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Peter A. Hall

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# True Cost Button-Pushing Re-Writing Industrial Design in America

**Peter A. Hall**

**Peter A. Hall is a senior lecturer  
in Design at the University of  
Texas at Austin.**

Histories of industrial design in the USA, with their flamboyant characters, Depression to postwar boom narratives, and eminently photogenic objects, are so deeply and vividly embedded in other histories of the twentieth century that any attempt to rewrite them faces palpable resistance. This paper is an attempt to encourage a re-writing by examining the pitfalls in predominant histories, which are premised on a model of a “naturally” acquisitive American character-type and a design profession invented to initiate and sustain a consumer culture of instant gratification through strategies of obsolescence.

A helpful starting point in re-examining US design history is provided by one of its pivotal figures, Henry Dreyfuss, who positioned himself, somewhat uncomfortably, between a prevailing model of designer as economic stimulant to a consumer economy and a less popular conception of designer as a professional with an ethical duty. At some point around 1960, Dreyfuss revised his professional credo, eliminating a line stressing the importance of

sales appeal. The edited version placed stronger emphasis on an ergonomic imperative:

When the point of contact between the product and the people becomes a point of friction, then the industrial designer has failed.<sup>1</sup>

In this seemingly simple statement lay clues both to the future history of the profession and its problematic past. In identifying “points of contact” as the proper focus of design, Dreyfuss presciently anticipated the emergence of ergonomics, interaction design and interface design as the concerns that would ultimately displace the “form follows function” credo that characterized the Modernist project. On the other hand, Dreyfuss’s use of the term “friction” to characterize design failure identifies his indebtedness to a model of industrial design practice rooted in advertising and a worldview that cast design as the salve to a stagnant consumer society. The tension in Dreyfuss’s credo embodies, I believe, the beginnings of an alternative history of design in the USA that accounts for the critical capacity of design and designers; one that casts design not as handmaiden to industry or as the bastard child of art history; one that casts design as a practice of decision-making as well as form-making, and of problem-questioning as well as problem-solving. This first requires an examination of dominant histories of design in the USA and their problematic legacy for design practice today.

The conventional view of US design history might best be summarized in Italian critic Andrea Branzi’s account of its impact on postwar design in Italy. At the heart of Branzi’s narrative lies the notion that consumerism is indigenous to the US. “Consumer culture was something entirely foreign to prewar Italy and Europe,” Branzi begins.<sup>2</sup> He continues with a sweeping summary of how design in the US took a different path from European design, “concentrating on products of great figurative strength (instead of structural research) and on great narrations (instead of critique).” Before one can question this account, Branzi swiftly introduces the figure of Raymond Loewy, the quintessential American industrial designer (albeit French by birth.) Loewy is US design history’s poster child, permanently associated with images of streamlined pencil sharpeners, large refrigerators, bulbous trains and the glamorous image of a moustachioed impresario known for the mercenary slogan predicated on planned obsolescence, “never leave well enough alone.”<sup>3</sup>

Branzi then contrasts an elite European view of industry as a “tool for reforming society” with the American consumer ideology of “immediate happiness, not future satisfaction.” The appeal of this ideology in Europe, he writes, was instant:

To a European culture accustomed to measuring itself against history as against a difficult stepmother, America offered

the example of a total absence of history – almost like an absence of original sin.<sup>4</sup>

The persuasiveness of Branzi's argument depends on several assumptions: first, the negation of any pre-twentieth century design history in the US. In fact, Branzi denies the US any history at all; such an argument would be inconceivable were it not for the influence of a Eurocentric art history, which has historically dismissed non-European art produced before the 1900s. Second, Branzi denies the US a design born of structural research, a position that seems to preclude consideration of, say, the Model-T Ford as an example of research into industrial scales of manufacture, assembly and distribution, or even George Nelson's 1945 Storgewall, a product that emerged out of research into the storage limitations of American domestic interiors.<sup>5</sup> Third, Branzi rules out the notion of design based on critique. This last point seems so self-evident in the image of US consumerism and pragmatism that it barely raises an eyebrow. Yet a closer look at a more detailed and authoritative history of design in the USA reveals a more nuanced account.

