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Viewpoint
De-Colonizing Design Thinking

What Daniel Defoe's Robinson Crusoe salvaged for his castaway home was far more than a ship's hold of materials, tools and animals, and far less material to behold (Figure 1).[1]

What Crusoe's raft invisibly brought from his sinking ship was his British culture. The sailing ships of the times were container vectors of cultural colonization. Their brain-holds carried their home-nations' colonizing beliefs, values, ideas, motivations, and empire-building technologies. Crusoe's island settlement inevitably mirrored his home island origins, and was built from of the patterns of his socially constructed inner world.

Historical distance has sharpened our modern awareness of the consequential pros and cons of colonization. And after some hard lessons learned, the spreading tide of physical empire building has turned toward a de-colonizing ebb.

Not so, however, for the modern electronic colonizing vectors that continue to sail, fully value laden, effortlessly and instantly onto every island outpost in the world. And not so too of the ways that root-metaphors born out of an industrial past continue to invisibly hinder our ability to cope with modern ecological crises. C.A. Bowers calls these taken for granted metaphoric conditions that freeze our conceptual thinking in a previous era "the colonization of the present by the past."[2] This essay explores another situation in which there is a tendency of one way of thinking to colonize another.

Two Thinking Cultures, Two Thinking Worlds

In this thought experiment, scientific thinking and design thinking are likened to different countries with their own unique cultures, distinctive outlooks, purposes, processes and products. Scientific thinking, which focuses on the manufacture and export of empirical truth and knowledge, is the more successful and dominant culture. Doing science is a process of distilling useful and reliable factual knowledge of how things are and how they work. The less well-understood dominion of design thinking is oriented and targeted to a very different, if equally immodest end. Its focus is on the creation, development, remodeling, manufacturing, and meaning of all human artifacts.

The two cultures are symbiotic. They use and depend on each other's products. They share a common language that each naturally bends toward its own ends. But today they remain far from equal partners — and like all unequal traders, their relative inequality causes them to interact in a somewhat unequal manner. The assumption here is that a closer look will reveal the ways in which the dominant, empirically-oriented partner is unconsciously privileging the source meanings of its own root metaphors to define and characterize the other's culture. Awareness of that colonization becomes the necessary prerequisite to uncovering and legitimizing the unique meanings that underpin and identify design thinking.

Figure 1 This shipwreck illustration is from a short work entitled *Robinson Crusoe, My Journals and Sketchbooks*, illustrated and written by Michel and Anie Politzer.

Metaphors under the Microscope

The following explores the differing "in-country" meanings of four root metaphors that the two cultures share: *problem*, *intervention*, *limits*, and *satisfice*. This is a short sail and a bare beginning. No doubt there are many more metaphors to uncover that are masking meaning in design thinking, and deserve reconsideration. I'll establish what I believe to be the dominant and taken for granted usage of each concept, and then describe the concept's situated meaning from the design thinking point of view.

Both points of view being considered are deeply embodied perspectives – by which I mean deeper cultural immersions than the mental shifting of gears that Daniel Dennett calls "stance."[3] I think of it as the difference between being born into a country and its language, and travelling there. For example, only her very Swiss friends would comprehend why the ever so talented, brilliant and wealthy Heidi would take up prostitution. "Well, you know Heidi," say those friends, "she has suffered some major expenses recently and would never touch her capital!" A radical, experimentally-grounded empiricism is embedded in, and holds just as tightly to its objective and logical rationality.

Problem

1. Def. gen. – Something "thrown forward" that needs attention and needs to be dealt with or solved.
2. Def. sci. – Something to be solved empirically through reasoning.

This latter scientific conception of a problem, which dates back to Plato, remains the dominant darling of our Modern times. These are the kinds of problems that are associated with the hard sciences. They welcome the precision of mathematical description and can be disassembled like clockworks under analytical decomposition. They observe a hard and strict rationality. The modern ideal of an experimentally-based scientific problem is one that can be rationally pursued and rationally resolved into a useful, reliable, verifiable, falsifiable addition to an ever-expanding body of factual knowledge.

