
Critique of Design Thinking in Organizations: Strongholds and Shortcomings of the Making Paradigm

Kipum Lee

Keywords

Design thinking
Intervention design
Symbolic capital
Philosophy of design
Systems change
Institutional theory

Received

February 8, 2021

Accepted

October 6, 2021

Kipum Lee

Weatherhead School of Management,
Case Western Reserve University, USA;
University Hospitals Health System, USA
(corresponding author)

kml61@case.edu

Abstract

Despite claims that design has moved beyond making artifacts and products, prevailing theories of design thinking in organizations remain entrenched in the making or *technē* paradigm. Ironically, this serves to maintain the status quo and stifle progress. Two highly visible *technē* models are intervention design, publicized by IDEO, and enterprise design thinking, popularized by IBM. While distinct, they deploy the same strategy: locate the vectors of organizational change in individual agents — in projects (as complex artifacts) or in professionals (as reified resources) — and implicitly argue that constant proximity or direct contact between design actors and non-design actors is necessary to generate systems change. This constant interfacing, a natural outworking of the *technē* paradigm, ultimately limits real transformation — it ignores the importance of social location and symbolic capital in social systems and assumes that human organizations are deficient by default. As a result, the *technē* paradigm resorts to a “surplus by numbers” approach that leads to the excessive proliferation of a suboptimal form of design. For design to flourish in organizations and build better theories, designers need to become more critical of the productive world and critics (in the ameliorative sense of the term) who can reshape the social world.

© 2021 Kipum Lee.

Published by Elsevier B.V. on behalf of Tongji University. This is an open access article published under the CC BY-NC-ND license (<https://creativecommons.org/licenses/by/4.0>).

Peer review under responsibility of Tongji University.

<http://www.journals.elsevier.com/she-ji-the-journal-of-design-economics-and-innovation>
<https://doi.org/10.1016/j.sheji.2021.10.003>

The Violence and Limits of Making

- 1 Alan R. Hevner et al., "Design Science in Information Systems Research," *MIS Quarterly* 28, no. 1 (2004): 75–105, DOI: <https://doi.org/10.2307/25148625>; Wanda J. Orlikowski and C. Suzanne Iacono, "Research Commentary: Desperately Seeking the 'IT' in IT Research — A Call to Theorizing the IT Artifact," *Information Systems Research* 12, no. 2 (2001): 121–34, DOI: <https://doi.org/10.1287/isre.12.2.121.9700>; Izak Benbasat and Robert W. Zmud, "The Identity Crisis within the IS Discipline: Defining and Communicating the Discipline's Core Properties," *MIS Quarterly* 27, no. 2 (2003): 183–94, DOI: <https://doi.org/10.2307/30036527>.
- 2 Eric L. Trist and K. W. Bamforth, "Some Social and Psychological Consequences of the Longwall Method of Coal-Getting: An Examination of the Psychological Situation and Defences of a Work Group in Relation to the Social Structure and Technological Content of the Work System," *Human Relations* 4, no. 1 (1951): 3–38, DOI: <https://doi.org/10.1177/001872675100400101>; see also Enid Mumford, "The Story of Socio-technical Design: Reflections on Its Successes, Failures and Potential," *Information Systems Journal* 16, no. 4 (2006): 317–42, DOI: <https://doi.org/10.1111/j.1365-2575.2006.00221.x>.
- 3 Amy Bernstein, ed., "The Evolution of Design Thinking," *Harvard Business Review* 93, no. 9 (2015): online, available at https://hbr.org/archive-toc/BR1509?cm_sp=Magazine%20Archive--Links--Current%20Issue.
- 4 Jaakko Hintikka, "Plato on Knowing How, Knowing That, and Knowing What," in *Knowledge and the Known: Historical Perspectives on Epistemology* (Dordrecht, NL: Kluwer Academic Publishers, 1974), 31–49.
- 5 Robert Meagher, "Technè," *Perspecta* 24 (1988): 158–64, DOI: <https://doi.org/10.2307/1567132>.
- 6 Sabine Junginger, "Product Development as a Vehicle for Organizational Change," *Design Issues* 24, no. 1 (2008): 26–35, DOI: <https://doi.org/10.1162/desi.2008.24.1.26>.
- 7 *Ibid.*, 32–33.

Both formal designers and nontraditional design practitioners recognize that shaping products or artifacts and social or cultural phenomena are different things. So much so that there are distinctions made in design between "product" and "beyond product." Design is not the only nor the first discipline to acknowledge the import of this difference. For example, the related division between design science, which focuses on the idea of complex systems as artifacts, and behavioral science has been a core topic that touches the central issues of practical relevance and disciplinary identity in information systems.¹ Likewise, distinguishing between the mere technical and the sociotechnical can be traced back to seminal moments in the history of organizational development theory and the human relations movement.² When a publication like the *Harvard Business Review* declares that design is no longer just for products,³ there is an expectation, based on a heavily-trodden constellation of activities established in adjacent fields and canonical management scholarship, that a different kind of design is either needed or must be developing in organizations — one that supplements a purely technical or production-based form of design with a different kind of design concerning the nontechnical and nonproductive.

Yet, instead of cultivating a new or complementary place in design for what might constitute "beyond products" in organizations, there is the persistent tendency to fetishize making as the prevailing mode of knowledge, which often precludes a more balanced account of production and nonproduction. Philosopher Jaakko Hintikka refers to this general inclination to carry making — *technē* in Greek — over into arguments and accounts of forming beyond its traditional purview as the "paradigm of the craftsman," an idea he attributes to Plato.⁴ Robert Meagher, recognizing the deeply engrained centrality of production within the fields of economic planning and management, similarly points to fabricating (making) as a cornerstone of human activity in contemporary society.⁵

So dominating is this recurring making paradigm in human affairs that its centrality to how design is viewed inside organizations should come as no surprise. Often at play is a product-focused design framework that blurs the distinction between "product" and "beyond product." This conflation of production with organization may help extend the design narrative beyond the traditional areas of making, but only up to a point. For example, in her argument for the increasing role product development should play in driving systems change, Sabine Junginger presents the bolder argument that the organization is a "product" in its own right.⁶ Conceptualizing the organization as a human-centered (artificial) product⁷ is an effective way to point out, especially to those resistant to the idea of systems change by design, that design can make a difference in organizations. In the same way that the solar system model gives quick insight into how the atom works, the craftsman model provides an accessible schema — a shorthand — to grasp what is possible through design in organizations. However, this accessibility comes at a price. Like the planetary analogy, it sacrifices accuracy. For those seeking to understand more precisely the inner workings of design in organizations, there is a deeper issue: the counterargument that human

- 8 Russell L. Ackoff, "Towards a System of Systems Concepts," *Management Science* 17, no. 11 (1971): 669–71, DOI: <https://doi.org/10.1287/mnsc.17.11.661>; Gareth Morgan, "Paradigms, Metaphors, and Puzzle Solving in Organization Theory," *Administrative Science Quarterly* 25, no. 4 (1980): 605–22, DOI: <https://doi.org/10.2307/2392283>.
- 9 Robert C. H. Chia and Robin Holt, *Strategy Without Design: The Silent Efficacy of Indirect Action* (New York: Cambridge University Press, 2009), 96–105, DOI: <https://doi.org/10.1017/CBO9780511642234>; Paul J. DiMaggio and Walter W. Powell, "Introduction," in *The New Institutionalism in Organizational Analysis*, ed. Walter W. Powell and Paul J. DiMaggio (Chicago: University of Chicago Press, 1991), 8; Pierre Bourdieu, *Outline of a Theory of Practice*, trans. Richard Nice (New York: Cambridge University Press, 1977), 72–80.
- 10 For a fuller discussion of *technē* and the application of Aristotle's philosophical schema in design, see Kipum Lee, "From Margin to Institution: Design as a Marketplace for Action in Organizations," *Design Issues* 36, no. 4 (2020): 13–18, DOI: https://doi.org/10.1162/desi_a_00610.
- 11 James Wang, "The Importance of Aristotle to Design Thinking," *Design Issues* 29, no. 2 (2013): 6, DOI: https://doi.org/10.1162/DESI_a_00206.
- 12 Meagher, "Technē," 160.
- 13 *Ibid.*, 160.
- 14 Victor Papanek's well-known argument that "designers have become a dangerous breed" and that "design has put murder on a mass production basis" can be attributed to a pure and unchecked making ethos. Victor Papanek, *Design for the Real World* (New York: Pantheon Books, 1971), xxi.
- 15 The history of the term, "human capital," is fraught with a coldness that minimizes people's abilities or a harshness that reduces humans to mere economic statistics. See "'Human Capital': More Than the Sum of Its Parts," Merriam-Webster, Words We're Watching, last modified September 2020, <https://www.merriam-webster.com/words-at-play/human-capital-definition>.
- 16 The idea that shaping culture and social environments is different from shaping inert materials can be traced back to antiquity. Eugene Garver, in a polemic passage, writes, "They [Plato and other ancient thinkers] all go wrong by making the artful nature of politics exclude praxis. The statesman is productive in a way the ethical agent is not, but practical in a way the craftsman is not. True productive activities are imitations, while the statesman's activity is not mimetic. The trouble

organizations or social systems often behave like (natural) organisms,⁸ and that they can form and persist without recourse to conscious design,⁹ makes the idea of the organization as an artificial product problematic.