In *Design in the USA*, historian Jeffrey L Meikle provides evidence that seems to contradict Branzi's sweeping characterization. Among the designers of his pre-twentieth century history are Lambert Hitchcock (1795–1852), a Connecticut-based chairmaker and entrepreneur who, after a cabinetmaker's apprenticeship developed a rationalized system for the production and distribution of durable, inexpensive chairs.<sup>6</sup> Like some progressive version of a modern-day IKEA, Hitchcock utilized a network of peddlers with carts and later boats, to distribute his chairs, flatpacked and disassembled as kits, to ports down the East Coast. His chairs were manufactured using water powered saws and lathes, with local birch, maple and pine, and seats woven from local cat's tail reeds.

Equally at odds with Branzi's account would seem to be the critical trajectory that followed the American sculptor Horatio Greenough's reaction to the Crystal Palace exhibition of 1851 in London. The Crystal Palace is commonly cited as a starting point for a history of Modernism, both for its architecture and for the debate sparked by its displays of bizarre, impractical and mechanically-ornamented goods, which prompted Henry Cole to develop an education system for the applied arts, itself an indirect influence on the German system that influenced the Bauhaus.<sup>7</sup> In a letter to Ralph Waldo Emerson, Greenough accused British manufacturers, on whom the US had depended for imports since colonial days, of overwhelming American citizens with "excremental corruptions" of "gewgaws and extravagance"<sup>8</sup>. In place of excrement, Greenough proposed an organic theory of design, citing the form of the yacht *America*, whose designer had "reduced locomotion to its simplest effects." By equating beauty with

efficiency of form and adaptation to function, rather than historicist imitation, Greenhough established an ethos of simplicity based on “thought, untiring investigation, ceaseless experiment” which later influenced historian John Kouwenhoven’s theory of an American functional vernacular style, itself an influence on architects Frank Lloyd Wright and Louis Sullivan. While celebrating an efficiency of form, Greenhough also allowed for a generative, even elaborate process of design development, one of “ceaseless experiment,” eventually pursued by Lloyd Wright and Sullivan.<sup>9</sup>

The thrifty resourcefulness evident in Hitchcock and Greenhough’s anti-gewgaw critique might be legitimately connected in our new narrative to the American-born phrase of Louis Sullivan, “form ever follows function” – though Sullivan’s dictum suffered the effects of commodification as it became the mantra of Modernism.<sup>10</sup> More intriguing for the purposes of this paper is the critical trajectory, which is so neglected in dominant accounts of design history in the US. It is significant that Greenhough found supporters in Emerson and Henry David Thoreau, who provide a particularly helpful foundation for political dissent in American society. Political theorist Jane Bennett argues for reclaiming Thoreau from the dubious status of back-to-nature icon to that of a gnarly dissident, whose non-conformist project begins with the “arts of the self”. Thoreau’s dissidence, according to Bennett, first identifies mainstream opinion – “the They” – as an object of suspicion, and then marks the times when one’s susceptibility to this opinion becomes the norm:

Thoreau sees American mortals as ... plagued by thoughtlessness, although our lack of deliberateness is more like torpor than whimsy. Our propensity for ill-considered action manifests itself not as flight of fancy but as conformity, not as impulse or contrariness but as obedience to the norm.<sup>11</sup>

Bennett interprets Thoreau’s decision to go to jail for one night, a result of his non-payment of taxes in protest against the Mexican-American war, not as an heroic act of civil disobedience, but as an exercise in a “political art of self formation”.<sup>12</sup> To extend this exercise to industrial design, we can begin to see that the art of self-formation is at the heart of Henry Dreyfuss’s struggle to redefine his credo and strike a balance between the pull of ethics against the pull of his professional duty to remove “friction”. The internal struggle with the voice of conformity similarly underlies the distinction outlined by Tony Fry between ethical design conceived as the “appropriation and application” of ethics, and the more profound project of “the designer becoming ethically constituted.”<sup>13</sup> A new history of design, then, might follow the trajectory of this struggle to give form to complex ideas and negotiate between seemingly conflicting interests (e.g., capital versus human need).

