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"Design Thinking": Defending Silicon Valley at the Apex of Global Labor Hierarchies

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Abstract

This paper examines the emergence of "design thinking" as a form of technical expertise. It demonstrates that "design thinking" articulates a racialized understanding of labor, judgment, and the subject, emerging as a defense of North American design in the face of global competition from Asia. As design workers in Asia begin competing with North American designers, North American design consultancies articulate and stabilize design thinking, I argue, as a way of defending North American design at the apex of global hierarchies of labor and creativity. I take creativity, design, and technology as contested and valorized social categories that emerge out of globally distributed labor processes geared toward developing new products, markets, and vehicles for financial investment.

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Introduction

Science Studies scholars have shown how what counts as "technological" creativity – both in cultural practice and in STS analytics – is shaped by histories of race, colonialism, and gender (Fouché 2006; Philip 2006; Oldenziel 1999). These scholars show how contests over what counts as properly technological or inventive has also been a contest to rearticulate and defend racialized hierarchies. Fouché (2006), for example, shows how patent officials deemed black invention a product of accident or laziness rather than intention and intelligence (p. 647). Oldenziel (1999) shows how North American and European anxieties about white racial superiority shaped what counts as "technology" – bridges and machines, but not textiles, pottery, and mud architecture. The social category "technology" excluded the creative practices deprioritized by industrial-era capitalists and European colonial powers; machines took priority as marks of modernity over both North American agriculturalists' work and the work of weavers in the colonies. I draw on historical and ethnographic research to track the racialized dynamics of labor competition and expertise performance that generated "design thinking" beyond public view. The data and interviews informing this paper are drawn from ethnographic research I conducted at design firms in India but spanning Silicon Valley and European cities for fourteen months between 2009 and 2014.

"Design Thinking" As Expertise

I want to start with the claim that "design thinking" is a form of expertise. Though design and planning theorists had used the term "design thinking" for decades (Dorst 2011), pedagogical programs in design thinking have exploded in the last decade. Students can take courses in "design thinking" — a mix of brainstorming, prototyping, cultural observation, and teamwork skills – at Stanford, Harvard, MIT, University of Virginia, and countless other institutions. Notably, it is not only

engineering schools that have developed courses in design thinking, but also business schools.

"Design thinking" is a term popularized in Palo Alto by the design firm IDEO and Stanford University through forums like *TED*, *BusinessWeek,* and *Harvard Business Review*. In those forums, it stands for a critique of rationalistic, impersonal, and quantitative forms of corporate knowing (see, for example, Euchner 2012). In place of design's emphasis on specifying product form and mechanism, design thinking teaches corporate workers to tell stories about the lives of potential customers and imagine different futures for them. Design thinking also represents an expansion of the meaning of design. Industrial designers and, later, interaction designers, have long given form to everyday objects around us — office furniture, the computer mouse, or the form of the computer laptop are just some of the product forms to which IDEO lays claim.

With the shift from product design to "design thinking," however, elite institutions like Stanford, Harvard, and MIT emphasize an approach to design as market strategy over the craft skills of model making, typography, and mechanism design. In their place, design thinking focuses on the identification of market opportunities and broad product strategy informed by applied ethnographic research and design experiments. Design thinking is the promise that methods — "ideation," prototyping, and iterating — can locate opportunities where there seem to be none. Images of IDEO at work show engineers, marketers, and business people cheerfully organizing Post-it notes with ideas written on them, mining the communicational unconscious activated through their collaboration for "the next big thing." Champions of design thinking train corporate employees, educators, and even government actors to combine their professional understandings of their work with empathy for those whom they seek to sell to, educate, or discipline.

This form of expertise is institutionalized in professional education programs. Design thinking promises to make innovation continuous and replicable. It is encoded in workbooks and guides published by IDEO, as

well as universities. But this form of expertise only emerged in the mid-2000s. Its emergence was as much about global production and labor flows as it was about epistemology.

