

Paper

On Craft and Design Practice

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Preamble: The Cathedral and the Bazaar

Eric Raymond's seminal essay *The Cathedral and the Bazaar*¹ draws a contrast between two modes of production. The 'cathedral' is founded on the grand vision of a final product, calls for specialized expertise that operates autonomously, involves high cost and sophisticated culture, and depends on patronage of the elite. The 'bazaar' makes no attempt to delineate a final product, does not seek sophistication, achieves integration through an evolutionary process of small increments with each step being of minimal cost, and is a more open model as the lines dividing patron creator and user are extremely thin. Raymond's essay is on computer software, specifically seeking to justify the case for open-source software (where code is publicly visible and owned, and anyone can work on it), as opposed to closed-source software (where code is secret and proprietary, and only an exclusive group of people can work on it). Although many have subsequently misinterpreted this as a proposal for an equitable and transparent democracy, Raymond is clear that his argument is instrumental rather than moral.² Using vindictory statements like 'given enough eyeballs, all bugs are shallow', he posits the hacker culture of open-source as a far more effective and efficient mode for writing software than the closed-door, proprietary, and copyright-protected model that prevails in the corporate world.

Raymond's use of architectural metaphors is telling and provokes speculation on a similar contrast within architectural design. The cutting edge of contemporary architecture is typically associated with firms dominated by talented personalities who own the copyright of a creative output that they specify in detail. In contrast, traditional building and craft operate within a culture of anonymity based on a publicly owned aesthetic idiom that gradually evolves through communal collaboration. Does this contrast between modern architecture's prevalent model of individualistic originality and the anonymous world of traditional craft bear any similarity to the comparison between closed-source and open-source software? In that sense, the metaphor of the cathedral is not wholly applicable, for the medieval cathedral was built over generations by a guild tradition of anonymous master-builder craftsman, and had neither ascription of personal authorship nor did construction execution require prior detailed specification of the design. But the underlying argument offers sufficient incitement to investigate instrumental and other arguments that may show (in the vein of Raymond's essay) that the precedent of the traditional craftsman contains sufficient value to found a critique of the individualistic and radical artist who prevails in today's world.

The license granted to the contemporary artist to create free from the limits of past convention has involved, as identified by Richard Sennett, a radical reorientation from the craftsman's outward turn to community toward the artist's inward turn to a critical and introspective self.³ The artist becomes an independent source of creativity, as opposed to the craftsman's embeddedness within a cultural and geographical network. Creativity moves away from complex systems to isolated systems, and to investigate this further it is necessary to investigate the nature of complexity.

Complexity and Culture

The world of craft shares many similarities with that of open source software:

- The craft is practiced by a community.
- Whoever their creator may be, innovations belong to the community and serve to extend the expressive language of the entire community.

- Every innovative contribution is judged on two counts: the utility it offers to the immediate task at hand, and the extent to which it extends and enriches the language of the community at large.
- Innovation is incremental, building upon what the community has already produced, rather than an impulse that foregrounds extreme originality.
- Judgment on quality is based on peer review, with community development being prioritized over personal glorification.
- The business model is based on the ‘publish the recipe and open a restaurant’ slogan popular in the open source world, rather than being predicated on extricating maximum value from intellectual property.
- Producer and user belong to the same community, blurring the line between utility and aesthetics.

The creative process is inherently multicentered, and does not spring from a dominant creative center. And this works because, as Michael Polanyi defined it, culture can be described as a polycentric challenge.⁴ Lon Fuller, a philosopher of law illustrates Polanyi’s definition of culture as a polycentric problem with the metaphor of a spider’s web: one may be a single strand of the web, but any attempt to change the tension on that strand is never limited to it, and redistributes tension across the entire web. To Fuller, this characteristic of culture means that highly structured processes that centralize decision making, such as legal adjudication, are poorly suited to resolving polycentric problems.⁵ Polycentric problems require polycentric methods.

The presentation will study the nature of complex systems, using the work of Warren Weaver,⁶ Jane Jacobs,⁷ Humberto Maturana and Francesco Varela,⁸ Ralph Stacey,⁹ and Steven Johnson¹⁰ to argue that for a complex and polycentric system such as culture, polycentric models of aesthetic creation, like traditional craft, are required. The individual studio in the pre-modern era may have been personality-centric and under the firm control of a master craftsman. But it developed its *raison d’être* from its embeddedness within a wider cultural context that was anonymous and polycentric. In contrast, the contemporary studio is individualistic and isolated, the threads that bind it with wider aesthetic culture are extremely weak, and it develops its *raison d’être* internally from the creative intentions of the persons who head it. To further analyze the operations of the ethos of traditional craft, it is necessary to examine it in further detail, specifically examining how craft, as an aesthetic tradition, varies from other self-organizing complex frameworks.