Historians have seized the Depression rather than, say, the industrialization of the US or even Hitchcock's chair-making business as the birthplace of industrial design for the obvious reason that it is a compelling narrative, supported by the news magazines of the time. Even Meikle, having identified the localized practice of Hitchcock and the critiques of Greenhough, assigns them to the shadows of a more persuasive history. He begins his study of the birth of industrial design in the USA, *20th Century Limited*, at the Chicago Century of Progress exposition in 1935.<sup>14</sup> Here, in Meikle's account, the director of an "industrial styling" division at an advertising agency hailed the event as a turning point in American history, marking its move from "an economy of scarcity into an economy of plenty". As businessmen saw it, the Depression was being prolonged by under-consumption, or "economic friction", and the solution to removing friction lay in a new branch of advertising known as industrial design.<sup>15</sup>

Driving this dominant narrative is a pop-Freudian notion of repressed desire, in this case for consumer goods, that requires a form of release to achieve health. Miekle perpetuates this narrative in his book *Design in the USA* by locating the source of consumerism in the constitution of the settler; the alternate view, of colonial self-sufficiency celebrated by Thomas Jefferson, is a "myth", Miekle argues. Dependence on Britain for material goods in earliest years of colonization stimulated the widespread desire for luxury imports, with design mediating between consumption and production. Miekle employs the idea that people "hungered" for material goods and gained status through acquisition:

design addressed a democratic people's desire not only to emulate those of higher social status but also to outshine them.<sup>16</sup>

Such desires, in Miekle and Branzi's account, were not the product of ideology, but indigenous, genetic, natural. Thus framed, the post-Depression, post-World War Two consumer boom is the inevitable relief for "pent-up" desire, with designers the eager masseurs, according to Miekle:

After peace came in August 1945, designers, promoters, and entrepreneurs rushed into schemes for addressing the pent-up material desires of a population that had endured more than 15 years of economic hardship.<sup>17</sup>

Common perceptions of industrial design today might be characterized as the culmination of two historical threads: the *economic* narrative that celebrates the surface work of industrial designers in using strategies of stylistic and technological obsolescence to lift the economy out of the Depression and into a

state of excessive consumption; and the *aesthetic* narrative, which uplifted the act of mass-production form-making to a discourse hitherto reserved for art objects. The aesthetic analysis of everyday objects, of course, has a long pre-industrial history, but in the twentieth century a deliberate effort was made by the Museum of Modern Art in New York (MoMA) to correct the prevailing economic narrative in the US with an interpretation more in keeping with European readings.<sup>18</sup> In MOMA's *Machine Art* exhibit of 1934, architecture director Philip Johnson provocatively placed machine parts, kettles and cake pans on white pedestals in the museum and argued, citing Plato, for forms that were "not beautiful relatively, but always and absolutely".<sup>19</sup> The marriage of absolutist aesthetics with the fruits of capitalist production proved a surprisingly happy union and paved the way for Johnson's rival, Edgar Kaufmann Jr, son of the owner of Kaufmann's department store in Pittsburgh, to stage a series of Good Design exhibitions at the museum between 1950 and 1955.<sup>20</sup> Items were arranged in a department store taxonomy, the perfect accompaniment to the post-war consumer feeding frenzy in America, with Kaufmann emphasizing newness and "eye appeal" in the juries' selection criteria. If the design galleries at MoMA seem today indistinguishable from the design store, it is a testament to the successful commodification of Modernism.

It has since become the common practice of museums, design magazines and design history books to present designed objects – be they kettles, redesigned prescription bottles or theatre posters – in isolation, against "neutral" white backgrounds. The simultaneous acts of decontextualizing and reifying everyday objects, have come to communicate that the objects are important, beautiful or valuable, or any combination of these qualities. It is not difficult to see how this process has effectively stunted design discourse in the popular media. Design removed from context becomes, as Bruno Latour puts it, "matters of fact" rather than "matters of concern".<sup>21</sup>

An alternative narrative, which this journal has made great strides in advancing, emerges in the re-evaluation of objects as "things," (Pasztor)<sup>22</sup> "gatherings," (Heidegger)<sup>23</sup> or "complex assemblies of contradictory issues" as Latour recently argued at a design history conference in the UK.<sup>24</sup> Indeed, Latour finds the entire visual toolkit of design to privilege objects over assemblies:

In its long history, design practice has done a marvellous job of inventing the practical skills for drawing objects [...] But what has always been missing from those marvellous drawings (designs in the literal sense) is an impression of the controversies and the many contradicting stake holders that are born within these. In other words, *you* in design as well as *we* in science and technology studies may insist that objects are always assemblies, "gatherings" in Heidegger's meaning of the word, or things and *Dinge*, and yet, four hundred years

after the invention of perspective drawing, three hundred years after projective geometry, fifty years after the development of CAD computer screens, we are still utterly unable to draw together, to simulate, to materialize, to approximate, to fully model to scale, what a thing in all of its complexity, is.<sup>25</sup>

Latour's challenge, laid forth in the same address, is for designers to find a "means to draw *things* together – gods, non humans and mortals included."<sup>26</sup> As Latour has argued, the toolkit of the anthropologist already provides a system for understanding our own culture and history without falling into the pitfalls that separate science and politics into separate tracks.<sup>27</sup> A revised narrative of US design history could similarly be stocked with characters who saw it as their mission to draw things together.

One obvious practitioner to include in this revised narrative of American design would be Buckminster Fuller, who as early as the 1920s took the view that the earth was a closed system of finite resources, and the job of the designer was to reallocate those resources. Fuller's Dymaxion projection of the earth, made of 14 segments that could be rearranged to privilege a variety of views of the earth, minimizing distortion, also indicates the importance of information visualization to systems-based design.<sup>28</sup>

The increasing need for a third, thing-based narrative, which we shall call a *systems* narrative, is quite simply illustrated by the inadequacy of the aesthetic and economic accounts of contemporary design as "problem-solving".<sup>29</sup> The aesthetic account, when, for example applied to the simple design icon of the iPod, proves hopelessly reductive. Design publications and associations persistently attempt to uphold appreciation of the material form and craftsmanship of the object as paramount, while paying (repeated) homage to Apple's small in-house team of industrial designers, and reproducing one of the standard 'beauty shots' of the decontextualized device that are now conveniently available in high resolution on Apple's website. Yet to apply the economic narrative to the same product leaves us with a gloomier but no less incomplete version of design history, finding the iPod a present-day version of a Loewy refrigerator, fabricated in finishes seemingly designed to scratch, break and lose their shine within months of purchase, and filled with a hard drive and battery technology designed to fail or be outdated within a few months more.

The systems narrative, however, extends our understanding of the act of design beyond the physical form of the product to the design of the user interface, the interface of Apple's iTunes system and further back to the decisions that led to its development. John Shiga's account of the design of the iPod, in which he uses the Actor Network Theory concept of "translation," locates decision-making all along the chain of development:



A heterogeneous array of elements – technical artifacts, notions of what sort of society would need or support the production of portable MP3 players, the attributes of the imagined consumers that would be interested in these artifacts, and so forth – were deployed alongside principles of psychoacoustics and the behavior of different kinds of digital memory in constructing the grids of certainty that frame research problems.<sup>30</sup>

Granted, the kind of close empirical analysis provided by Shiga does not do much to celebrate the role of the designer. Indeed, what emerges is a fairly dark picture of how we have ended up with an obligatory passage point for digital media, encouraging users to buy, rather than rent, entertainment, at the click of a button, using a product with a two-year lifespan. The iPod also represents the end result of a series of negotiations between industry players, engineers, materials and technologies, which included decisions about ways of compressing music by increasing noise (a psycho-acoustic model of hearing), and how to ensure copyright control.<sup>31</sup>

By the same token, however, a narrative arises of how design, and those who practice it (engineers, marketing executives, user interface designers, programmers and industrial designers) has become an immensely powerful force in the shaping of society. If we are to consider, after Latour, that technology is “society made durable”<sup>32</sup> then it becomes possible to imagine a re-reading of design history that examines the full extent of design’s power.

Let us imagine, for a moment, a design history that posits design as a cognitive act, as Jamer Hunt describes it, an act distinct from writing, and possibly “a different kind of machine for thinking.”<sup>33</sup> It begins by positioning the designer as a conflicted figure, like Dreyfuss, operating within the machinations and negotiations of a society making itself durable, as an actor in a network of power relations. Dreyfuss’s shift toward ergonomics, for example, might be seen as a nonconformist response to the complex machine age problem of fit. The grand, universalist momentum of mass-production has consistently dehumanized its subjects, but the momentum of ergonomics has historically resisted this, applying empirical research of the human form to complexify efforts at standardization (of helmets, eyewear, uniforms, office chairs, pilot seats, etc).