The View from the Machine Shop: From "Mechanical" to "Mystical"

My relationship to this professional shift was as a practicing software designer in the mid-2000s at a large Silicon Valley tech company. Friends and colleagues had graduated from Stanford with degrees in mechanical engineering, specializing in the design of devices, circuits, and algorithms. They found employment at IDEO but found themselves working more as management consultants than product designers. They described a shift within the global design firm in the mid-2000s: the firm de-emphasized the design of things. Within the company, employees referred to this shift as IDEO 2.0.

Figure 1. Visitors from Chile tour IDEO's machine shops. Photo credit: Carlos Osorio

It was difficult to find IDEO employees who would speak on these matters to an inquiring researcher. To understand why IDEO had shifted from products to corporate strategy, I had to go to the machine shop. John and Rick — these are not their real names — had each spent a

decade lathing, grinding, and 3D printing prototypes for product designers at IDEO. Over that decade, the shop had adapted its role along with new technologies. As industrial designers shifted from sketches to Computer Aided Design, for example, the shop shifted from producing models in foam and metal to 3D printed materials. More than technological change, John and Rick identified shifts in the global competitive landscape with a shift in company priorities toward "design thinking."[1] With these shifts, they explained, the machine shop staff shrank from twenty-six people to only six.

In the 1990s, American companies designed products in the United States and then outsourced the manufacture of those products to somewhere with hospitable laws and cheapened labor — think China (Bina 2012; Enloe 2004:60). Beginning in the early 2000s, John explained, the design order began to shift. Chinese manufacturers began to offer design services for the products they were going to make. "IDEO started to feel the pressure of not being able to charge the rates [for product design] they wanted to charge."

Rick cut in, recounting tales of Chinese business managers touring IDEO's facilities to take notes on how IDEO organized the design process. "Quite frankly," he said, "IDEO got ripped off. But that's what happens when you're successful." I thought of how Silicon Valley heroes Steve Jobs and Bill Gates had toured Xerox PARC and found there a model to appropriate for Windows and Mac windowing operating systems.[1] I said nothing.

IDEO, John explained, was no longer able to command high rates for engineering-oriented projects in the face of competition from Chinese designers. "They started saying, 'okay, now what do we do?' Where was there still opportunity to charge rates? They saw McKinsey and some of those other [management consulting firms] making money…for strategy or report kinds of things."

John described IDEO's shift from specifying manufacturable things — designs — to consulting with executive-level decision makers. Rick cut in to sum it up: "There's been a shift to less mechanical and to more

mystical." John and Rick had left to start their own machine shop that produced rapid prototypes for the Valley's engineers.

What John described as IDEO's shift to the "mystical" was IDEO's shift to "design thinking" as an expanded approach to the specification of market opportunities more than things. They called this service offering "Phase 0" and posed it as a complement to "left-brain" management consulting approaches focused on supply chains, pricing, and firm structure (Edmonson 2013).

Configuring a New Nexus of Labor and Belonging

Globalization policies threatened IDEO's claim on designs by opening them up to competition from Chinese designers. Globalization, more broadly, threatened the ideology that positioned American workers as engines of global, corporate wealth.

The book *A Whole New Mind* by Daniel Pink was published in 2006, around the same time as IDEO was shrinking its machine shops and moving to the mystical. Pink was also the author of *Freelance Nation* and a speechwriter for Vice President Al Gore. 2006 was also a time when public anxieties about outsourcing reached yet another fever pitch in the United States. In the wake of manufacturing outsourcing in the 1970s and 1980s, US policymakers had pointed to in-person service work and "symbolic analyst" work as where Americans could still outcompete other, globally dispersed workers (Reich 1991). The growth of the Internet, however, had opened American workers up to competition in programming and call center work as well. Pink's book *A Whole New Mind* was one example of a book that stepped in to repair the ideological rupture. It argued for a new source of American distinction and economic prowess: the creative industries.