Taking things to the extreme, James Wang claims quite emphatically that designers see the world and have their being as practitioners solely through the prism of making. This view is in alignment with the traditional definition of *technē*, meaning the kind of distinct knowledge possessed by an expert of a craft, such as a professional designer, who understands the principles underlying the production of an object. Interestingly, Wang's call for a sharp separation between product and "beyond product" stems, not from an interest to pursue an enlarged program of nonproductive design, but from a desire to double down on design as production. Making, suggests Wang, is hardwired in the very nature of design activity and who designers essentially are. If one adopts his argument—or at least his narrow interpretation of Aristotle with regard to design¹⁰—it must be concluded that in situations where designers are operating in ways other than strictly making, they are either acting in ways not in accordance with who they are as designers or, ironically, if they are being true to themselves, not in ways meaningfully different from making since they must be functioning within a framework of production. He writes, "makers—those who work with *technē*—are concerned only with the excellence of making, in contrast with doers—those who work prudentially."¹¹

This relentless, dogmatic bias toward making is concerning for at least two reasons. First, it is troubling given the potential harm a predominantly "maker" approach may have on human organization and experience. Meagher defines *technē* as "the conscious, willful working or reworking of matter until it becomes not only what it was not but also what it was our intention that it should become."¹² Furthermore, when describing the essential principles of *technē*, he writes, "it is conscious, willful, materially violent, and materially productive."¹³ In the case of "making lumber for a house, or logs for a fire, or paper for a book," the external force of "violence" on inert materials is direct. There are, of course, wider issues of ecological design, which lie beyond the scope of this article. Suffice it to say, society has tolerated (even exploited) this form of violence in the name of human consumption and sustenance.

When the making ethos is applied to people and human systems, there can be a kind of violence¹⁴ that results in widespread dehumanization. The terms "human resources" and "human capital" clearly objectify people as physical means of (industrial) value production;¹⁵ human history is replete with examples of groups using violence or force to shape and direct individual and collective interactions toward various productive ends.¹⁶ During periods when technology (*technē*) has dominated human affairs,¹⁷ non-violent social movements have emerged, as has the drive for discourse and the recovery of (and revolt against) certain humanistic arts¹⁸—for example, the pursuit of rhetoric as the "open hand" alternative to the hard, "closed fist" logic of repressive dialectic.¹⁹ Indeed, there is a growing call within management²⁰ and, more recently, design scholarship²¹ to amplify the non-productive, prudential (phronetic), softer means of shaping human

is that people are not inert like poetic materials.... People talk back.... Socrates and the other inventors of imaginary cities act though they were poets ..." Eugene Garver, *Aristotle's Politics: Living Well and Living Together* (Chicago: University of Chicago Press, 2011), 62.

- 17 For a recent example of an emerging counterculture to the maker ethos in Silicon Valley, see Debbie Chachra, "Why I Am Not a Maker," *The Atlantic*, January 23, 2015, <https://www.theatlantic.com/technology/archive/2015/01/why-i-am-not-a-maker/384767/>.
- 18 Richard McKeon, "The Use of Rhetoric in a Technological Age: Architectonic Productive Arts," in *Selected Writings of Richard McKeon*, vol. 2 of *Culture, Education, and the Arts*, ed. Zahava K. McKeon and William G. Swenson (Chicago: University of Chicago Press, 2005), 197–214.
- 19 Pasquale Gagliardi, "Exploring the Aesthetic Side of Organizational Life," in *The Sage Handbook of Organization Studies*, 2nd ed., ed. Stewart R. Clegg et al. (London: Sage, 2006), 704–06; For a discussion of the difference and similarity between logic and dialectic, see Wilbur Samuel Howell, *Logic and Rhetoric in England, 1500–1700* (New York: Princeton University Press, 1956), 15–17.
- 20 Claudius Bachmann, André Habisch, and Claus Dierksmeier, "Practical Wisdom: Management's No Longer Forgotten Virtue," *Journal of Business Ethics* 153, no. 1 (2018): 147–65, DOI: <https://doi.org/10.1007/s10551-016-3417-y>; Haridimos Tsoukas and Stephen Cummings, "Marginalization and Recovery: The Emergence of Aristotelian Themes in Organization Studies," *Organization Studies* 18, no. 4 (1997): 655–83, DOI: <https://doi.org/10.1177/017084069701800405>; John Shotter and Haridimos Tsoukas, "In Search of Phronesis: Leadership and the Art of Judgment," *Academy of Management Learning & Education* 13, no. 2 (2014): 224–43, DOI: <https://doi.org/10.5465/amle.2013.0201>.
- 21 Lee, "From Margin to Institution," 5–19; Ken Friedman, Yongqi Lou, and Jin Ma, "Shè Ji: The Journal of Design, Economics, and Innovation," *She Ji: The Journal of Design, Economics, and Innovation* 1, no. 1 (2015): 1–4, DOI: <https://doi.org/10.1016/j.sheji.2015.09.002>; Chia and Holt, *Strategy without Design*.
- 22 Bachmann et al., "Practical Wisdom," 147.
- 23 For more on the history and distinction between "hard" and "soft" systems thinking, see Peter Checkland, "Soft Systems Methodology: A Thirty Year Retrospective,"

action over the "overly mechanical and physicalistic approach"²² associated with hard social systems.²³

There is a secondary concern. In less damaging ways, the strong *technē* approach to designing human systems comes with its own set of limitations. In organizations like Airbnb, Bang & Olufsen, and Herman Miller, design is visible, felt, and institutionalized. Organizational aesthetics and culture scholars note that there is a meaningful correlation between artifacts, or concrete productions, and the systems that house such artifactual values in their social structures.²⁴ Kimberly Elsbach and Ileana Stigliani's work, based on empirical research, suggests that industries or fields that deal with tangible products seem to be more welcoming of design thinking than domains that do not.²⁵ Indeed, outside of design science—where the idea of design as artifact-making is unabashedly central²⁶—much of the analysis and theorizing of design in organizations has been based on what Elsbach and Stigliani call "design thinking cultures"—an internal culture that already has all the hallmarks of design readiness. If this is the case, as some have pointed out, it is not clear how amplifying design formally inside an organization yields net new, genuine innovations and real transformation.²⁷ For design to be fully recognized as a legitimate agent of systems change, proponents of design must address the practical issue of how it can successfully embed itself and develop inside the other organizations and industries—indeed, the majority of human systems out there—"less suited" to design process and implementation approaches.

In this article, we examine and critique two important design thinking theories that have risen to that very challenge. They are (arguably) two of the most visible models of design in organizations, written about in the *Harvard Business Review*, *WIRED*, *Fortune*, and the *New York Times*, taught at Harvard Business School, and analyzed by Forrester Research. While the merits of these two theories have been widely established, their shortcomings are seldom subject to critical scrutiny.

The first approach is an intervention design model which argues that the work of introducing a "designed artifact" in an organization is also a matter of design. In this case, the focus is designing the package or bundle that surrounds the content of an artifact for organizational (or client) stakeholders' ready consumption. The second approach is an enterprise design thinking model where the argument is that design must expand inside an organization and scale across functions with the aid of skillful expert designers who espouse and embody a codified and transmittable mental model of design.

Despite their differences, both hypotheses are similar: both claim that design is grounded in the idea of making and can "win" in organizations by spreading projects as wrapped artifacts or professionals as reified agents across an enterprise. Though intended to move design beyond products, these models still operate within a dominant theory of design as *technē* with undertones of making at their core. In the remainder of this article, we will examine key distinct features and flaws of the two models and discuss how they are ultimately the same argument with limited ability to advance design in organizations.

Systems Research and Behavioral Science 17, no. S1 (2000): S11–58, DOI: [https://doi.org/10.1002/1099-1743\(200011\)17:1+<::AID-SRES374>3.0.CO;2-O](https://doi.org/10.1002/1099-1743(200011)17:1+<::AID-SRES374>3.0.CO;2-O).

- 24 Edgar H. Schein, *Organizational Culture and Leadership* (San Francisco: Jossey-Bass, 1992); Pasquale Gagliardi, "Artifacts as Pathways and Remains of Organizational Life," in *Symbols and Artifacts: Views of the Corporate Landscape*, ed. Pasquale Gagliardi (New York: Walter de Gruyter, 1990), 3–40; Anat Rafaeli and Michael G. Pratt, "Introduction: Artifacts and Organization: More Than the Tip of the Cultural Iceberg," in *Artifacts and Organizations: Beyond Mere Symbolism*, ed. Anat Rafaeli and Michael G. Pratt (Mahwah, NJ: Lawrence Erlbaum Associates, 2006), 1–5.
- 25 Kimberly D. Elsbach and Ileana Stigliani, "Design Thinking and Organizational Culture: A Review and Framework for Future Research," *Journal of Management* 44, no. 6 (2018): 2288–97, DOI: <https://doi.org/10.1177/0149206317744252>.
- 26 David Jones and Shirley Gregor, "The Anatomy of a Design Theory," *JAIS* 8, no. 5 (May 2007): 312–35, DOI: <https://doi.org/10.17705/1jais.00129>.
- 27 See Natasha Iskander, "Design Thinking Is Fundamentally Conservative and Preserves the Status Quo," *Harvard Business Review*, September 5, 2018, <https://hbr.org/2018/09/design-thinking-is-fundamentally-conservative-and-preserves-the-status-quo>.
-
- 28 Tim Brown and Roger L. Martin, "Design for Action," *Harvard Business Review* 93, no. 9 (2015): 58, available at <https://hbr.org/2015/09/design-for-action>.
- 29 *Ibid.*, 58.
- 30 *Ibid.*, 58, 64.
- 31 Stephen L. Vargo and Robert F. Lusch, "The Four Service Marketing Myths: Remnants of a Goods-Based, Manufacturing Model," *Journal of Service Research* 6, no. 4 (2004): 324–35, DOI: <https://doi.org/10.1177/1094670503262946>.
- 32 Brown and Martin, "Design for Action," 61.