Art and Exactitude: Art as a Reflective Measure

If craft varies from other polycentric modes of creation from it being an aesthetic tradition; we need clarity on what the role of art is. In modern times, we tend to view art from the perspective of the hierarchy of needs defined by Abraham Maslow: an essential quest of self-actualization that we are compelled to aspire toward, but one to be tackled only once certain base needs have been successfully managed.¹¹ The popular acceptance of this hierarchy has led to us treating art as a luxury, one that can be indulged in after base needs are met, preserved largely by the rarefied and exclusive worlds of galleries and museums.

In contradiction to this perception which is widely held in relatively affluent urban areas, one finds that the practice of traditional craft is most embedded in those societies whose struggle for survival is far more precarious, such as rural communities and forest tribes. In these cases, art is clearly not a luxury, and is something one must engage with alongside the struggle to meet base physical needs. The reason for this is that innate human reflexivity compels us to make sense of the world we inhabit at the same time as our quest to survive in it. The value of an art form in this communal model is that it offers an exactitude that stands in counterpoint to the messy vicissitudes of everyday life. Preindustrial communities did not delegate an understanding of the universe to specialists such as scientists, and used the exactitude of their art and craft to construct metaphors that represented this universe to make it comprehensible. It was not so much a case of what the symbols meant, and even less so about the intentions of the artist, for the primary value lay in how the community used the craft

to take a measure of who they were. And since this measure had to offer sense to daily life, crafts found their expression in objects of daily use. To live this way was to live everyday life among all the spirits that inhabit the world, including those that were divine or otherwise not tangibly perceivable, for art and craft reified all spirits. This is a far cry from art in contemporary society where it is either distanced from daily life in museums and galleries, or tends to be acquired for superficial reasons such as decoration, investment, status or fashion.

However, if the contemporary artist is isolated by his/her inward turn, this does not mean the craftsman has escaped isolation. Perhaps the craftsman's isolation is involuntary, and therefore more severe than that of the modern artist. Craft as a measure of the world was possible in a preindustrial time where craftsman and community were bound by geographical proximity to relatively intimate circles of recognition whose shared rituals formed the foundation for this communal quest. This is increasingly difficult today in a globalized and mobile population where the craftsman's product is often purchased by distant and unrecognizable individuals for purposes that are decorative rather than existential. Once the link with community is broken, the craftsman gets isolated from the primary source of his/her renewal. One cannot wish this new world away. Moreover, the world of the traditional craftsman was not necessarily an idyll of happiness: these communities tended to be marked by a sense of cyclical time, making justice restitutive rather than egalitarian, and repressive toward any disruptive transgression from tribal mores.¹²

While a case for the effectiveness of polycentric creative modes found in pre-modern craft can be made, one cannot merely seek to revive this tradition. The conditions that allowed it to exist are no longer possible, and it has characteristics that would contradict contemporary ethics that are founded on egalitarianism and rule of law. As the Indian architect, Charles Correa, has argued, to drag the past unchanged into the present involves a literal transfer, and it is only a decadent culture which looks so obsessively at its past. Architecture must be an agent of change. We must avoid transfers, and seek transformations, where we discern the important principles from the past that we must sustain, and nurture, even if they must operate within organizational and existential structures that are radically different from the past.¹³ In this quest, our examination of the value of craft tradition must go beyond the instrumental argument for effectiveness to the more profound realms of the existential and transcendental. For this we must look at the challenge from the perspective of consciousness.