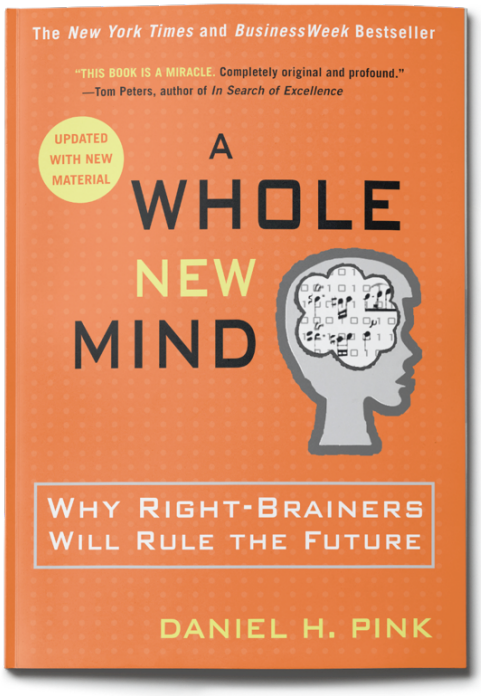

Figure 2. Daniel Pink's book A Whole New Mind: Why Right-Brainers Will Rule the Future depicts a brain containing both binary code and music notes. A blurb by business writer Tom Peters on the cover declares, "This book is a miracle. Completely original and profound."

The book argued that three factors threw up a competitive crisis for American symbolic analysts: "Asia," "abundance," and "automation." I will argue that each of these factors in fact figured Asia as a problematic epistemic site.

In Pink's writings, "Asia" meant a massive, skilled labor pool that could take on "routine" left-brain, logical work — financial analysis, radiology, and computer programming — for lower wages than Americans performing the same work.

"Abundance" meant an oversupply of consumer products, fueled by global factories usually located in Asia. Pink argued that oversupply, rewritten as almost a divine gift of plenty, was not a problem of capitalism. Nowhere were there questions of environmental devastation or the construction of needs. Rather, it was a problem of "curation." Pink called for a new kind of worker who could make emotionally and socially

meaningful products that stood out in a crowded marketplace. If US workers were not manufacturing, they could step in as designers, curators, and those with aesthetic judgment and cultural sense. Implicit in this argument was that workers in the factories elsewhere in the world could not provide such judgment.

Pink also warned that "automation" would eventually replace routine, left brain work — the kind of work Asian workers now took on in the global economy — with machines (Pink 2006).

Claims about automation are frequently claims about kinds of people. Historian of science Simon Schaffer analyzes debates about automata, including the original Mechanical Turk, that people witnessed playing chess in public spaces during the late 1700s (1999). Schaffer argues that debates about bodily, mental, and social mechanisms were debates about free will's proper relation to emerging industrial capitalism (1999, p.126). Enlightenment philosophers understood themselves as those who could stand apart and understand the mechanical principles of nature, bodies, and society. Workers and artisans, in their philosophy, were like machines — devoid of sentiment or formal reason — to be understood and be managed (1999, pp. 126-130). With the industrial revolution, popular culture often represented women and children working in textile mills as machine-like workers, capable of the repetitive action; the yarn spinning device Spinning Jenny famously linked femininity to the machine (1999, p. 21).

This vision of the machine — as in people, as in things — generated new visions of the properly human and less than human. Sometimes, these visions emerge in the anxiety to differentiate the human from the merely mechanical. For example, Gestalt psychologists grappling with emerging models of computational intelligence argued that the human mind could not be a deterministic machine, or even a feedback learning mechanism. They articulated "insight" as the capacity to find solutions not through trial and error, nor mechanical process, but as a perceptual shift (Bates 2007, p.344). Other times, imaginaries of automation illustrate technologists' imaginaries of what it is to live,

interact (Suchman 2006; Helmreich 2000), and labor (Atanasoski & Vora 2015). Observing the same moment in which Pink writes, Lisa Nakamura shows how World of Warcraft machinima-makers produce racist representations of Chinese players as "goldfarmers" indistinguishable from automated bots (2009, p.138). We might also think about the US geek quip, "go away or I will replace you with a small shell script" — once printed on ThinkGeek T-shirts — as symptomatic of how certain programmer subcultures orient toward and wish for distance from the labor of those they find inconvenient.[1]