Technē in Intervention Design

The intervention design model draws attention to the more sophisticated “products” that designers are shaping inside organizations, and the role designers play as forerunners, ushers, and champions of novel complex artifacts. This means success heavily hinges on intentionally designing the delivery mechanism of a designed artifact at the points of organizational entry. It is still important for designed artifacts to maintain the highest standard of product integrity and excellence, but as something complex, this self-evident appeal is no longer enough. Like a matryoshka doll or time-release pill, the outer layer of complex products must be designed to properly deliver what is inside. Tim Brown and Roger Martin, proponents of intervention design, write,

“But as the complexity of the design process increases, a new hurdle arises: the acceptance of what we might call ‘the designed artifact’—whether product, user experience, strategy, or complex system—by stakeholders.... In fact, we’d argue that with very complex artifacts, the design of their ‘intervention’—their introduction and integration into the status quo—is even more critical to success than the design of the artifacts themselves.”²⁸

As the authors provide little information about what intervention design actually is, except that it, too, needs to be designed, readers are left to infer that by “design,” they mean some activity similar to the way the designed artifact is conceptualized. They point to a metanarrative of design as making artifacts of a progressively higher order, such as user-interface software and corporate strategy. To Brown and Martin, the path of design’s evolution is one that advances along a relatively linear continuum and the degree of a designed artifact’s complexity gradually evolves from simple to complex. They argue, “This is the classic path of intellectual progress. Each design process is more complicated and sophisticated than the one before it.”²⁹

Surely, given that the design of the artifact’s outer layer may be “even more critical to success than the design of the artifacts themselves,” and considering “design thinking principles have the potential to be even more powerful when applied to managing the intangible challenges involved in getting people to engage with and adopt innovative new ideas and experiences,”³⁰ intervention design is on the complex end of the spectrum. As service marketing scholarship has noted, something can remain grounded in a materialist understanding of the world even when discussing its intangibles.³¹ Indeed, Brown and Martin’s use of the term “complex artifact” includes everything from intangible services to experiences—even human relations.

Intervention design primarily seeks to mitigate the stubborn resistance people have to new things. By default, this casts relevant actors as resistant to and in need of change. Intervention design subtly opens the social aperture inside the organization so that the future of the artifact is not left to chance or others who are less invested in its success. Intervention design begins with introducing design thinking in a targeted, deliberate, and iterative manner to decision makers and stakeholders and reaches its end when it “has gradually won commitment throughout the process of its creation.”³²

- 33 Srikant M. Datar, Amram Migdal, and Paul J. Hamilton, "IBM: Design Thinking," *Harvard Business School Case 121-007* (April 2021, revised June 2021): 2, <https://www.hbs.edu/faculty/Pages/item.aspx?num=60141>.
- 34 Phil Gilbert, "The Loop: A Documentary About IBM's Inspiration Journey to Adopt Design Thinking and Transform Business Outcomes Throughout the Company" (video interview, IBM internal documentary, directed by Matt D'Avella, 2017), 0:15:20–0:15:48, <https://www.invisionapp.com/enterprise/ibm-design-thinking>.
- 35 In late 2014, *WIRED* magazine reported, "No one has been more aggressive in building design into their core capabilities than IBM ... making them by most measures the largest design firm in the world." See Robert Fabricant, "The Rapidly Disappearing Business of Design," *WIRED*, December 29, 2014, <https://www.wired.com/2014/12/disappearing-business-of-design/>. To be clear, design was not just another independent variable in the grand design experiment at IBM. CEO Virginia Rometty said, "design thinking is at the center" of IBM's strategy to transition from a state of steadily declining revenue to a future state where "its new businesses overshadow its legacy products." See Steve Lohr, "IBM's Design-Centered Strategy to Set Free the Squares," *New York Times*, November 14, 2015, <https://www.nytimes.com/2015/11/15/business/ibms-design-centered-strategy-to-set-free-the-squares.html>.
- 36 Gazi Islam, "Recognition, Reification, and Practices of Forgetting: Ethical Implications of Human Resource Management," *Journal of Business Ethics* 111, no. 1 (2012): 40, DOI: <https://doi.org/10.1007/s10551-012-1433-0>.
- 37 The United Nations Human Development program rejects theories of human capital because these models "view human beings primarily as means rather than as ends. They are concerned only with the supply side—with human beings as instruments for furthering commodity production." United Nations Development Program, *Human Development Report 1990* (New York: Oxford University Press, 1990), 11, accessed October 14, 2021, <http://hdr.undp.org/en/reports/global/hdr1990/>.
- 38 Gilbert, *Loop*, 0:04:34–0:05:00.

Technē in Enterprise Design Thinking

The enterprise design thinking model is another theory that has gained considerable traction in the professional world, although there is no single document or manifesto that lays out an explicit argument. IBM's daring embrace of design is the leading exemplar. There are interviews, training materials, reports, a documentary, and a Harvard Business School case study for researchers to examine. Also, some of the biggest newspaper and magazine headlines related to design thinking in recent years have featured this approach. Whereas intervention design is grounded in design project/process as a kind of artifact to be designed, enterprise design thinking involves an injunction: add many designers into organizations to "startup, scale up, and sustain" innovation.

This approach tries to overcompensate for institutional resistance by involving the chief executive (or similar) as a kind of designer, or establishing a strong design advocate from the get-go who has the wherewithal to authorize an army of formal designers. In 2012, with direct aircover from the top, IBM design leaders began to "inject" designers to directly interface with the organization's 400,000 employees. By 2020, "IBM had hired 2,500 professional designers and trained over 250,000 employees in design thinking."³³

Design at IBM focuses on two core elements: training and expansion of individuals with a design mindset. Training involves (re)skilling personnel with professional standards through codified design field guides and a 3-month design boot camp suitable for the conditioning of new hires. Designers and those who have been converted or convinced of design's value then become the delivery mechanism to scale design from a centralized to a distributed mental model. Phil Gilbert, the architect of IBM Design, elaborates on how design is intended to spread using the combination of the cognitive and corporeal:

"It was not only about teaching ... but also to give them [new designers] a backbone of steel, to drop them into the middle of teams, that not only were already in flight, but teams of people that had sometimes decades of experience in a space ... and they weren't necessarily going to take too kindly to a new designer at IBM questioning whether they understand their user."³⁴

Using description and imagery reminiscent of the military and warfare, IBM has rapidly established its own "design industrial complex" and has become the face of enterprise design thinking.³⁵

Many look on IBM's grand design experiment with great interest. However, its subtle language of reification—or "seeing people in 'thing-like' terms, treating their aspects as inert properties,"³⁶ according to Gazi Islam—is troubling, and strongly resonant with human resource theory.³⁷ Gilbert reveals the purpose of enterprise design thinking as primarily a means to generate economic value for IBM:

"The only thing we were going to do was evangelize outcomes delivered to the market that are the result of these [design] practices ... because the business doesn't care about design thinking. The business doesn't care about any concept. A business only cares about market outcomes, and in order to accelerate the outcome, we used these [design] practices."³⁸

- 39 Islam, "Recognition, Reification, and Practices of Forgetting," 43–44.
- 40 Ibid., 41.
- 41 Ibid., 40.
- 42 Evaluating design is no longer just a matter of product integrity or craft assessment when product use, application, and evocation tools and techniques are expanded to the arena of organizations or social systems. In organizations, design's value is ultimately determined and judged by others, many of whom are non-designers. Buchanan calls the work done in this new arena "fourth order design," which is built on Cicero's translative issue that deals with questions of jurisdiction. Richard Buchanan, "Design and the New Rhetoric: Productive Arts in the Philosophy of Culture," *Philosophy and Rhetoric* 34, no. 3 (2001): 198–202, DOI: <https://doi.org/10.1353/par.2001.0012>.
- 43 Donald A. Schön, *The Reflective Practitioner: How Professionals Think in Action* (New York: Basic Books, 1983), 30.
- 44 Ken Friedman, "Three Thousand Years of Designing Business and Organizations," in *Designing Business and Management*, ed. Sabine Junginger and Jürgen Faust (London: Bloomsbury Academic, 2016), 67–80, DOI: <https://doi.org/10.5040/9781474243551.ch-005>.
- 45 Morgan, "Paradigms, Metaphors, and Puzzle Solving."
- 46 Richard Buchanan, "Worlds in the Making: Design, Management, and the Reform of Organizational Culture," *She Ji: The Journal of Design, Economics, and Innovation* 1, no. 1 (2015), DOI: <https://doi.org/10.1016/j.sheji.2015.09.003>.
- 47 The current issues swirling around Big Tech — from the toxicity of Facebook for teenage girls to Google's allegedly human-centered AI products that discriminate against minority ethnic groups — can be understood as a management flaw in organizations that purport to use their product ethos to serve the common good. Also, the accusations toward IDEO's culture of abuse are especially concerning given how publicly they support human-centeredness. See "The Facebook Files: A Wall Street Journal Investigation," *Wall Street Journal* (online), 2021, accessed October 14, 2021, <https://www.wsj.com/articles/the-facebook-files-11631713039>; Rob Copeland and Parmy Olson, "Artificial Intelligence Will Define Google's Future: For Now, It's a Management Challenge," *Wall Street Journal* (online), January 26,

The issue here is not that enterprise design thinking extracts instrumental value from design. In the way enterprise design thinking has been described in reports and by its chief proponents, social actors appear as objectified bundles of capacities. Reducing human beings to bundles of capacities and treating "employees as material or financial resources"³⁹ is alarming given the significance IBM places on its carefully crafted enterprise design language and purporting to champion human-centeredness among its product end-users. Islam further argues, that the "parsing of human behavioral tendencies into discrete and general categories," "which are subsequently tied to economic outcomes based on the estimated economic value of these categories," can create "a recipe for promoting a reified stance toward people."⁴⁰ Furthermore, design as a practice — in the way it is scripted to "force people into thing-like relations with each other"⁴¹ — is depicted as a reductive toolkit that employees carry from one part of the system to another. While the value of design as a means is exalted, design as an end is hardly examined at all.

