

The Tenuous Relationship Between Design and Innovation

Abstract

The words *design* and *innovation* are increasingly used interchangeably to describe a method for conceiving of artifacts, services, and systems. While those terms, and their related tools and techniques, have a strong relationship to one another, they are not synonymous. This paper presents the case for an acknowledgement of the unique nature of Design and Design thinking, larger than and inclusive of the professional manifestation of Design in a business context.

Introduction

Many argue that the field of Design, with a capital D, has emerged in academic circles as a unique discipline that has unique tools, techniques and processes. This field is rich with connections to the liberal arts (Buchanan, 1996) and to business & engineering (Cagen & Vogel, 2002), and has been heralded by some as the profession that serves to humanize technology (Buchanan, 1996). Another field, also called design, seems to have arisen within industry. This field is also widely celebrated, but for different reasons: design is increasingly seen as a method of incubating business ideas and creating new, unique and novel approaches to issues of marketing, strategy, and consumption (Nussbaum, 2001, 2005b, 2007).

As an educator, I have seen many of the creative tools and techniques taught to students of Design in colleges and universities substantiated by practice and apprenticeship rather than by scholarly content or commentary. Design students learn by doing, and are critiqued by experts who, it is hoped, have a breadth of experience from which to fuel their comments and suggestions. The formal case study, a staple of most business schools, seems to be a rarity in Design education (although anecdotal cases are certainly conveyed in a design studio environment), and even rarer is a breakdown of theoretical fundamentals or a historical grounding for Design theory. While there are a great many books that show pictures of designed objects or artifacts, such as *1000 Chairs* (Fiell & Fiell, 2005), *1000 Lights* (Fiell & Fiell, 2006a), *Chairs AZ* (Fiell & Fiell, 2001), *Design for the 21st century* (Fiell & Fiell, 2006b), and *Industrial design AZ* (Fiell & Fiell, 2006c), very few of these books articulate what, exactly, Design is. This implies that there is a lack of formality to the field of Design proper — leading to a gap in popular understanding of the difference between Design theory and design practice.

This gap has been made increasingly obvious by the dubious manner in which Design is treated in the various popular and business journals. *BusinessWeek*, *Business 2.0*, and *FastCompany*, magazines dedicated to reporting on the state of professional business practices and

advancements, have all included sections and even entire issues that discuss the nature of Design, yet their coverage has systematically diminished the field to a set of buzzwords and memes — most notoriously "innovation". Without intellectual grounding, these buzzwords begin to create a set of expectations about designers that are often without merit and without value. For example, many non-designers seem to equate "good product design" with the Apple iPod, rather than with a set of practices that underlie the development of products such as that one. This perspective leads to a common request in design consultancies — to "just make it like the iPod". While the iPod may have certain valuable qualities, most practicing designers realize that individual design opportunities call for individual design solutions using heuristics that can apply in new ways to each new situation.

The repetition of inaccuracies in these widely read publications has created a bizarre sense of disinformation to which designers — and Designers — must now respond. This paper attempts to dissect some of these buzzwords and unpack some of the disinformation, with the goal of articulating what might be missing from these quick, pop-culture-style articles, which I argue is the acknowledgement of a robust and unique discipline of Design. This discussion has long been active among educators and researchers, but if the more pragmatic aspects of Design are to gain respect in the venues of business and engineering, the discussion must now move from the relatively safe confines of academe into the judging limelight of the practicing business and design professionals.

Examining innovation

Innovation is the term of the decade. While much of the 1980s seems to have been characterized by "quality" or "total cost of ownership" and the 1990s might be characterized as pitting the dot-coms against the blue chips, innovation, as a synonym of design, has recently become the holy grail of business. Prior to this, the media rarely gave so much attention to design and the nature of the creative process. Bruce Nussbaum (2001, 2005a, 2007), a writer for *BusinessWeek* since 1986, and now Assistant Managing Editor in charge of innovation and design coverage, can be credited with a great deal of the publicity that the profession of design has enjoyed in the last few years. This publicity seems to have pushed companies into a frenzy as they clamor for ways to integrate creative spark into their product development processes. In fact, Google (2006) references nearly three million instances of the word "innovation" within the BusinessWeek.com domain; it is used to describe everything from the use of white plastic on the ear buds of Apple's music players to the rather banal idea of giving banking customers a financial incentive to remain customers (Ante, 2006).