As seen from this scientific ideal, the problems taken up by designing look both trivial and perverse – trivial in the sense that they explain nothing profound about the universe, and perverse in their stubborn and irrational human complexity. Design problems through this lens are not tidy. Their

descriptions are not adequately objective, consisting only of fuzzy social constructions. They are unstable, often changing as they go. They are arbitrarily bounded and reach no definitive and transferrable conclusions. Worst of all, they reopen the door to all of the beliefs, values, narratives, and myths that it has taken over two centuries to vanquish from modern scientific culture.

Horst Rittel, writing out of a tradition of rational planning in the 70s, famously critiqued such badly behaving planning and design problems and labeled them as "wicked." Every wicked problem was unique. Their solutions were not true or false but good or bad, and depended on the world-view of their designers. He catalogued their heretical divergence from proper problems (my emphasis added):

"1) Wicked problems have no definitive formulation, but every formulation of a wicked problem corresponds to the formulation of a solution.

2) Wicked problems have no stopping rules.

3) **Solutions to wicked problems cannot be true or false, only good or bad.**

4) In solving wicked problems there is no exhaustive list of admissible operations.

5) **For every wicked problem there is always more than one possible explanation, with explanations depending on the Weltanschauung of the designer**.

6) Every wicked problem is a symptom of another, 'higher level,' problem.

7) No formulation and solution of a wicked problem has a definitive test.

8) Solving a wicked problem is a 'one shot' operation, with no room for trial and error.

9) **Every wicked problem is unique**.

10) The wicked problem solver has no right to be wrong—they are fully responsible for their actions."[4]

The biologist Garrett Hardin, also writing from within the scientific paradigm, described these outliers as "NTS problems"—problems with No Technical Solution.[5]

Karl Popper, the Austrian-British philosopher of science, wrote about clock and cloud problems. In his famous essay, "Of Clouds and Clocks," Popper distinguished between systems that are "orderly, predictable, reducible, and mechanistic," and those like clouds and weather that are "non-linear, non-orderly, unpredictable, naturalistic and open to interpretation."[6] While the context of his essay was a case against determinism, his cloud metaphor is prescient

of the territories of complexity, both physical and cultural, that lie beyond the classical conception of problem.

Nobel prize-winning scientist Herbert Simon insightfully placed the problematic condition in situ with his description of designing as "devising courses of action aimed at changing existing situations into preferred ones."[7] Preferred situations that satisficed would be the outcomes of this science of the artificial, preferred outcomes that were, as Rittel pointed out above "not objectively true or false, only good or bad." The Simon description opened up the possibility of a scientific linkage between the true and the good.

The problem with trying to overlay a strict objectivity over the notion of problem in designing is that the concept gets tied up in "**nots**." The problems of designing are **not** universal. They are **not** fundamentally reoccurring in environment—as was claimed in the Pattern Language.[8] They are **not** at home in the idea of a natural science that excludes human consciousness and culture. They are **not** like clocks, and more like clouds. They are **not** just orderly, true, and technical. Everyone does **not** own them the way they do facts. Their outcomes are **not** transferrable. And this is **not** to say that one can't reason on them, just that it is hard **not** to eventually come to the conclusion, as Simon did, that there is *something other and more* going on.

"Awareness," according to Thomas Kuhn in *The Structure of Scientific Revolutions*, "is prerequisite to all acceptable changes of theory."[9] As one and then many become aware that an old model isn't working—that it contains too many anomalies, too many inconsistencies and exceptions—a newer model emerges and is put forward to take its place.

The inertia that is human conviction then has the two fighting it out until the last of the stubbornly dedicated to the old model dies out. This isn't the case here. The scientific, objective and quantitative model of "problem" isn't wrong. It's brilliant for what it's suited for—distilled knowledge—as time has more than proven. It is simply an inadequate model whose metaphors mask the nature of the problems and the kind of situated problem solving inherent in design thinking.