The Managerialist and Materialist *Technē* Paradigm

Admittedly, in both models, design is met with recalcitrance.⁴² This is to be expected from organizational models of design that are steeped in the positivism of technical rationality, where the idea of control is "embedded not only in men's minds but in the institutions themselves."⁴³ According to Ken Friedman, a salient characteristic of organization design theories rooted in the managerialist tradition is a directive or engineering mindset that perceives and approaches the organization as a machine.⁴⁴ This entails organizational leaders as designers imposing their vision or will with force, be it hard or soft. Scholars, of course, widely acknowledge the idea of "system as machine" as one of the foundational models of modern organizational theory.⁴⁵

Less explored is the managerialist approach in design. Richard Buchanan argues that a unique theory of design also exists within wider management theory and practice.⁴⁶ Just as there is a strong presence of the engineering-based technical ethos within the matrix of management theory (e.g., scientific management, management science), it is plausible to locate design as a form of management in the materialist tradition. There can be a product- or design-minded technical ethos enshrined in the very social structure of organizations, and it can be just as constraining, controlling, and dehumanizing⁴⁷ as its engineering counterparts. Indeed, Henri Mintzberg memorably criticizes the "design school" of strategic management where a top-down model of consciously controlled thought is produced by the chief executive as designer.⁴⁸ In other words, an emergent field of management scholarship recognizes that the designer who gives form to inert materials cannot design in the same way, nor be the same designer in the same sense, when the "material" is social. "Boards don't hit back," says Bruce Lee ... but human obstinance does.

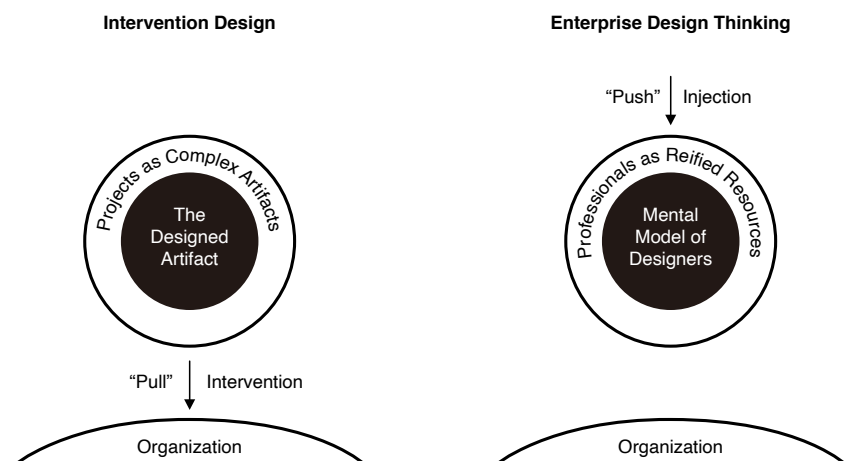
The danger of design by "intervention of projects" and "injection of professionals" is that these approaches are taking a page from the playbook

- 2021, <https://www.wsj.com/articles/artificial-intelligence-will-define-googles-future-for-now-its-a-management-challenge-11611676945>; and Mark Wilson, "Damning Letter Details Culture of Abuse at IDEO, Design Firm behind Apple's First Mouse," *Fast Company* (online), May 27, 2021, <https://www.fastcompany.com/90640907/>.
- 48 Henry Mintzberg, "The Design School: Reconsidering the Basic Premises of Strategic Management," *Strategic Management Journal* 11, no. 3 (1990): 171–95, DOI: <https://doi.org/10.1002/smj.4250110302>.
- 49 Robert W. Witkin, "The Aesthetic Imperative of a Rational-Technical Machinery: A Study in Organizational Control through the Design of Artifacts," in *Symbols and Artifacts: Views of the Corporate Landscape*, ed. Pasquale Gagliardi (New York: Walter de Gruyter, 1990), 325–38.
- 50 Anne M. Witz, Chris Warhurst, and Dennis P. Nickson, "The Labour of Aesthetics and the Aesthetics of Organisation," *Organization* 10, no. 1 (2003): 33–54, DOI: <https://doi.org/10.1177/1350508403010001375>.

of the technical (in the original sense of *technē* as making) paradigm. The will of the designer is intentionally imposed on a substrate of artifacts or agents, respectively. They might not be as explicitly coercive as what might transpire using a purely managerialist approach, but they may still constrain and regulate in indirect ways. For example, organizational sociologist Robert Witkin argues that the aesthetic qualities of organizational artifacts and the organization's material environment can each subtly control and mediate human action, attitudes, and thought.⁴⁹ Other organizational aesthetic scholars describe the use of employees' bodies as embodied materialization or disposition vehicles—forms of hardware, literally—to deliver and promulgate the company's aesthetic "code"—the software.⁵⁰ Organizations do use artifacts and agents as symbols to state and otherwise impute what is appropriate (behavior) and desirable according to organizational values and norms.

Taken together, prevailing theories of design thinking share a common technical logic, differing only in assuming distinct ways to apply opposing "forces" to various actors—non-human as in the case of projects, and human as in the case of professionals—within an organization. Together, this strong making view of design thinking might be called a "*technē* paradigm." One model in the paradigm is *pulling* the designed artifact closer to the organization, anticipating and guiding a designed artifact's first impression and shepherding its arrival upstream. Another is *pushing* humans as resources into any number of situations where design thinking is ostensibly needed (Figure 1). The technical ethos in both approaches understands the vectors of change in an organization to be primarily located in artifacts-as-materials or agents-as-materials. They are independent parts that constitute the organization as a system in their aggregate form. There is an unchallenged belief that if the hearts and minds of individuals in a system are painstakingly convinced or converted one by one, they will ultimately make the right design choices, and, in turn, change the overall system into something more designerly. This is the *technē* paradigm.

Figure 1
The common *technē* logic of intervention design and enterprise design thinking. © 2021 Kipum Lee.



- 51 The economist Friedrich Hayek associates this form of strong individualism — what he calls “false” individualism — with the Cartesian school of thought where the idea of deliberately designing social organizations and the “characteristic attitude of the engineers to social problems” has its philosophical grounding. See Friedrich A. Hayek, *Individualism and Economic Order* (Chicago: University of Chicago Press, 1948), 6–13.
- 52 Irving Wladawsky-Berger, “Intervention Design: Overcoming Resistance to Disruptive Innovation,” *Wall Street Journal* (online), October 2, 2015, <https://www.wsj.com/articles/BL-CIOB-8140>.
- 53 Ann Swidler, “Culture in Action: Symbols and Strategies,” *American Sociological Review* 51, no. 2 (1986): 276, DOI: <https://doi.org/10.2307/2095521>.
- 54 The distinction between disruptive cure and continuous care is made in Henry Mintzberg, *Managing* (San Francisco: Berrett-Koehler Publishers, Inc., 2009), 120.
- 55 Paul Cilliers, *Complexity and Postmodernism: Understanding Complex Systems* (New York: Routledge, 1998), 9–10; Ronald L. Jepperson, “Institutions, Institutional Effects, and Institutionalism,” in *The New Institutionalism in Organizational Analysis*, ed. Walter W. Powell and Paul J. DiMaggio (Chicago: University of Chicago Press, 1991), 143–63.
- 56 Jepperson, “Institutions, Institutional Effects, and Institutionalism”; Thomas J. Fararo and John Skvoretz, “Action and Institution, Network and Function: The Cybernetic Concept of Social Structure,” *Sociological Forum* 1, no. 2 (1986): 219–50, DOI: <https://doi.org/10.1007/BF01115738>.
- 57 Carmine Gallo, *The Apple Experience: Secrets to Building Insanely Great Customer Loyalty* (New York: McGraw-Hill, 2012).
- 58 Simon Sinek, *Start With Why: How Great Leaders Inspire Everyone to Take Action* (New York: Penguin Group, 2009), 3–8, 44–54.
- 59 Chip Heath and Dan Heath, *Made to Stick: Why Some Ideas Survive and Others Die* (New York: Random House, Inc., 2007), 25–62.
- 60 While there is no denying that Apple has a strong making ethos, the organization also illustrates design as “beyond product,” social, and even transcendental. For example, neuroscientists in the United Kingdom found in 2011 that Apple triggers the same areas of the brain that light up during intensely religious experiences. Compare this to a Gothic church that expresses the idea of soaring spirituality. Immanuel Kant calls this an aesthetic idea where an object is not seen as an exemplary instance or a type (*technē*)

There is a deep-seated individualism⁵¹ present in the making ethos of the designer in the organizational context. Thanks to its underlying atomistic framework, the *technē* paradigm requires stakeholders have direct contact with the designer, and relies on interfacing among design and non-design actors to generate local, and, gradually, global changes in the organization. Here is how the *Wall Street Journal* describes the significance of proximity in a *technē* framework: “The concept of *intervention design* is brilliant but even harder to explain unless you’ve personally gone through the experience of trying to introduce a new, disruptive idea, first to your own colleagues, later in the marketplace.”⁵² Unfortunately, if contact with practically every individual in an organization is a prerequisite to convince non-designers that design generates value, then the effort expended by designers seeking to scale design across organizations would have to be nothing short of Herculean.