When Pink cites Asia and automation as threats to proper Americans, then, we might ask how Al Gore's speechwriter defines the proper American in contradistinction to those already conflated others. Like Enlightenment philosophers who must fashion a unique position for themselves by rendering some people and practices mechanical, Pink calls on readers to become "high touch, high concept" workers — workers who create spiritually meaningful, standout products through art, narrative, and design. He builds on decades of management concessions to artistically expressive workers (Boltanski & Chiapello, 2005), and gives a nod to feminist critiques of abstract logic as a masculinist value (Turkle & Papert 1990, pp. 129-132). Pink advised readers seeking to thrive in this brave new world to develop right-brain capabilities that generate value through culture, spirituality, and beauty. Pink outlined "six senses" for "the conceptual age:" the first sense was design. Pink then offered readers advice on how to become more design minded, including: keep a small, good looking notebook to inscribe inspirations, observations, and annoyances; read *i-D*, *Metropolis*, *O, The Oprah Magazine*, and *Real Simple*; follow Karim Rashid's manifesto and resist skill specialization. Pink named design as part of his "conceptual age." This conceptual age rested on the labors of industrial and mass labor arrangements that produced the abundant reproductions of the designers' will (Forty, 1986). The designer's most important habitation would be one of conceptual production, and spiritual and personal integration as a means of value creation.

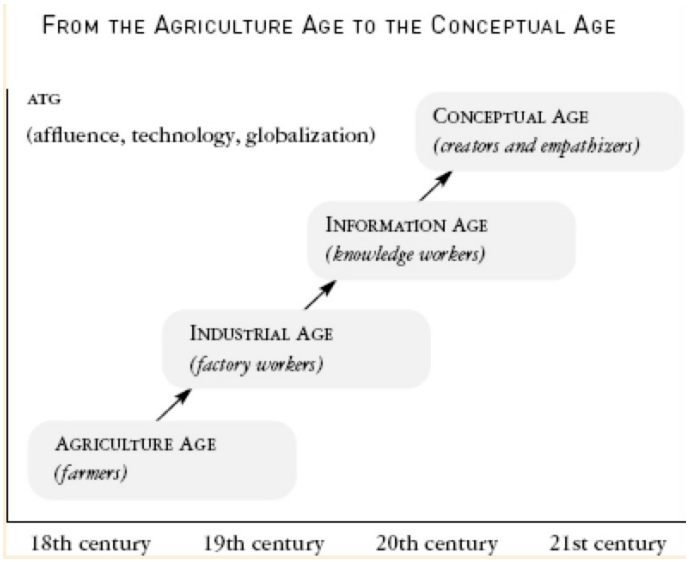

Figure 3. A diagram from Pink's A Whole New Mind depicts temporal eras that begin with the "Agriculture Age" of farmers and move through "Industrial Age (factory workers)", "Information Age (knowledge workers)," and "Conceptual Age (creators and empathizers)." Each era moves higher along an axis that collapses "affluence, technology, and globalization" into a single mathematical identity.

Figure 4. An illustration from Pink's *A Whole New Mind*, complementing the diagram in figure 4, depicts a progression of humans from ape to farmer to welder to manager to artist.

Pink's ideas expressed a broader public understanding of the proper place of the US in a global economic order shaped by intellectual property law, as well as the opening up of markets in Eastern Europe and Asia as sources of labor and as potential consumer bases. American brands and patents — the stuff of the right-brained mind — could

become central to economic success while the science, technology, engineering and mathematics (STEM) jobs celebrated during the space race now seemed more outsourceable.

What is Asia here?