Another Country, Another Metaphor

Q: How many sides does a circle have?
A: Two, an inside and an outside.

Problems in designing, since Simon, are much more accurately and usefully associated with situations,

situational changes, and the filling of the gap of situational difference.

On this view, being situated means being in a place, where "place" is more than an objective space or location.

Place, according to the human geographer Yi-Fu Tuan, is "a center of meaning constructed by experience."[10] Nested in realms of experience, a place is your bed or favorite chair, your home, your community (or tribe), your region, your nation — your world. Place means being embedded in a culture, in a society, in a history, and in a language, with the primary experience of that culture being perceived and conceived from the inside out.

Understanding that inside view necessarily means understanding the people who own such views, and all the ways in which they communicate about them. A literary analogy would be the difference in what we learn between the storied description produced by the internal first person, and the chorus of second person voices from the inside, and the outside perspective of the all-seeing and all-knowing, third person, objective eye. First person stories tell us what people are thinking and feeling — what they care about. Second person portrays how they are sharing their thoughts with one another. Myths, stories, poems, plays, dance, film, songs, rituals, paintings … all open portals that reveal and express dimensions of that inner life. "Art," wrote Paul Klee in his notebooks, "doesn't render the visible, it makes visible."

When one considers the Simon description from the "inside" point of view, the "devising of courses of action" becomes grounded in a different kind of "existing situation" than the taken for granted and well-established research base condition of a scientific problem. The "base-condition" in designing is a unique, socially constructed, culturally complex perception of a problematic situation.

The situational gap inferred by "existing to … preferred" has its own preferred metaphoric meaning in design thinking. It refers to the qualitative difference between an existing and preferred state of *being*, rather than a difference in the quantitative condition of *knowing*. The difference that makes a difference in designing — and is the driver of design thinking — is the social perception of a significant qualitative difference.

Intervention

"Nature, to be commanded, must be obeyed."
— Francis Bacon, *Novum Organum*

It is common to speak of design or designing as an intervention, without thought to its metaphoric bloodline of knowledge as power. Intervention implies one group or system interfering with another — all for the best reasons of course. There have always been heathen and infidels whose beliefs systems or other ways of being in the world need and would clearly benefit from some adjustment, enlightenment, or management from well-intended outsiders.

Intervention as a colonizing metaphor in designing isn't, of course, as disastrous as the kind of foreign intervention that was the invasion of Iraq, where the intervening power "didn't know Shiite from Shinola,"[11] but it is a form of foreign intervention nevertheless. The metaphoric implication of the outsider perspective is that a perceived qualitative difference in a place is not the primary responsibility of the owners of that place. Superior outside knowledge (and power) will be necessary to resolve the situation. The contrasting ideal in designing is a kind of sovereign autopoiesis, where the people of a place have the principle responsibility for taking care of themselves, their evolving culture, and the ecological health and justice of their nested presence in the world.

Inner and Outer Limits

Limits in everyday life are the outer boundaries where things end, such as the end of one's property, a depleted budget, or any number of possible conditions pushed to the extreme where things collapse and fail. We know for a fact that brains will die after a short time if they are deprived of oxygen and that light travels at 186,000 miles/second. We know that the earth can support only so many people — or do we?

That turns out to be more than a simple scientific calculation, and leads to the need to be able to think about the difference between scientific limits as maximums and optimums and the design thinking perspective that focuses on limits as qualitative boundaries and cultural prescriptions.

A maximum world population would be the number of total world food calories that can be produced divided by 500 cal./day, or the agreed upon minimum number of calories/day to sustain life. This maximum population at the edge of starvation, struggling for existence, would of course have little energy to devote to poetry or any other element of human culture. Access to adequate food and water and a carbon controlled, pollution free, and healthy planet are certainly necessary outer limits for human survival, but human flourishing takes place somewhere within those limits, where the controlling

considerations are not about survival but centered in the many and varied cultural conceptions of the good life.