A Participating Consciousness

Human reflexivity makes us unique in the extent to which we go beyond our self-awareness to reflect both on the world and ourselves. In the course of this reflection, we unavoidably change ourselves. This reflexivity also produces an awareness of a world beyond ourselves that seems endowed with its own will, for it behaves in accordance to laws we can discern, making us acutely conscious of the limits of our own subjectivity. This awareness of the limits of our personal scale within an immensely larger world makes us seek what the philosopher Thomas Nagel calls 'perspectival ascent': a compulsion to rise to a perspective beyond that of our limited bodies. Modern scientific temper seeks this through rationality: a viewpoint that would restrict the meaning of truth to what we can objectively know, for an objective viewpoint is free of perspective from a specific point, and is therefore considered superior because of its escape from idiosyncrasy. But to treat this as axiomatic is to commit an inherent philosophical error: while scientific objectivity is extremely useful, to know the world objectively does not necessarily mean that we know it better.¹⁴ Nagel writes:

What really happens in the pursuit of objectivity is that a certain element of oneself, the impersonal or objective self, which can escape from the specific contingencies of one's creaturely point of view, is allowed to predominate. Withdrawing into this element one detaches from the rest and develops an impersonal conception of the world and, so far as possible, of the elements of self from which one has detached. That creates a new problem of integration... One has to be the creature whom one has subjected to detached examination, and one has in one's entirety to live in the world that has been revealed to an extremely distilled faction of oneself.¹⁵

We are aware of our own consciousness, but we see around us a world not only filled with other conscious beings, but also a natural world that is endowed with the consciousness of natural law. The impulse to perspectival ascent compels our personal consciousness to connect with the wider consciousness present in the environment around us. When we attempt to do it with scientific rationality, we fall into the philosophical error that Nagel has identified: we reduce the surrounding universe to a set of inert elements moving and behaving according to mechanistic law, and we have to accept a fractured self, where the intangible dimension of our consciousness, that resists objective description, is forever isolated from the universe we inhabit. We cannot effectively participate in the world relying primarily on intelligence, and must achieve it through a full-bodied consciousness. We need what Morris Berman calls a 'participating consciousness': one that participates in tandem with the wider consciousness that lies beyond our body, intertwined to the point that we cannot effectively separate our own consciousness from that which surrounds us.¹⁶ In the holistic and animistic traditions of pre-modern times this was never a problem, for spiritual belief of the time recognized divine spirit in all aspects of the world, and human desire was aimed at unity with this spirit. The goal was harmony with the world, not to conquer it, or even to understand it perfectly. To a participating consciousness, the world is an enchanted place, full of spirit and agency, like a friend or relative with whom we must be in constant conversation so that our relationship sustains a whole that is greater than the sum of its parts. On this aspect, craft tradition has much to teach us on this.

Craft and Participating Consciousness

The presentation will cover a set of characteristics of traditional craft that make it inherently align with participating consciousness:

- **Embodied Cognition:** For consciousness to detach from its context, a tradition of pure reflection is necessary; but craft, as an inherently embodied practice, cannot escape from participation in many ways:
 - Complete Sensory Cognition: Usage of all the senses together.
 - Validation by the Body: No conclusion can be reached on any issue without being validated by the intuitive judgment of the sensory body.
 - Human Scale: Since judgment is embodied, all aesthetic experience is scaled to relate to the human body.
 - Senses, Proximity and Immersion: Juhani Pallasmaa has pointed out that architecture has privileged vision over the other senses, specifically focused vision which emphasizes the distance between spectator and object. Comparatively, peripheral vision, through which we become aware of our integration within space, receives scant attention.¹⁷ When peripheral vision is combined with the other senses, a far greater sense of proximity and immersion is achieved with the work being crafted.
- **Material Consciousness:** Cognition reaches beyond the body to comprehend the consciousness of the materials that constitute the craft:
 - Focal Awareness: The connection to external material is built through the principle that Michael Polanyi defined as 'focal awareness',¹⁸ where consciousness transcends the sensation of a tool held by the body to focus beyond the body on what the tip of the tool achieves.
 - Bridges to Otherness: Sennett writes about the innate tendency to prehension: the way the body acts in anticipation of sensory contact with its surroundings,¹⁹ and we use our entire body to build sensory bridges to otherness.
 - An Animate Universe: As consciousness builds familiarity with materials, it becomes aware of the innate nature of the material, recognizing life in the universe.
 - Reduced Hesitancy: As mastery develops, hesitancy reduces, sensitizing the body to minute differences. The callus appears to do for the hand what the zoom lens does for the camera, increasing the range of the hierarchy of scales at which creativity can express itself.²⁰