Both vectors of the *technē* paradigm depend on the concept of the unit act: “the notion that people choose their actions one at a time according to their interests or values.”⁵³ *Technē*-driven actors treat intervention and engagement activities as events that occur one at a time, which perpetuates a notion of design activity as something restricted to one-off projects. Since an intervention is, in many cases, an interruption of the norm or natural flow of matters, change occurs one hard-won scuffle at a time. It is no coincidence that the French word for surgical operation is *intervention*: something that is intermittent, specialized and a radical cure as opposed to continuous and preemptive care.⁵⁴

As an intervention is often needed to “reprogram”⁵⁵ each part of a system that needs to be changed or recalibrated, there is the tendency to reduce change in organizations to a linear relationship. The same can be said of the enterprise design thinking model that approaches change encounter by encounter. Put differently, design thinking meets complexity in organizations with equal if not greater complexity. To explain this phenomenon using the model of algorithmic information theory (where randomness or disorder is defined in terms of incompressibility), it can be said that design thinking tends to generate programs where the output sequence in the form of projects or encounters is as long as the sequence of steps fed into an algorithm. In other words, today’s design thinking addresses a complex system by *repeating* the system; for each part of a system seeking/requiring change, design seems to require an equal number of projects. Rather than trudging along this (seemingly) linear path, design might look instead to systems approaches that “compress the program” and leverage finite resources to produce outsized effects based on forms of patterned reproduction.⁵⁶ For example, Apple, as a system, has led in various industries by design, even when they have not been the market leader. Apple’s compressed programs (“Enriching Lives”⁵⁷ for their retail offering and “Think Different”⁵⁸ as their all-encompassing credo, for example) are not just marketing sound bites, but compact, core ideas⁵⁹ — like mathematical functions — with the power to unify and guide subsequent human action.⁶⁰

While there are certainly several shortcomings in the *technē* paradigm worthy of exploration, two merit some deeper investigation given how

but wholly appreciated as an object that expresses an idea. Interestingly, he draws inspiration from both the natural (the white lily expresses the idea of innocence) and the artificial. Kenneth F. Rogerson, *The Problem of Free Harmony in Kant's Aesthetics* (Albany, NY: State University of New York Press, 2008), 25–40.

- 61 From the German *Geworfenheit*: a having-been-thrown into the world. Michael Wheeler, s.v. "Martin Heidegger," *The Stanford Encyclopedia of Philosophy*, published October 12, 2011, <https://plato.stanford.edu/entries/heidegger/>.
- 62 Karl E. Weick, "Designing for Thrownness," in *Managing as Designing*, ed. Richard J. Boland and Fred Collopy (Stanford, CA: Stanford University Press, 2004), 76.
- 63 *Ibid.*, 77.
- 64 Lee, "From Margin to Institution."

significantly they frame the understanding, conversation, and trajectory of design in human systems. The first is that the unit actors—the artifacts or agents—are considered relatively neutral or of equal valence compared to other sources of agency or influence within their embedded social environment. This understanding does not account for important dimensions of social change: asymmetrical contexts and symbolic capital. Not all opportunities for design in organizations possess the same level of privilege, access, power, and potential to yield meaningful impact. If the design of interventions is more critical than the product artifacts as Brown and Martin argue, then knowing which situations are more or less favorable for design intervention is even more critical. If a successful intervention design is the spoonful of sugar that helps the artifact-as-medicine go down, knowing whether, when, and how to deliver the medicine really matters.

The second important shortcoming is that *technē* thinking draws from the idea of surplus to overcome the assumption that design in any form is always or nearly always deficient by default in organizations. The strong, making-oriented view has a tendency to indiscriminately prioritize quantity over quality of design activities, and may otherwise obscure potential strategies that can accomplish more with less. For there to be any meaningful integration of design inside organizations, where design is seen as something useful to the whole as opposed to isolated unit acts, there must be a kind of design fusion with the entire organizational infrastructure and not merely the discharge of design activities—no matter the quantity—from one person or place to another.

Social Location and Symbolic Capital

A big weakness of the *technē* paradigm is that it does not actively recognize and discuss the importance of the social location and place of design activities in organizations. While the importance of a certain kind of situatedness is recognized—informed by an understanding of project stakeholders, the organizational chart and formal structure, explicit departmental or enterprise strategies—design work is often theorized without reference to the kind of social situatedness the organizational scholar Karl Weick refers to as its *thrownness* (after Martin Heidegger).⁶¹ "In situations such as these, designing unfolds in a world that is already interpreted where people are already acting, where options are constrained, where control is minimal, and where things and options already matter for reasons that are taken-for-granted."⁶² Whereas the first kind of situatedness can be nicely packaged and considered in advance within a scope of work or design brief, the second kind is something felt *in* the situation. An openness to factors such as where and when design might or should occur, which can make or break a project, are often left out of the initial discussion. What's more challenging is that situations that initially look like "a blank slate and a greenfield site"⁶³ almost always sit within a larger organizational field that is already biased and settled with historical decisions and memories.

The very fact of design's marginalization⁶⁴ points to its inability to fully appreciate the different hierarchies and influences that exist within and across organizations. Indeed, there are individuals, departments, and power

- 65 James Davison Hunter, *To Change the World: The Irony, Tragedy and Possibility of Christianity in the Late Modern World* (New York: Oxford University Press, 2010), 36–37.
- 66 There is evidence that enterprise design thinking does appreciate symbolic capital: the case study of design at IBM Security is one example. However, there is still an issue here because it seems that their success came *despite* their formally declared strategy. Whereas their enterprise design strategy is heavily dependent on specific staffing ratios (i.e., going from a ratio of 1 designer for 33 developers “to 1:8 to effectively embed design thinking”), design thinking at IBM Security was a success with only “36 designers across the 9,000-employee division” (1:250). See Datar et al., “IBM,” 2–3, 9.

structures that have already accumulated more symbolic and cultural capital than others by the time design formally engages. The sociologist James Hunter uses concrete and familiar examples to describe how symbolic capital is unevenly distributed across human experience:

“For example, a Ph.D. has more symbolic capital than a car mechanic; a member of the National Academy of Sciences has more symbolic capital than a high school science teacher; the winner of a Nobel Prize in literature has more symbolic capital than a romance novelist ... a Rhodes scholarship carries more symbolic capital than a Rotary Club scholarship, and a BMW has more symbolic capital than a Honda.... *USA Today* may sell more copies of newspapers than the *New York Times*, but it is the *New York Times* that is the newspaper of record in America because it is at the center of cultural production, not the periphery, and its symbolic capital is much higher ... one may be able to get as good an education at Bluefield State College ... as one would at Harvard, but Harvard, as an institution, is at the center and Bluefield State is at the periphery of cultural production. Therefore, someone with a credential from Harvard will find many more opportunities than someone from Bluefield State and will more likely end up in a position of greater influence than the other.”⁶⁵

Life and experience within organizations are no exception—the playing field is rarely level. There are higher ups and lower downs, implicit and explicit lines of decision making and communication, and informal hierarchies that exist as workarounds created by boots on the ground thinkers with jobs to complete. Yet, conventional design practice in organizations (and even more so for design consultants) typically does not provide guidance on how to recognize and navigate the warp and weft of the organization’s social fabric. There may be conversations about “barriers to consider” in the preliminary stages of a project, but the fact that the work has already begun means a decision was made to green light the project in the first place—with or without explicitly considering the issues of social location and symbolic capital. The fact that many design projects ultimately depend on other people and multiple functions to implement particular solutions makes these issues critical. While the *technē* paradigm does recognize the distinction between the designed artifact and how it gets operationalized and actualized, it hardly discerns between the success garnered from an effective intervention/injection versus from something already inherent in the situation and context.⁶⁶

This troubling silence regarding the imbalance of power and symbolic capital in organizational situations is an issue that runs deep. It is a blind spot, something missing in design education, that becomes a handicap as designers go about practicing their profession. George Aye expresses this problem based on personal experience as an educator and professional designer:

“The design industry is changing, and a growing number of designers ... are working on social issues with greater and greater complexity. This change is starting to expose a dormant weakness in design education that’s been lurking for decades. For all the talk about being human-centered, one very human factor often gets overlooked—a basic understanding of how *power* operates in relationships between people. This lack of understanding by design students and design teachers results in wasted funding, poorly prioritized projects, and

- 67 George Aye, "Design Education's Big Gap: Understanding the Role of Power," *Medium.com* (blog), June 2, 2017, <https://medium.com/greater-good-studio/design-educations-big-gap-understanding-the-role-of-power-1ee1756b7f08>. Aye is the designer whose account of a culture of abuse and dehumanization at IDEO, his former employer, resulted in *Fast Company's* coverage of the dark side of design thinking in organizations. See also Wilson, "Damning Letter Details Culture," online.
- 68 The American Marketing Association recognizes that both academics and practitioners remain skeptical of the chief marketing officer's power and influence in organizations. So much so that their 2020 award winning article focused on empirically demonstrating the performance potential of CMOs. Frank Germann, Peter Ebbes, and Rajdeep Grewal, "The Chief Marketing Officer Matters!," *Journal of Marketing* 79, no. 3 (2015): 1–22, DOI: <https://doi.org/10.1509/jm.14.0244>.
- 69 Melissa Dalrymple, Sam Pickover, and Benedict Sheppard, "Are You Asking Enough from Your Design Leaders?," *McKinsey Quarterly* (online), February 19, 2020, <https://www.mckinsey.com/business-functions/mckinsey-design/our-insights/are-you-asking-enough-from-your-design-leaders>.
- 70 Marisol Wong-Villacres et al., "Culture in Action: Unpacking Capacities to Inform Assets-Based Design," in *CHI '20: Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (New York: ACM, 2020), 1–14, DOI: <https://doi.org/10.1145/3313831.3376329>.

broken promises to the very communities that are being served.... Consider this: there's still a huge number of working mid-career designers ... who don't understand the role of power. Like a bolus of ignorance working its way through the system, this gap in understanding may be getting passed on in our classrooms and in our studios."⁶⁷

Many designers hold the belief that design is well suited to tackling wicked problems. But it is pretentious and even dangerous to think design is adequately prepared to confront wicked problems elsewhere, when its own problems—related to issues of social location, power, and politics in the design context—are an accidental part of design education and training, rather than an essential one.