It's something like the difference between the starving Oliver in *Oliver Twist* holding out his bowl and saying, "Please, sir, can I have some more," and enjoying a four-star meal. It's the difference between a statistical optimum and the local meaning of food in a culture. It's the difference between cold calculation and distributive justice.

The colonization about limits in planning and design thinking was the belief that "carrying capacity" questions were fundamentally scientific. Oregon, for example, in formulating its 19 land use laws had originally included, and then later had to drop, the phrase, "not to exceed the carrying capacity of the land," on each of its natural resource goals. The taken for granted meaning of carrying capacity was that of a scientifically determined outer limit. The first order of business was to preserve prime agricultural soils and healthy productive forests.

But carrying capacity refers to whom and which forms of life? Was it destined to preserve the family farm, its rural landscape and a farming way of life? Corporate farming? A local food and farm belt for the locavores? Rye grass seed for the golf courses of Japan? Lambs for Louisiana? Soil capacity for growing food or to hold up buildings? Sub-urbanization of the landscape or a Mumford-like culture of small towns, villages and cities? The un-clear-cut choices between the clear-cut culture of industrial forestry and the need to sequester carbon in NW forests for the world?

The unintended consequence of the term "carrying capacity" was that it reached too far into the realm of politically sensitive relationships between inner and outer limits. Having thus failed to adequately serve its rational planning objectives, it was quietly retired.

Another form of inner limit at work in designing is the locus of imaginative expression and meaning, where the designer's possible choices and preferences are constrained within the world of their work. Helen Vendler, in her NYR article "The Poet Remakes the Poem,"[12] compares four different possible second stanzas Emily Dickens weighed for her poem, "Safe in Their Alabaster Chambers."

"Safe in their Alabaster Chambers –
Untouched by morning
And untouched by noon –
Sleep the meek members of the Resurrection –
Rafter of satin,
And roof of stone."[13]

In Dickinson's first try, she mocks the complacent Christian belief in a personal resurrection with a stanza about how the dead can't feel or hear the sounds of nature. And in a second version, she shifts to a universal time scale, where "Queens and doges, no matter how regal, disappear soundlessly, invisibly, unremarked." The third gets "frostier" with images of the tribes of the Exodus dead in their marble tents, "never to view the promised land." And the fourth portrays death as coldness personified by Northern zones and icicles in their polar caverns.

The imaginative range of such genius might be large, but it is still anchored to the inner limits of meaning in the world under creation, much in the same sense that Pirandello's "Six Characters in Search of an Author" take over and run away with his play.[14]

Satisfice

Satisfice is an ugly word, a cobbling coined by Herbert Simon to account for a kind of problem solving resolution that was clearly different from that of a rational scientific investigation. From a scientific perspective the resolution of a situational difference couldn't be held to or measured by the standard of true or false. The resolution would have to be found that acceptably satisfied the situation. It would have to suffice, compromise, make do, be good enough.

Satisfice carries the implication of not being able to live up to the expectations of factual resolution. But the term is not an unintentional condescension. It just can't help being broadcast from its dominant worldview. Like Crusoe's inner baggage, its origins are carried invisibly and consequentially deposited on the other shore.

Of the two parts to the concept, suffice is the lesser metric. Whether intended or not, suffice carries the inference that people just got tired of designing and decided after a while to settle or give up – or decided that something was good enough – or as one sometimes hears, "good enough for government work." There is just no comparison between this resolution of despond and the thrill at the end of a designerly voyage of innovation, creation, or discovery that ends in some far better than expected, unimagined ending.

The satisfy dimension of the metric sounds universally useful and colonially harmless when its taken for granted meaning is the evaluation of scientific inquiry. Satisfy, here, is a metric of acknowledgement and an accounting of a research process where important research goals are set, methodologically pursued, and then logically and rationally concluded.