The difficulty with a Dreyfuss-led narrative, however, comes to light under the harsh glare of today’s biophysical crisis. Ultimately, the mission to remove friction was played out in the twentieth century as a means of separating people from the physical consequences of their actions. Dreyfuss’s most ubiquitous design, the Honeywell thermostat control, designed to provide a smooth interface between people and the heating, ventilation

and air-conditioning systems of their homes, obscured the energy cost of cranking up the air conditioner behind a simple, sleek, circular dial. The tactility of the keypads Dreyfuss designed for Bell telephones similarly become emblematic of a separation of people from the mechanical consequences of their actions: dials at least conveyed a pre-digital sense of the signals being pulsed along copper cables, much as the mechanical keys of typewriters, when pressed, demonstrated the system that produced print on paper. Today typing is a strange carry-over from the mechanical age, repurposed to rearrange binary information. From Dreyfuss we also see how the twentieth century history of button-pushing is ultimately a lesson in distancing, of people from the mechanics and true costs of the machines they are operating, from waste-disposal units to the cars they are driving.

Essentially, Dreyfuss's "points of contact" have become what Horst Rittel would call a "wicked problem":

A design problem keeps changing while it is treated, because the understanding of what ought to be accomplished, and how it might be accomplished is continually shifting. Learning what the problem is IS the problem.<sup>34</sup>

It takes a capacity for meta-reasoning to consider the ecological implications of a frictionless point of contact, what Rittel called "disorderly reasoning." This reasoning is not something new, however, but something designers already do:

Designers think more or less coherently; they figure, they guess, they have sudden ideas "out of the blue", they imagine, speculate, dream, let their fantasy wheel freely, scrutinize, reckon, they 'syllogize'.<sup>35</sup>

Indeed, evidence of the artificial integration of feedback mechanisms is all around us. An obvious example comes from videogaming, where players were rewarded with vibrations in their hand-held controllers for certain onscreen actions. Interface designs are emerging that make the costs of our actions tangible again, through indirect means. The large screen display on the dashboard of the Toyota Prius, conveying fuel consumption per mile, has had the effect of changing driving habits, encouraging less sudden acceleration and more gentle cruising. Similar devices installed in energy efficient buildings convey the carbon footprint in realtime, and consumer versions convey in glowing lights the energy use of household appliances. If technology is society made durable, then society can make its better efforts durable in the form of technology too.

The points of contact are still a proper focus of design, then, but a new design history must begin to account for their persuasive aspect. Indeed, if my argument might be summarized, it is that design history has been a rather incomplete account of what

designers do. Narratives that frame design as an act of making things user-friendly neglect to account for the way in which interfaces, or points of contact, embody larger, malevolent or benevolent, agendas. Narratives that prioritize the progression of design movements (Art Nouveau, Futurism, De Stijl, etc) provide a woefully inadequate account of the designer's role in artifact-development. Narratives that prioritize designer celebrities fail to acknowledge the collaborative nature of design, and the sometimes negative effects of their efforts.

The time for a rewrite is long overdue. Clearly, the names and ideas discussed thus far hardly constitute an adequate history of US industrial design. But the space that Thoreau, Hitchcock, Fuller, Dreyfuss, Rittel, Hunt et al open up for the reconsideration of design does have the effect of moving its history beyond objects toward design as the making of assemblages, within systems with consequences. They also help establish a definition of designers as people who take part in a complex set of negotiations, or problematizations, and who, like the client who commissions them, the public who awaits their productions and the media in which they work, are all actors in a network of power relations, all negotiating to bring something to fruition. Sometimes, the designer wields more power than other actors; a new history would find itself leaning more heavily on those who, like Dreyfuss, struggled to maintain power amid conflicting ethical demands. A new design history would surely re-evaluate those nonconformist who attempted to use design to ask questions about design, even if, like Victor Papanek, that led to the production of very little in the way of demonstrable objects. And it would certainly rethink the amount of trees we have chopped down to immortalize the status of those celebrities who thrived on a purely economic and aesthetic model of design. If, as Christopher Crouch puts it, "History undergoes constant and continual revision by all cultures," then this project is already underway.<sup>36</sup>

## Notes

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