This moment of the "conceptual age" was precisely the moment when US trade negotiators were pulling Asian nation-states into alignment with stronger intellectual property laws. The "conceptual age" glossed the ways that intellectual property regimes regulated the difference between good and bad creativity, and good and bad creators. Historian Kavita Philip shows how liberal intellectual property critics like Lawrence Lessig cast Asians as criminal pirates who "do nothing but take other people's copyrighted content, copy it, and sell it" (Lessig 2004, quoted in Philip 2006, p.212). Lessig is best known for developing creative commons licenses that sustain "remix culture" — creativity that avowedly draws on the labor of others without breaching the law. Pink might have even called this curating. In *Free Culture*, a book published the same year as Pink's, Lessig initially identified piracy with Asia and Eastern Europe — post-socialist regions with different ethics of production and access. Philip notes that *Free Culture* quickly drops reference to Eastern Europe and designates piracy as Asian (2006. p.212). This racialization as uncreative pirates echoed depictions of Chinese "goldfarmers," incapable of play or aesthetic expression, in World of Warcraft (2009). The trade agreements and international divisions of labor in Pink's "conceptual age" cast Asians as mathematical, unaesthetic, rule-oriented producers. Anxious North American publics recast these not as properties of jobs produced by labor processes and IP restrictions, but as properties of racialized people.

Conclusion: Guarding "Creative" Difference in a Global Economy

Figure 5. A T-shirt from Stanford's design journal depicts a torn piece of paper and a black permanent marker, iconic of design and innovation work cultures (Irani et al. 2010). The shirt, in kraft paper brown, declares "Math is easy. Design is hard." Photo credit: Author

It was in this moment — 2005 to be exact — that a group of students at Stanford University launched a design journal called *Ambidextrous*. Many were mechanical engineering and computer science students who wanted to think with both the left brain and the right brain, science and culture. Their publication built community around the then new Stanford d.school, or design school project that teaches design thinking around the world. As a recent graduate of the computer science department, I worked as an editor for the journal. The editor created a T-shirt for the magazine made of brown cloth, signifying a relationship to kraft paper and hastily brainstormed design drawings. On the chest was the image of a torn sheet of white paper, a Sharpie-style marker, and a declaration: "MATH IS EASY. DESIGN IS HARD." The torn paper and Sharpie indicated an ethos of creativity and innovation — fast thought, direct speech, working with the materials that are around. Sharpies and paper are the material culture of schematic drawings, but also brainstorms — the labor of ideas produced at a fast clip, fluent collaboration with other emotionally intelligent team players. This shirt expresses economic anxieties in the face of the global reorganization of

labor. Math, a skill valorized during the Cold War "space race" (Wissehr 2011), no longer promised US dominance. The declaration that "math is easy" naturalizes mathematical skill at precisely the moment when Indian and Chinese workers become available as a labor pool to perform that kind of work in globally networked capitalism. US "model minority" stereotypes about "Asian math genes" (Ng et al. 2016) become rough and ready tools for people making sense of changes in the geographies of production. Instead of asking why capitalist dynamics attempt to make even skilled labor as cheap as possible, the Stanford journal declares design as the valuable form of expertise.[1] I heard this logic echoed in the hallways at Google as designers discussed the threat of outsourcing to India; they concluded that programming could be outsourced. Design, they concluded, was too "creative" to outsource. Only those living on the edge of the future — a temporalization as old as colonial enlightenment and later modernization — could combine emotion, cultural cosmopolitanism, and technology to make good designs (see Suchman 2011).

The T-shirt built on a long history of the shifting lines between modern and backwards, civilized and savage, expert and non-expert. The T-shirt's implicit argument was that design would remain American while math, once the apex of Sputnik-era knowledge hierarchies, could belong to lesser intellects on the sliding scale of humanity.

The argument was not quite right. IDEO's shrinking machine shop and turn to "design thinking" was a response to Chinese workers trained for entrepreneurial adventures and to design products. In China, hierarchies of labor and subjectivities of work were also undergoing transformation as China reoriented toward global capital (Chumley 2017; Lindtner 2017; Irani forthcoming).[2] Feminist science studies work even figures in this story. In Shenzhen, Lindtner argues that entrepreneurs draw on postcolonial and feminist influences as they seek new sources of inspiration and legitimacy to develop emerging technology enterprises (Lindtner 2017, p.299). Similarly, design thinking also selectively draws on feminist interventions into the philosophies of knowledge and technology

in the search for novel markets and value-producing projects.