As in, "Our equations predicted that there should be a Higgs boson in there somewhere so we pumped up the BEVs, ran some cloud chamber tests, and found it."

In designing, however, where socially constructed goals tend to migrate, and targets belong to an ontological realm of ideals, preferences, and desires, the meaning of satisfy must equally be understood to migrate. Satisfaction must take its place alongside significance and success when taking measure of meaning in experience.[15]

Metaphoric Freedom

Metaphoric hegemony can have very serious consequences, such as the one that reigns today in the storm cloud problem of anthropogenically caused climate change. It now seems fairly certain that our Earth will pass beyond habitable limits if the human world remains mentally colonized by and locked into an older meaning of freedom. Continuing to hold that liberty means unrestrained individual choices and actions is a deadly metaphoric colonization of the present by the past. Climate change, a serious outer limit problem, urgently requires the embracing of an inner limit conception of liberty as a freedom that includes community. Or as Hegel put it, "Freedom is the recognition of necessity."[16]

In his recent column for the New York Times, Roger Cohen[17] elaborated on liberty's community dimension:

> "Liberty, however, requires certain things. Liberalism demands acceptance of our human differences and the ability to mediate them through democratic institutions. It demands acceptance of multiple, perhaps incompatible truths."

Metaphoric hegemony can also take the form of intentional identity theft, complete suppression of liberty, and serious bodily harm, as portrayed in the wartime novel *The Investigation*[18] by Korean author J.M. Lee. The story takes place in Fukouka prison in Japan in the period leading up to and after Pearl Harbor. A young Korean poet, Yun Dong-ju, is jailed for his seditious writings about his occupied Korean home, and is forced by the prison's censor to translate all of his poems into Japanese to supply the evidence that justifies their condemnation and subsequent burning. To complete the domination, the poet is stripped of his Korean name, required to speak only Japanese, and assigned a new Japanese identity. And finally, Dong-ju, now Hiranuma Tochu, and the other Korean prisoners become the subjects of forced medical experiments,

metaphorically masquerading as benevolent nutrient interventions, to hide the research and development of battlefield plasma.

This is an extreme wartime example of the destructive power of imprisoned identity and purposeful metaphoric suppression. Design thinking's hidden and stealthy constraint is much harder to detect, and leaves fewer marks. And because of this, design thinking's integrity and metaphoric freedom languishes sequestered — and its flourishing constrained — behind the walls of a self-deceiving, ontological privileging and its taken for granted metaphors.

Sir Herbert Simon and the other early explorers discovered what they thought was an aberrant island outpost of science, and called it "the science of the artificial." They named it, described it, and settled it like Crusoe — following their own inner compass, from their own point of view. Today we know that what they thought was an island was a new continent of thinking with its own identity, place names, linguistic flora and fauna, and bare root meanings. Here, in the words of the architect Louis Kahn,[19] is a built-environment sample of its cultural taxonomy:

> Room — a room with a particular character
> Building — a society of rooms
> Street — a room of agreement
> City — an assembly of places vested with the care to uphold the sense of a way of life

Kahn, also, was frequently under fire from gate-guarding epistemologists when he would ask, "What does this place want to be?"

Dante believed that heresy was stubbornly holding on to a belief long after it had proven to be mistaken. On this view it would also be a heresy to hold stubbornly to the taken for granted meanings of de-colonized metaphors, fully aware now that their superimposition is an intervention of their thinking world on another.

Metaphoric freedom, for design thinking, lies in the recognition of identity and the respect for its integrity.