Not only is design traditionally silent on the matter of symbolic capital, it tends to operate within the least privileged sites of cultural influence (i.e., technical production) and absent from the arenas where the greatest influence is exerted on the organization and organizational culture. For example, design is often more closely associated with the softer, lighter side of organizational activity such as marketing and communications, instead of the heavy-hitting domains like finance and operations. This matters. To put it bluntly, the position of chief financial officer comes with more clout than the position of chief marketing officer, despite the best efforts of marketers worldwide.⁶⁸ Because the role of design leadership in many organizations still lacks clarity and is poorly understood by other leaders,⁶⁹ it has more in common with the role of the chief marketing officer. Even though it may be recognized for its popularity and visibility, design activity is currently marginalized—its value accumulates in the lower-status, peripheral areas of symbolic and cultural production.

Needs-Based Design, and Surplus

A significant shortcoming of the *technē* paradigm is that it sees the world primarily through the lens of defect and deficiency. Regarding the world primarily in terms of problems to be solved turns into a weakness, simply because the sheer number of them makes design neither sustainable nor feasible over the long run. For example, if there are fifty service lines or operating units with "design needs" in an organization, there may need to be at least fifty designed artifacts or active projects to stimulate change. This may be a model favored by consultants whose livelihood depends on multiple engagements with a firm, but this is not practical for many organizations.

Underlying the approach is yet another assumption: design is a needs-oriented practice, and there are users whose needs are ultimately best served by superior products and novel technologies.⁷⁰ For design practitioners informed by the *technē* paradigm, people in organizations are plagued with problems they cannot address without outside help. Organizations require needs-based interventions and "here and now" engagements via direct projects to ensure that needs are being met and deficits are being repaired on a constant basis.

It follows that the best way to approach organizational needs and deficits is through a strategy of excess and surplus of design resources. In

- 71 Liz Stinson, "IBM's Got a Plan to Bring Design Thinking to Big Business," *WIRED*, January 21, 2016, <https://www.wired.com/2016/01/ibms-got-a-plan-to-bring-design-thinking-to-big-business/>.
- 72 Benjamin Brown et al., *The Total Economic Impact™ of IBM's Design Thinking Practice: How IBM Drives Client Value and Measurable Outcomes with Its Design Thinking Framework* (Cambridge, MA: Forrester Research Inc., 2018), 7, available at <https://www.ibm.com/design/thinking/static/Enterprise-Design-Thinking-Report-8ab1e9e-1622899654844a5fe1d760ed5.pdf>.
- 73 Lohr, "IBM's Design-Centered Strategy" 2–3, 9.
- 74 Wong-Villacres et al., "Culture in Action."
- 75 Chia and Holt, *Strategy without Design*, 190.
- 76 François Jullien, *Detour and Access: Strategies of Meaning in China and Greece*, trans. Sophie Hawkes (New York: Zone Books, 2000), 47.

approaches that espouse the *technē* paradigm, there is some opposition or status quo that design must overcome through direct confrontation, whether through repeated, one-on-one interventions or an all-at-once, spectacular insertion. In the case of IBM Design, the very definition of design in organizations hinges on the notion of surplus and filling-in. Here is how IBM has conveyed its strategy by design surplus:

"IBM has been working to reinvent itself as a design-led business. In 2012, the computing behemoth employed just one designer for every 80 coders. Today, that ratio stands at 1:20. By the end of 2016, the company hopes to narrow it to 1:15. All-told, the company is investing more than \$100-million in an effort to become a design-centered corporation."⁷¹

There is no denying that IBM's enterprise design thinking involves hawklike attention to adequate staffing and staffing ratios. The strategy to achieving what it calls "organizational penetration of design thinking"⁷² is through strength in numbers. That is not all. The following lines from the *New York Times* reveals the other part of the argument, which entails inculcation via training: "In all, about 8,000 IBM employees so far have had some in-person training in design thinking. It's an impressive number, but it's also only 2 percent of the workforce."⁷³ IBM would eventually get to a 250,000-strong headcount. There is an unstated operating logic here: if there are enough encounters between design actors and organizational actors, and if enough successful transmissions of design thinking occur, then there can be design hegemony.

As noted by a growing body of design scholars, design approaches that focus on stakeholder needs and satisfying them often fall short of producing long-term, sustained impact.⁷⁴ This is precisely the issue that design currently faces in organizations — its ongoing marginalization and inability to grow beyond pockets of important but short-lived initiatives. Rather than working with or leveraging the existing assets or capacities that organizational actors already possess, which would be one way to ensure long-term support and growth of design, the prevailing view insists on focusing on what they lack.

This direct approach of the *technē* view ultimately calls for the active destruction of an opposition: the desired wins out over the undesired.⁷⁵ This may be accomplished through a surplus of resources or ideas expressed in the form of agonistic arguments. François Jullien states it well:

"This figure of confrontation highlights the structure of the antagonistic *thrust*.... Once two lists enumerating the advantages on two sides of an argument have been established like two opposing phalanxes, one settles the question merely 'by saying which list is longer or presents greater advantages.' ... Confrontation and calculation are thus the basis of this conflict of words, and it is always by *surplus* — of arguments presented, not of secret obliqueness — that a victory is won."⁷⁶

Consciously or unconsciously, design operating under this strong making ethos is a quarreling agent in the middle of a culture war. The way to defeat the opposing force or status quo is by persuading others they need design

- 77 Chia and Holt, *Strategy without Design*, 190–91. See also Jullien, *Detour and Access*, 36.
- 78 Pierre Bourdieu, "The Forms of Capital," in *The Routledge Falmer Reader in Sociology of Education*, ed. Stephen Ball (London: Taylor & Francis, 2003), 15.
- 79 *Ibid.*, 15.

through training, programming, and participation in design projects. Ultimately, the *technē* paradigm is held hostage to the belief that there can be a design-driven organization if there are enough captivated design converts.

Designer as Critic of the Social World

It has not been the aim of this article to disparage two of the most visible design thinking models in organizations today. Instead, my hope is to set them free from the entrapments of the making paradigm that keep design on the fringes. Design thinking, left to its own devices, can, paradoxically and unwittingly, "go native" and become swallowed up by the managerialist and materialist establishment it seeks to change. While a departure from "product making" is important, it is not enough to liberate and fully actualize design in organizations; design thinking as "product thinking" lingers at the root level that must be addressed for it has consequences on the development and practice of design.

Consider the opportunity costs when design overemphasizes the maker ethos. Because it is silent with regard to the inegalitarian landscape of the organizational terrain, the overweening emphasis on *technē* leaves designers and managers ill-prepared to successfully navigate through social systems. In turn, they drift at the periphery and miss out on opportunities at the core arenas where their activities would be most impactful. By focusing on short-term needs within isolated pockets of an organization, the *technē* paradigm makes it easier to miss out on long term investment opportunities such as cultivating more sustainable capabilities with available assets and audiences. By stressing a "winning by numbers" strategy, the conventional view promotes an inefficient, risky approach that can leave organizations with the burden of dealing with designers (as whole individuals with their own career aspirations, families, and needs) and design resources when it is still unclear what the best application or assignment of design is. What designers and managers stand to lose by subjugation to a paradigm that actively seeks the destruction of opposition is the ability to be an agent of a non-confrontational and indirect transformation, where the objective is "deconstruction, the gradual reconfiguration and open integration of multiple potential lines of conflict."⁷⁷

Forgoing benefit is not the only consequence of being extensively committed to the *technē* paradigm. It takes laborious effort to maintain, let alone further develop, the prevailing design thinking frameworks inside organizations. The typical maker mindset assumes a world of human organization that is "reduced to a discontinuous series of instantaneous mechanical equilibria between agents who are treated as interchangeable particles."⁷⁸ By assuming a world with perfect equality of opportunity and without inertia, "every moment is perfectly independent of the previous one."⁷⁹ This has drawbacks. Systems without memory have no strategic starting points, no efficiency gains, no force multiplications, no interactions on which to build, and no vital paths. Each part of the system in this world must be conquered through individualized spot treatments where deficiencies are onerously

- 80 Sarah Gibbons, "Design Critiques: Encourage a Positive Culture to Improve Products," *NN/g Nielsen Norman Group* (blog), October 23, 2016, <https://www.nngroup.com/articles/design-critiques/>.
- 81 Lilly Irani, "Design Thinking: Defending Silicon Valley at the Apex of Global Labor Hierarchies," *Catalyst: Feminism, Theory, Technoscience* 4, no. 1 (2018): 1–19, DOI: <https://doi.org/10.28968/cftt.v4i1.29638>.
- 82 John Dewey, *Human Nature and Conduct*, vol. 14 of *The Collected Works of John Dewey* (Carbondale: Southern Illinois University Press, 1983), 19–20.
- 83 Elke Weik, "Understanding Institutional Endurance: The Role of Dynamic Form, Harmony, and Rhythm in Institutions," *Academy of Management Review* 44, no. 2 (2019): 326–31, DOI: <https://doi.org/10.5465/amr.2015.0050>; Jepperson, "Institutions, Institutional Effects, and Institutionalism," 145–46; Lee, "From Margin to Institution."
- 84 The philosopher Max Fisch argues that the essence of philosophy boils down to the ongoing critique, not of abstractions, but of institutions. Max H. Fisch, "The Critic of Institutions," *Proceedings and Addresses of the American Philosophical Association* 29 (1955): 42–56, DOI: <https://doi.org/10.2307/3129391>.
- 85 Dieter Rams, "Omit the Unimportant," *Design Issues* 1, no. 1 (1984): 26, DOI: <https://doi.org/10.2307/1511540>.

identified and needs addressed as standalone fixes—patches on patches. As this is a world without heredity or acquired properties, even if the needs of the collective system are all patched up at one moment in time, the net solution is not sustainable; design must constantly be refreshed throughout the system through arduous labor. There can be no design as a mainstay system capability.