Hierarchies of labor are a product of global political economies — trade agreements, investments in education, and accumulations of skill and performance that promise the production of value. Skills like "design thinking" are particularly promissory. A "design thinker" promises insights, new markets, and aesthetic judgment, like a divining rod leading to new markets or domains of life ripe for intervention. Those who possess cosmopolitanism — an affable, empathic rapport with consumers and corporate executives alike — can promise value in these worlds. Those whom clients, investors, and immigration interviewers read as the right kind of cosmopolitan, even if not white,[3] read as citizens of Pink's "conceptual age." These are the racialized people whom Mark Zuckerberg defends when he defends the DREAM Act.[4] These are the immigrant startup founders the US Department of State sought to recruit under Obama-era start-up promotion laws. These are the very same racialized start-up founders Steve Bannon, former Trump strategist, said overpopulate executive roles in Silicon Valley. Economic nationalism depends on hierarchies of race and economic practice to mobilize people in the name of whiteness and economy. Bannon shows the iron hand of this logic and IDEO the velvet glove.

In her analysis of biopolitics in the thick of Pink's "conceptual age," historian Kavita Philip asks what the designation of "the pirate" as target of geopolitics and discourse tells us about the overlapping of political economy and constructions of difference. "The conditions of possibility for discourses about technology and authorship," she argues, "are imbricated with emerging global legalities." She traces how the pirate, a racialized figure of technoscientific production, emerges out of the legitimization of particular intellectual property regimes. Those who did the copy work to make Western media companies' products accessible found themselves criminalized as pirates as those firms turned toward emerging markets (Sundaram 2010). "In the process of being produced as global technological citizens," Philip (2006) argued, "we are drawn into authenticating some kinds of equivalences and protecting some kinds of

difference" (p.205). At that moment, advocates of remix culture protected white difference by reconfiguring legalities to sanction curatorial creativities of "remix" while criminalizing the networks of production and circulation that made modernity's media available where access failed to serve the project of profit.

This paper follows Philip's call by asking the function "design thinking" serves discursively and within a global political economy. Legalities of intellectual property are certainly relevant here. So are the ways legalities, state educational investments, and nationalist projects in China produced the larger numbers of industrial designers with which IDEO had to compete. Rather than competing, IDEO protected North American difference. Powerful institutions like Stanford minted and assisted in the circulation of this "mystical," empathetic, creative vision of labor and personhood that requires the work of manufacturing workers, industrial designers, miners, and others to matter, but renders those labors mechanical and "easy." Philip calls for a feminist analysis that traces situated practices of technology through both discourse and political economy. Jennifer Hamilton calls this "the how of whiteness" (2017). The *how* of whiteness here is through the production of new categories of expertise. On its face, design thinking appears as a form of engineering that integrates feminized rationalities of storytelling and empathy. Yet to treat design thinking as a feminist practice ignores the global divisions of labor and distributions of value that make this sensibility of touching, feeling, and making valuable and effective.[5]

Notes

[1] A Harvard Business School case study of IDEO's addition of "Phase 0" service offerings corroborates John and Rick's oral history (2013).
[2] These hierarchies of labor that privilege venture research labors over production labors also structure masculinities and classed subjectivities within China (Lindtner 2017; Chumley 2017). In China, "design" signals not just any aesthetic practices of formgiving and ornament, but one that signals a shift towards global capital and aesthetic communities (Chumley 2017).

[3] Whiteness is not a property of white people, but rather an orientation towards practices and codes racialized as white, and therefore superior (see Fanon 1967).
[4] Academic achievement becomes a racialized marker of belonging; achievement legitimizes the exclusion of some minoritized people on the basis of the achievements of other minoritized people (e.g. "model minorities"). While DREAM act is often thought of in connection with Latin@/Chican@ identities, it formally includes on the basis of education or military service rather than race. Aihwa Ong (1996) points out that in the United States, racialization can masquerade as culturalization that renders some (racialized) practices and habitus more desirable for the nation without formal reference to race as a category (Ong 1996:739).
[5] This analysis of how labor process makes racialized and gendered subjectivities possible owes a debt to ethnic studies scholar Evelyn Nakano Glenn who observed that black and immigrant servants made possible "the woman belle ideal for white middle class women" who employed them (Nakano Glenn, 1985:104; see also Irani 2015).

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Bio

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