspects of Lean Manufacturing to Agile (Ries 2011). Lean processes focus on waste avoidance, but as with Agile, through a workplace culture that fosters worker autonomy rather than Taylorist management-by-control. The aim is to ensure that the right thing is manufactured as opposed to efficiently producing the wrong thing. The link with Agile lies in the general promotion of rapid action-research cycles of build-test-learn. The Lean Startup jargon is 'minimum viable product' – design teams formulate hypotheses that can be live-tested with an in-the-field beta-release of a new feature or component. If you have experienced frequent updates to an application, you have been subject to Lean UX practices that were perhaps the result of an Agile development 'sprint'.

Aside:

Actually, you have probably been subject to such experiments without realizing it. Internet-based services are easy to manipulate at-scale in real-time, so hypotheses can quickly be designed into versions of an application to test user reaction with significant n-numbers – what is often referred to as A/B Testing. The validity of these experiments however depends on users not realizing they are in an experiment: internet and application users are now generally used to changing interfaces so do not discern when an experiment is being done on them; further, such users also nevertheless trust that what they are looking at is something that is common to everyone rather than particular to them (i.e., algorithmically tailored to their search history and use habits).

The wider issue here concerns the way digital environments afford rapid in-the-field testing. There is already a substantial discourse that these hyper-empiricist possibilities enable designers to do away with theory – no need for a warrant for your hypothesis when you can test every possibly hypothesis (Anderson 2008) – and forethought – you can never fully predict the outcome, so you should always test anyway.

These discourses depend on the mostly low-risk nature of digital environments – should something go horribly wrong, just restore the previous version.

It would appear that this worldview is now spilling into non-digital domains. The maker movement's small-scale rapid manufacturing innovations allow a proliferation of 'minimum viable products.' The post-conventional oil and gas boom, along with the related collapse in commodity prices as a result of consumer demand failing to return after the Global Financial Crisis, has also allowed large-scale manufacturing to afford multiple version releases of new kinds of products, such as wearables.

In either case, the ecological impacts of such 'hyper-empiricism' – on the resource consumption side and the pollution and e-waste sides - continues to be externalized.

With Agile and Lean, designers in the techonomy appear to be appropriating a craft-like evolutionary approach to innovation. The acceleration that design enables in the end seems to consume design itself. Design was a way of avoiding material tests of creative leaps through virtual evaluations. Design could move faster than craft by using embodiment-derived, studio-based material and visual thinking. But now live testing is faster than any form thinking apparently.

Certainly what is lacking is any sense of craft – not only in the sense of aesthetic skill and care in the production of 'minimum viable products,' but also in the sense of a diverse experience-derived expertise that informs not only judgments (about fit with existing patterns) but also creative moves (about things that would be genuinely novel). The latter is devolved to the random.

I am arguing that we are now in a dangerous conundrum. On the one hand, there is the demand for massively disruptive visions and projects – that only such planetary-scale (or in fact, cosmos-scale) ventures are adequate to our critically unsustainable situation. On the other hand, there is the insistence that things proceed through rapid iterations of material experimentation. If the former is the result of design turning against craft's small and slow, the latter is the result of a techonomic neo-craft that turns against design's forethoughtfulness.

What then is to be done?

Crafting Transitions

If my argument so far has depended on excessively oppositional thinking, a facile response is: 'both/and' rather than 'either/or'. Or since 'both/and' is still in binary opposition to 'either/or' – do at least three things, or three levels of things.

To explain, consider recent discourses concerning 'Transition.' This research draws primarily from histories of sociotechnical change. Technologies are developed by communities of people in response to currently perceived problems; as those technologies are adopted, those communities modify their ways of living and working, spurring both redesigns of those technologies and shifts to other kinds of problems. This process of co-evolution, as with ecosystem transitions, are far from linear as they are impacted by a complex array of factors. Sociotechnical Transition Theory (Geels and Schot 2007) proposes that that complexity can be heuristically analyzed in terms of three levels:

- 1) a slow-moving large-scale infrastructures and widespread imaginaries,
- 2) sets of more or less stable organizations and mostly habitual everyday practices comprising, at the least, constellations of devices, skills and meanings
- 3) situations in which some people are able to experiment with new ways of living and working.

Multi-Level Perspective approaches to Transition (Geels 2010) suggest that innovations that prove successful in a particular niche (3) can only become more widely adopted as a practice (2) when those constellations are being weakened by fractures in larger scale systems (1). This will always be a multi-stage process. At each stage, there might be a particular vision guiding expectations of new technologies, practices and communities; but once a next stage is reached, it becomes necessary to modify the vision according to the new conditions afforded at that stage.

Taken prescriptively, rather than descriptively, Transition Theory suggests that any initiative aiming at enabling structural change – such as halting the unsustainability associated with the accelerating of volume of designed products – needs to:

- a) exist within a comprehensive vision of the future, one that is both forceful and yet modifiable
- b) connect strategically to various pressures currently impacting existing infrastructures and imaginaries
- c) have a clear sense of the current niche context in which it is co-evolving robustness
- d) involve actions or articulations that transform existing organizations and/or their impact
- e) involve actions or articulations that weaken existing mainstream social practices

Consider the Maker Movement. Rather than deterministically hoping that new technologies will result in social change, this field of activity has worked concertedly at also establishing itself as community of practice. Co-working Spaces and regular Maker Fares have created niches in which new techniques are developed and shared (c). Sometimes that Maker Movement is also assertive about its resistance to current forms of intellectual property, especially when those regulations forbid modification or repair (d). There are even those who try to articulate fractures in current sociotechnical regimes (b) and so visions of alternative futures (a – see for example Rifkin 2014). This is the sort of multi-level strategy that is necessary to make Maker-ing the basis of some kind of Transition.

However, the Movement's visions and practices do seem to lack comprehensiveness. On the one hand, much of the Maker Movement, while promoting smaller-scale production, still depends for its inputs on large-scale systems of production – e.g., plastics for printing – and outputs – waste management. Mid-sized systems for ensuring the safety and reliability as well as aesthetic care, of what is produced also seem lacking. The vision driving the Movement remains restricted to products, with still immature relations to adjacent practices, such as producing and/or distributing sustainable food, or securing the necessary surplus time to undertake Maker-ing activities. In short, the Movement has some elements of Transition, but lacks others that would build out a comprehensive strategy for staged Transition.

This is a lot to ask. But without a presence at multiple levels over time, the small and slow will remain ineffective against accelerating unsustainability. To craft futures in which the more responsible aspects of craft can play a more significant role in our societies will require design for transitions (Irwin et al. 2015).

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