This critique of design thinking in organizations need not end with a negative criticism of the *technē* view. Yes, designers and managers need to question design thinking's underlying assumptions and presuppositions if design is to truly move beyond products. But a criticism of design can also reveal the prospective merits of what design can be in organizations. Criticism here is positive, as in the design studio critique ("crit"), which can be used to encourage a positive culture of honest conversation and improvement.⁸⁰ That potential awakens with the realization that the alternative to making (or the mechanical) is not mystical.⁸¹ Beyond the world of technical artifact, production, and fabrication lies the world of the social. It is a world of accumulated history where everything is not equally possible nor impossible.

This alternative world is concrete and holistic. For there to be transformation in the social, writes John Dewey, "There must be change in objective arrangements and institutions. We must work on the environment not merely on the hearts of men."⁸² It is not through the unit act, nor through the conversion of individual hearts and minds, that change occurs. In this alternative world, the complexity of dealing with one-off deficiencies is resolved by giving form to the generative and rhythmic structures of continuity and recurrence that shape our lives.⁸³ Designers must become builders of enabling, life-giving institutions.

The social world—the world of institutions and human systems—has much to gain from criticism and renewal by design.⁸⁴ In the words of Dieter Rams, "Designers are critics of civilization, technology, and society."⁸⁵ That is, designers are appropriate critics and reshapers of human systems and can do so without spiraling into conceptual abstractions. Let us turn design away from the mechanical and mystical and toward the social and institutional. We set design free from the bonds and violence of *technē* by doing so.

Declaration of Interests

There are no conflicts of interest involved in this article.

References

- Ackoff, Russell L. "Towards a System of Systems Concepts." *Management Science* 17, no. 11 (1971): 661–86. DOI: <https://doi.org/10.1287/mnsc.17.11.661>.
- Aye, George. "Design Education's Big Gap: Understanding the Role of Power." *Medium.com* (blog), June 2, 2017. <https://medium.com/greater-good-studio/design-educations-big-gap-understanding-the-role-of-power-1ee1756b7f08>.
- Bachmann, Claudius, André Habisch, and Claus Dierksmeier. "Practical Wisdom: Management's No Longer Forgotten Virtue." *Journal of Business Ethics* 153, no. 1 (2018): 147–65. DOI: <https://doi.org/10.1007/s10551-016-3417-y>.

- Benbasat, Izak, and Robert W. Zmud. "The Identity Crisis within the IS Discipline: Defining and Communicating the Discipline's Core Properties." *MIS Quarterly* 27, no. 2 (2003): 183–94. DOI: <https://doi.org/10.2307/30036527>.
- Bernstein, Amy, ed. "The Evolution of Design Thinking." *Harvard Business Review* 93, no. 9 (2015): online. https://hbr.org/archive-toc/BR1509?cm_sp=Magazine%20Archive_-_Links_-_Current%20Issue.
- Bourdieu, Pierre. *Outline of a Theory of Practice*. Translated by Richard Nice. New York: Cambridge University Press, 1977.
- Bourdieu, Pierre. "The Forms of Capital." In *The Routledge Falmer Reader in Sociology of Education*, edited by Stephen J. Ball, 241–58. London: Taylor & Francis, 2003.
- Brown, Benjamin. *The Total Economic Impact™ of IBM's Design Thinking Practice: How IBM Drives Client Value and Measurable Outcomes with Its Design Thinking Framework*. Cambridge, MA: Forrester Research Inc., 2018. <https://www.ibm.com/design/thinking/static/Enterprise-Design-Thinking-Report-8ab1e9e1622899654844a5fe1d-760ed5.pdf>.
- Brown, Tim, and Roger L. Martin. "Design for Action." *Harvard Business Review* 93, no. 9 (2015): 56–64. <https://hbr.org/2015/09/design-for-action>.
- Buchanan, Richard. "Design and the New Rhetoric: Productive Arts in the Philosophy of Culture." *Philosophy and Rhetoric* 34, no. 3 (2001): 198–202. DOI: <https://doi.org/10.1353/par.2001.0012>.
- Buchanan, Richard. "Worlds in the Making: Design, Management, and the Reform of Organizational Culture." *She Ji: The Journal of Design, Economics, and Innovation* 1, no. 1 (2015): 5–21. DOI: <https://doi.org/10.1016/j.sheji.2015.09.003>.
- Chachra, Debbie. "Why I Am Not a Maker." *The Atlantic*, January 23, 2015. <https://www.theatlantic.com/technology/archive/2015/01/why-i-am-not-a-maker/384767/>.
- Checkland, Peter. "Soft Systems Methodology: A Thirty Year Retrospective." *Systems Research and Behavioral Science* 17, no. S1 (2000): S11–58. DOI: [https://doi.org/10.1002/1099-1743\(200011\)17:1+<::AID-SRES374>3.0.CO;2-O](https://doi.org/10.1002/1099-1743(200011)17:1+<::AID-SRES374>3.0.CO;2-O).
- Chia, Robert C. H., and Robin Holt. *Strategy Without Design: The Silent Efficacy of Indirect Action*. New York: Cambridge University Press, 2009. DOI: <https://doi.org/10.1017/CBO9780511642234>.
- Cilliers, Paul. *Complexity and Postmodernism: Understanding Complex Systems*. New York: Routledge, 1998.
- Copeland, Rob, and Parmy Olson. "Artificial Intelligence Will Define Google's Future: For Now, It's a Management Challenge." *Wall Street Journal* (online), January 26, 2021. <https://www.wsj.com/articles/artificial-intelligence-will-define-googles-future-for-now-its-a-management-challenge-11611676945>.
- Dalrymple, Melissa, Sam Pickover, and Benedict Sheppard. "Are You Asking Enough from Your Design Leaders?" *McKinsey Quarterly* (online), February 19, 2020. <https://www.mckinsey.com/business-functions/mckinsey-design/our-insights/are-you-asking-enough-from-your-design-leaders>.
- Datar, Srikant M., Amram Migdal, and Paul J. Hamilton. "IBM: Design Thinking." *Harvard Business School Case 121-007* (April 2021, revised June 2021): 1–21. <https://www.hbs.edu/faculty/Pages/item.aspx?num=60141>.
- Dewey, John. *Human Nature and Conduct*. Vol. 14 of *The Collected Works of John Dewey*. Carbondale: Southern Illinois University Press, 1983.
- DiMaggio, Paul J., and Walter W. Powell. "Introduction." In *The New Institutionalism in Organizational Analysis*, edited by Walter W. Powell and Paul J. DiMaggio, 8. Chicago: University of Chicago Press, 1991.
- Elsbach, Kimberly D., and Ileana Stigliani. "Design Thinking and Organizational Culture: A Review and Framework for Future Research." *Journal of Management* 44, no. 6 (2018): 2288–97. DOI: <https://doi.org/10.1177/0149206317744252>.
- Fabricant, Robert. "The Rapidly Disappearing Business of Design." *WIRED*, December 29, 2014. <https://www.wired.com/2014/12/disappearing-business-of-design/>.

- Fararo, Thomas J., and John Skvoretz. "Action and Institution, Network and Function: The Cybernetic Concept of Social Structure." *Sociological Forum* 1, no. 2 (1986): 219–50. DOI: <https://doi.org/10.1007/BF01115738>.
- Fisch, Max H. "The Critic of Institutions." *Proceedings and Addresses of the American Philosophical Association* 29 (1955): 42–56. DOI: <https://doi.org/10.2307/3129391>.
- Friedman, Ken, Yongqi Lou, and Jin Ma. "Shè Ji: The Journal of Design, Economics, and Innovation." *She Ji: The Journal of Design, Economics, and Innovation* 1, no. 1 (2015): 1–4. DOI: <https://doi.org/10.1016/j.sheji.2015.09.002>.
- Friedman, Ken. "Three Thousand Years of Designing Business and Organizations." In *Designing Business and Management*, edited by Sabine Junginger and Jürgen Faust, 67–80. London: Bloomsbury Academic, 2016. DOI: <https://doi.org/10.5040/9781474243551.ch-005>.
- Gagliardi, Pasquale. "Artifacts as Pathways and Remains of Organizational Life." In *Symbols and Artifacts: Views of the Corporate Landscape*, edited by Pasquale Gagliardi, 3–40. New York: Walter de Gruyter, 1990.
- Gagliardi, Pasquale. "Exploring the Aesthetic Side of Organizational Life." In *The Sage Handbook of Organization Studies*, 2nd ed., edited by Stewart R. Clegg, Cynthia Hardy, Tom Lawrence, and Walter R. Nord, 704–06. London: Sage, 2006.
- Gallo, Carmine. *The Apple Experience: Secrets to Building Insanely Great Customer Loyalty*. New York: McGraw-Hill, 2012.
- Garver, Eugene. *Aristotle's Politics: Living Well and Living Together*. Chicago: University of Chicago Press, 2011.
- Germann, Frank, Peter Ebbes, and Rajdeep Grewal. "The Chief Marketing Officer Matters!" *Journal of Marketing* 79, no. 3 (2015): 1–22. DOI: <https://doi.org/10.1509/jm.14.0244>.
- Gibbons, Sarah. "Design Critiques: Encourage a Positive Culture to Improve Products." *NN/g Nielsen Norman Group* (blog), October 23, 2016. <https://www.nngroup.com/articles/design-critiques/>.
- Gilbert, Phil. "The Loop: A Documentary About IBM's Inspiration Journey to Adopt Design Thinking and Transform Business Outcomes Throughout the Company." Video interview, IBM internal documentary. Directed by Matt D'Avella, 2017. <https://www.invisionapp.com/enterprise/ibm-design-thinking>.
- Hayek, Friedrich A. *Individualism and Economic Order*. Chicago: University of Chicago Press, 1948.
- Heath, Chip, and Dan Heath. *Made to Stick: Why Some Ideas Survive and Others Die*. New York: Random House, 2007.
- Hevner, Alan R., Salvatore T. March, Jinsoo Park, and Sudha Ram. "Design Science in Information Systems Research." *MIS Quarterly* 28, no. 1 (2004): 75–105. DOI: <https://doi.org/10.2307/25148625>.
- Hintikka, Jaakko. "Plato on Knowing How, Knowing That, and Knowing What." In *Knowledge and the Known: Historical Perspectives on Epistemology*, 31–49. Dordrecht, NL: Kluwer Academic Publishers, 1974.
- Howell, Wilbur Samuel. *Logic and Rhetoric in England, 1500–1700*. New York: Princeton University Press, 1956.
- Hunter, James Davison. *To Change the World: The Irony, Tragedy and Possibility of Christianity in the Late Modern World*. New York: Oxford University Press, 2010.
- Irani, Lilly. "'Design Thinking': Defending Silicon Valley at the Apex of Global Labor Hierarchies." *Catalyst: Feminism, Theory, Technoscience* 4, no. 1 (2018): 1–19. DOI: <https://doi.org/10.28968/cftt.v4i1.29638>.
- Iskander, Natasha. "Design Thinking Is Fundamentally Conservative and Preserves the Status Quo." *Harvard Business Review*, September 5, 2018. <https://hbr.org/2018/09/design-thinking-is-fundamentally-conservative-and-preserves-the-status-quo>.
- Islam, Gazi. "Recognition, Reification, and Practices of Forgetting: Ethical Implications of Human Resource Management." *Journal of Business Ethics* 111, no. 1 (2012): 37–48. DOI: <https://doi.org/10.1007/s10551-012-1433-0>.