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1   The drawing of Robinson Crusoe salvaging goods from his sinking ship is cropped from a panorama covering pages 6 and 7 in *My Journals and Sketchbooks—Robinson Crusoe*, illustrated by Michel Politzer and originally published in 1972 by Editions Joël Cuénot. The first American edition, printed in Great Britain in 1974, is long out-of-print. A two-month copyright permission search through successor publishing houses, Houghton, Mifflin, Harcourt, in New York and Boston, and Andrea Deutsch and the Carlton Publishing Group in London failed to discover the present control of the book's rights. Attempts to contact Michel Politzer directly for permission went unanswered. It is printed here under the fair use doctrine of: one time, non-commercial, not-for-profit, educational use in a university

supported open access journal to help illustrate the concept of de-colonization in an essay about design thinking.

2   C.A. Bowers, *Perspectives on the Ideas of Gregory Bateson, Ecological Intelligence and Educational Reforms* (Eugene, OR: Eco-Justice Press, LLC, 2011).

3   Daniel C. Dennett, *The Intentional Stance* (Cambridge, MA: MIT Press, 1989).

4   Richard Buchanan, "Wicked Problems in Design Thinking," *Design Issues* 8, no. 2 (1992): 16.

5   Garrett Hardin, "The Tragedy of the Commons," *Science* 162, no. 3859 (1968): 1243–48.

6   Hillary S. Webb, "Clock System or Cloud System? Applying Popper's Metaphor to the Study of Human Consciousness," *Paranthropology* 3, no. 4 (2012): 6; Karl Popper, "Of Clouds and Clocks: An Approach to the Problem of Rationality and the Freedom of Man," in *Objective Knowledge: An Evolutionary Approach* (Oxford: Oxford University Press, 1972), 207.

7   Herbert Simon, *The Sciences of the Artificial*, 2nd ed. (Cambridge, MA: MIT Press, 1982), 111.

8   Christopher Alexander et al., *A Pattern Language: Towns, Buildings, Construction* (New York: Oxford University Press, 1977).

9   Thomas S. Kuhn, "The Structure of Scientific Revolutions," in *International Encyclopedia of Unified Science*, vol. 2, no. 2, ed. Otto Neurath, Rudolph Carnap, and Charles Morris (Chicago: University of Chicago Press, 1970), 67.

10   Yi-Fu Tuan, "Place—An Experiential Perspective," *Geographical Review* 65, no. 2 (1975): 152.

11   Dick Cavett, "'Trumpo,' the Unfunny Marx Brother," *New York Times*, April 15, 2016, http://www.nytimes.com/2016/04/16/opinion/trumpo-the-unfunny-marx-brother.html?_r=0.

12   The quotes on qualitative limits and how Emily Dickinson (and poets generally) deal with the boundaries of expressive meaning come from Helen Vendler, "The Poet Remakes the Poem," *The New York Review of Books*, March 10, 2016, accessed August 5, 2016, http://www.nybooks.com/articles/2016/03/10/poet-remakes-poem/.

13   Helen Vendler, *Dickinson: Selected Poems and Commentaries* (Cambridge, MA: The Belknap Press of Harvard University Press, 2010), 38.

14   Luigi Pirandello, *Six Characters in Search of an Author*, trans. Edward Storer (New York: E.P. Dutton, 1922), also available at http://www.eldritchpress.org/lp/six.htm.

15   Jerry Diethelm, "An Essay on Meaning in Design Thinking," last modified July 2012, https://www.academia.edu/1769428/An_Essay_on_Meaning_in_Design_Thinking.

16   This quote by Hegel on freedom is taken from Hardin's "Tragedy of the Commons," an essay on population control that was instrumental in the development of the concept of carrying capacity.

17   Roger Cohen, "The Death of Liberalism," *New York Times*, April 14, 2016, http://www.nytimes.com/2016/04/14/opinion/the-death-of-liberalism.html.

18   Jung-Myung Lee, *The Investigation: A Novel*, trans. Chi-Young Kim (New York: Pegasus Books LLC, 2015).

19   Louis I. Kahn, "The Room, the Street, and Human Agreement," *JA+U Japan Architecture+Urbanism* (January 1973): 2, also available at https://www.japlusu.com/news/room-street-and-human-agreement.