- **Mastery Through Repetition:** Unlike contemporary aesthetics, which valorizes extreme originality above all else, innovation in craft tradition is incremental. This increases its power rather than reducing it:
 - **Acceptance of the World:** Soetsu Yanagi writes that the craftsman ‘accepted the picture of life as it was given to them, with its balance of good and evil under heaven, without question or protest.’²¹ While this mode may have preempted the critical freedom by which we break the habits and limitations of the status quo, what should be acknowledged is that it starts with a recognition of the world, while the modern avant-garde artist’s ethos treats the world as blank canvas rather than as a live contextual field to be respected.
 - **The Power of Subtlety:** A focus on incrementalism develops an orientation toward subtlety, and emotion is best conveyed through subtlety.
 - **Adaptation and Cultural Fit:** Christopher Alexander posits that vernacular architecture achieves such a strong fit with culture and climate because it evolves gradually. Adaptation is incremental, and adjusts only a few variables at a time, unlike modern design, where originality forces us to take on the almost impossible task of simultaneously adjusting practically all the variables involved.²²
 - **Pattern and Nature:** Incremental innovation makes the craftsman sensitive to pattern, which is a way of developing sensitivity to nature, for nature is inherently based on pattern. This is not a Platonic ideal of mathematical perfection, but one that follows broad principle while allowing for localized and idiosyncratic minor variation. Yanagi writes, “Pattern is nature seen in the best light....Via pattern we see nature at its most wondrous. In a sense, an age without good patterns is an age that does not look at nature carefully....A country without pattern is an ugly country, a country that does not care for beauty”²³
 - **Unselfconscious Mastery:** Through learning that is based on the repetition of tasks, the craftsman develops an unselfconscious mastery, where the hand learns how to move with a purpose that possesses neither consciousness nor thought. Yanagi writes how the humility in this orientation creates the ability to harness the power of external grace²⁴
- **Communal Tacit Knowledge:** Michael Polanyi reasons that the more transcendental our knowledge is, the more intangible and tacit it is.²⁵ The craft studio structures itself so that tacit knowledge is not just personal, but also becomes communal:
 - **Authenticity and Dialog:** Charles Taylor proposes that authenticity is something very similar to language: our capacity for it is innate, but unless we engage in conversation, this capacity lies unutilized.²⁶ The social structure of the craft studio is codified toward such dialog.
 - **Codes for Spreading Tacit Knowledge:** Von Krogh, Ichijo and Nonaka study Japanese organizations, which rely greatly on communal tacit knowledge, to propose a four-stage cycle that all organizations can utilize to spread tacit knowledge,²⁷ and this also applies to the craft studio
 - **Light at the End of the Tunnel:** The presence of a master is crucial, for a large portion of the knowledge is intangible, hours of practice are required before expertise is reached, and the apprentice needs to sustain faith to endure through the process. The visible expertise of the master is necessary to sustain this faith by demonstrating the light at the end of the tunnel.
 - **Learning Through Play:** Sennett questions the conventional belief that innate talent is necessary to become a master, and anyone can become a good craftsman for learning in craft is like the way children learn through play, and all children can play well²⁸
 - **Recycling of Autonomy and Expertise:** When an apprentice joins the studio of a master craftsman, it is in the expectation that one day the apprentice will become a master. The anonymous tradition of the craft studio is based on

this continual recycling of autonomy and expertise. This contrasts with the contemporary studio, where autonomy and expertise is privileged within the personage of the creative head(s); and unless a worthy successor is instated as the new head, the autonomy and expertise dissipate once the original head is no longer present

Architectural Practice and the Mythic Imagination

In conclusion, the presentation will posit that the effectiveness of the craft studio was embedded in structures of practice rather than codes of knowledge or individualized genius; and that these structures which recycled autonomy and expertise, connected with external grace, achieved mastery through repetition, and founded themselves on embodied and material consciousness, fostered a culture of practice founded in a mythic imagination. This is illustrated in the analysis of Jean-Francois Lyotard when he analyzes the oral narrative structures of knowledge in traditional societies, showing how myth, as a form that requires retelling, recycles authority and expertise.²⁹ The craft studio is based on this cyclical rhythm of a mythic imagination, where a rhythm of retelling larger truths continually connects the universal and the unique, and makes one feel truly alive. As Joseph Campbell describes it:

*People say that what we're all seeking is a meaning for life. I don't think that's what we're really seeking. I think that what we're seeking is an experience of being alive, so that our life experiences on the purely physical plane will have resonances within our innermost being and reality, so that we actually feel the rapture of being alive. That's what it's all finally about, and that's what these clues help us to find within ourselves....Myths are clues to the spiritual potentialities of the human life.*³⁰

The paper will conclude with some propositions on how we can restructure architectural practice to align with our mythic imagination, using the philosophy of Louis Kahn that the spirit of architecture is eternal, and each individual work of architecture is an attempt to reach that spirit.³¹ This repeated attempt to seek the eternal spirit of architecture is an equivalent to the rhythm of retelling in myth. For this, our mode of validation should be our own embodied experience, for that is the only mode in which we can call on the full range of our consciousness. Theory is not foundational to practice, and is a means of stretching our own consciousness and critiquing it so that we do not fall into the trap of habit. Validation is found in the resonances we identify when our consciousness participates in the wider horizon of other beings and the spirit of the natural universe we inhabit.