- Jepperson, Ronald L. "Institutions, Institutional Effects, and Institutionalism." In *The New Institutionalism in Organizational Analysis*, edited by Walter W. Powell and Paul J. DiMaggio, 143–63. Chicago: University of Chicago Press, 1991.
- Jones, David, and Shirley Gregor. "The Anatomy of a Design Theory." *J AIS* 8, no. 5 (May 2007): 312–35. DOI: <https://doi.org/10.17705/1jais.00129>.
- Jullien, François. *Detour and Access: Strategies of Meaning in China and Greece*. Translated by Sophie Hawkes. New York: Zone Books, 2000.
- Junginger, Sabine. "Product Development as a Vehicle for Organizational Change." *Design Issues* 24, no. 1 (2008): 26–35. DOI: <https://doi.org/10.1162/desi.2008.24.1.26>.
- Lee, Kipum. "From Margin to Institution: Design as a Marketplace for Action in Organizations." *Design Issues* 36, no. 4 (2020): 5–19. DOI: https://doi.org/10.1162/desi_a_00610.
- Lohr, Steve. "IBM's Design-Centered Strategy to Set Free the Squares." *New York Times*, November 14, 2015. <https://www.nytimes.com/2015/11/15/business/ibms-design-centered-strategy-to-set-free-the-squares.html>.
- McKeon, Richard. "The Use of Rhetoric in a Technological Age: Architectonic Productive Arts." In *Selected Writings of Richard McKeon*. Vol. 2 of *Culture, Education, and the Arts*, edited by Zahava K. McKeon and William G. Swenson, 197–214. Chicago: University of Chicago Press, 2005.
- Meagher, Robert. "Technè." *Perspecta* 24 (1988): 158–64. DOI: <https://doi.org/10.2307/1567132>.
- Mintzberg, Henry. "The Design School: Reconsidering the Basic Premises of Strategic Management." *Strategic Management Journal* 11, no. 3 (1990): 171–95. DOI: <https://doi.org/10.1002/smj.4250110302>.
- Mintzberg, Henry. *Managing*. San Francisco: Berrett-Koehler Publishers, 2009.
- Morgan, Gareth. "Paradigms, Metaphors, and Puzzle Solving in Organization Theory." *Administrative Science Quarterly* 25, no. 4 (1980): 605–22. DOI: <https://doi.org/10.2307/2392283>.
- Mumford, Enid. "The Story of Socio-technical Design: Reflections on Its Successes, Failures and Potential." *Information Systems Journal* 16, no. 4 (2006): 317–42. DOI: <https://doi.org/10.1111/j.1365-2575.2006.00221.x>.
- Orlikowski, Wanda J., and C. Suzanne Iacono. "Research Commentary: Desperately Seeking the 'IT' in IT Research—A Call to Theorizing the IT Artifact." *Information Systems Research* 12, no. 2 (2001): 121–34. DOI: <https://doi.org/10.1287/isre.12.2.121.9700>.
- Papanek, Victor. *Design for the Real World*. New York: Pantheon Books, 1971.
- Rafaeli, Anat, and Michael G. Pratt. "Introduction: Artifacts and Organization: More Than the Tip of the Cultural Iceberg." In *Artifacts and Organizations: Beyond Mere Symbolism*, edited by Anat Rafaeli and Michael G. Pratt, 1–5. Mahwah, NJ: Lawrence Erlbaum Associates, 2006.
- Rams, Dieter. "Omit the Unimportant." *Design Issues* 1, no. 1 (1984): 24–26. DOI: <https://doi.org/10.2307/1511540>.
- Rogerson, Kenneth F. *The Problem of Free Harmony in Kant's Aesthetics*. Albany, NY: State University of New York Press, 2008.
- Schein, Edgar H. *Organizational Culture and Leadership*. San Francisco: Jossey-Bass, 1992.
- Schön, Donald A. *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books, 1983.
- Shotter, John, and Haridimos Tsoukas. "In Search of Phronesis: Leadership and the Art of Judgment." *Academy of Management Learning & Education* 13, no. 2 (2014): 224–43. DOI: <https://doi.org/10.5465/amle.2013.0201>.
- Sinek, Simon. *Start With Why: How Great Leaders Inspire Everyone to Take Action*. New York: Penguin Group, 2009.

- Stinson, Liz. "IBM's Got a Plan to Bring Design Thinking to Big Business." *WIRED*, January 21, 2016. <https://www.wired.com/2016/01/ibms-got-a-plan-to-bring-design-thinking-to-big-business/>.
- Swidler, Ann. "Culture in Action: Symbols and Strategies." *American Sociological Review* 51, no. 2 (1986): 273–86. DOI: <https://doi.org/10.2307/2095521>.
- Trist, Eric L., and K. W. Bamforth. "Some Social and Psychological Consequences of the Longwall Method of Coal-Getting: An Examination of the Psychological Situation and Defences of a Work Group in Relation to the Social Structure and Technological Content of the Work System." *Human Relations* 4, no. 1 (1951): 3–38. DOI: <https://doi.org/10.1177/001872675100400101>.
- Tsoukas, Haridimos, and Stephen Cummings. "Marginalization and Recovery: The Emergence of Aristotelian Themes in Organization Studies." *Organization Studies* 18, no. 4 (1997): 655–83. DOI: <https://doi.org/10.1177/017084069701800405>.
- United Nations Development Program. *Human Development Report 1990*. New York: Oxford University Press, 1990. <http://hdr.undp.org/en/reports/global/hdr1990/>.
- Vargo, Stephen L., and Robert F. Lusch. "The Four Service Marketing Myths: Remnants of a Goods-Based, Manufacturing Model." *Journal of Service Research* 6, no. 4 (2004): 324–35. DOI: <https://doi.org/10.1177/1094670503262946>.
- Wang, James. "The Importance of Aristotle to Design Thinking." *Design Issues* 29, no. 2 (2013): 4–15. DOI: https://doi.org/10.1162/DESI_a_00206.
- Weick, Karl E. "Designing for Thrownness." In *Managing as Designing*, edited by Richard J. Boland and Fred Collopy, 76. Stanford, CA: Stanford University Press, 2004.
- Weik, Elke. "Understanding Institutional Endurance: The Role of Dynamic Form, Harmony, and Rhythm in Institutions." *Academy of Management Review* 44, no. 2 (2019): 326–31. DOI: <https://doi.org/10.5465/amr.2015.0050>.
- Wheeler, Michael, s.v. "Martin Heidegger." *The Stanford Encyclopedia of Philosophy*, published October 12, 2011. <https://plato.stanford.edu/entries/heidegger/>.
- Wilson, Mark. "Damning Letter Details Culture of Abuse at IDEO, Design Firm behind Apple's First Mouse." *Fast Company* (online), May 27, 2021. <https://www.fastcompany.com/90640907/>.
- Witkin, Robert W. "The Aesthetic Imperative of a Rational-Technical Machinery: A Study in Organizational Control through the Design of Artifacts." In *Symbols and Artifacts: Views of the Corporate Landscape*, edited by Pasquale Gagliardi, 325–38. New York: Walter de Gruyter, 1990.
- Witz, Anne M., Chris Warhurst, and Dennis P. Nickson. "The Labour of Aesthetics and the Aesthetics of Organisation." *Organization* 10, no. 1 (2003): 33–54. DOI: <https://doi.org/10.1177/1350508403010001375>.
- Wladawsky-Berger, Irving. "Intervention Design: Overcoming Resistance to Disruptive Innovation." *Wall Street Journal* (online), October 2, 2015. <https://www.wsj.com/articles/BL-CIOB-8140>.
- Wong-Villacres, Marisol, Carl DiSalvo, Neha Kumar, and Betsy Disalvo. "Culture in Action: Unpacking Capacities to Inform Assets-Based Design." In *CHI '20: Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 1–14. New York: ACM, 2020. DOI: <https://doi.org/10.1145/3313831.3376329>.