To operate in a mode of mythic consciousness is to move beyond the objective or the personal, and admit the energizing presence of mystery in our life. As René Magritte said, 'One cannot speak about mystery; one must be seized by it'.³² In this spirit, we must reject our conventional notion of contemporary design practice as an instrument for the expression of individual genius. We must redefine it as a place where our consciousness participates so that we may be seized by the mystery of architecture, and lay the ground for others to be seized by this mystery. For this, there is more wisdom to be gleaned from traditional craft than from the contemporary studio

¹ Eric S. Raymond, *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary* (Boston: O'Reilly Media, 2008), Kindle Edition, chap. 2

² Eric S. Raymond, email message to author, 20 November 2002.

³ Richard Sennett, *The Craftsman* (London: Allen Lane, 2008), Kindle Edition, chap. 2

⁴ Michael Polanyi, *The Logic of Liberty: Reflections and Rejoinders* (Chicago: University of Chicago Press, 1951)

⁵ Lon Fuller, "The Forms and Limits of Adjudication", *Harvard Law Review*, Vol. 92, No. 2 (Dec., 1978), 353-409

⁶ Warren Weaver, "Science and Complexity", *American Scientist*, Vol. 36 (1948), 536-544

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- ⁹ Ralph D. Stacey, *Strategic Management and Organisational Dynamics: The Challenge of Complexity* (Harlow: Prentice Hall, 2002)
- ¹⁰ Steven Johnson, *Emergence: The Connected Lives of Ants, Brains, Cities, and Software* (London: Penguin Books, 2002)
- ¹¹ Abraham H. Maslow, "A Theory of Human Motivation", *Psychological Review*, Vol. 50, No. 4 (1943), 370-396
- ¹² Robert Redfield, "The Folk Society", *American Journal of Sociology*, Vol. 52, No. 4 (Jan., 1947), 293-308
- ¹³ Charles Correa, *Transfers and Transformations*, Accessed 20 April 2017, <https://archnet.org/authorities/9/publications/7106>
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- ¹⁵ *ibid*, 9
- ¹⁶ Morris Berman, *The Reenchantment of the World* (Ithaca: Cornell University Press, 1981)
- ¹⁷ Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses* (Chichester: John Wiley and Sons, 2007)
- ¹⁸ Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago: University of Chicago Press, 1962), 55
- ¹⁹ Sennett, *The Craftsman*, chap. 5
- ²⁰ *ibid*, chap. 5
- ²¹ Soetsu Yanagi, *The Unknown Craftsman* (Tokyo: Kodansha International, 1989), 104
- ²² Christopher Alexander, *Notes on the Synthesis of Form* (Cambridge: Harvard University Press, 1964)
- ²³ Yanagi, *The Unknown Craftsman*, 115
- ²⁴ *ibid*, 132-133
- ²⁵ Michael Polanyi, "Transcendence and Self-Transcendence", Accessed 8 April 2017, http://echo.iat.sfu.ca/library/polanyi_70_transcendence.pdf
- ²⁶ Charles Taylor, *The Ethics of Authenticity* (Cambridge: Harvard University Press, 1992)
- ²⁷ Georg Von Krogh, Kazuo Ichijo, and Ikujiro Nonaka, *Enabling Knowledge Creation: How to Unlock the Mysteries of Tacit Knowledge and Release the Power of Innovation* (New York: Oxford University Press, 2000)
- ²⁸ Sennett, *The Craftsman*, chap. 10
- ²⁹ Jean-Francois Lyotard, *The Postmodern Condition: A Report on Knowledge*, trans. Geoff Bennington and Brian Massumi (Manchester: Manchester University Press, 1986), 20-23
- ³⁰ Joseph Campbell (with Bill Moyers), *The Power of Myth* (New York: Anchor Books, 1991), Kindle Edition, chap. 1
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- ³² Cited in Eddie Wolfram, "Introduction", in *Margritte*, ed. David Larkin (New York: Ballantine Books, 1972)