Innovation has been used so liberally to define an entire profession that one is hard pressed to actually identify a definition of the word itself. At a Strategy Symposium at the Institute of Design in 2005, Nussbaum said, "When I talk to my editors about design, I have trouble keeping them interested. But there's a tremendous interest in innovation" (Bierut, 2005). I argue that what is more troubling than the fact that Nussbaum's editors have a lack of interest in Design, proper, is Nussbaum's use of the words interchangeably, at least to seduce some decision-makers. Innovation does not define production-based design or theoretical approaches to Design, and while this word may hold the attention of editors and executives alike, it is best used as either a

simple qualifying adjective that can be used to describe one facet of design — newness — or as a title for a robust and different field entirely.

Researchers Vogel, Cagan and Boatwright (2005) define innovation as a verb. From this action-oriented perspective, innovation:

. . . extends beyond invention of new technology and includes a thoughtful and insightful application, delivery, extension, or recombination of existing technologies . . . the key is that an innovation is a valued leap from the viewpoint of consumers whether or not it is incremental from the producer's standpoint. (p. 24)

This definition of actionable innovation is important for a number of reasons related to both the practice of design and showing how it is different from academic Design. First, it qualifies the ever-important *newness* with the word *value*. A product, service or system can be described as *innovative*. This usually implies a sense of newness, and, in this case, *innovative* is traditionally thought of as, and used interchangeably with, the word *inventive*. The isolated use of these words implies a possible lack of utility. Just because something is new or novel does not necessarily mean it is of any use at all. This *pursuit of newness* can be perfectly desirable in some research arenas. However, in a business or creative product development setting, what is made available to the world must resonate with consumers — they must have a reason to buy the new product or use the new service.

Valuable newness also implicitly recognizes the user of the product as being more important than the producer of the product. The user is closely linked to the notion of value, and offers an argument for design methods that embrace people rather than technology. When people lie at the heart of design, within an assumption of valuable newness, technology takes its proper place in the process. What new technology was used to make the product, or what acronyms can be used to describe its development is not as important as a successful business application in which a new perspective on innovation recognizes people and their task-oriented or emotionally based wants and needs.

Finally, Vogel et al.'s (2005) definition works to shift the emphasis from the designed object to the set of managerial or business practices and actions that took place to arrive at the object — what the authors refer to as *pragmatic innovation*. This implies that the process of innovation is grounded directly in business practices such as budget practices, reward, and recognition. It also serves to imply that, like other business practices such as accounting or customer service, it has both appropriate and inappropriate applications. In the face of the innovation buzz, it might seem ridiculous to herald a product as being fiscally sound, and free of defects. But again, *innovative* is a buzzword that undermines design, because it is still trumpeted as a goal in and of itself. I argue that innovation should not be the focus of creative efforts. Instead, it is simply another aspect of the theoretical and business scope of concept development.

Within the arena of *valuable, pragmatic newness*, the development of innovative products clearly aligns with a business-centered activity, as opposed to a purely creative endeavor. The business activity is one focused on the facilitation, development, and management of new and valuable products. While this business of innovation *requires* Design, it is *not* Design, as Design is about

more than the development of new or inventive artifacts. Design as a pure area of research, just like science as a pure area of research, is not necessarily interested in the application of its study, nor should it be. Instead, it is interested in discovery, which at some point might be applied in valuable, pragmatic, new ways. For that reason Design need not simply become the "farm team" for professional practice, but is on its way to building a theory-laden arena of exploration, one which applies across cases, and one that has always marked serious inquiry.

If our field can break away from the buzzwords that attempt to define design and Design, qualifiers for designed artifacts can be useful, can illustrate the problem with the conflation of innovation and design, and can point out how Design informs design. In this case, qualifiers include *modest*, *appropriate*, and *subtle*. Charles and Ray Eames's plywood chairs, produced in 1945, would no doubt be heralded today by BusinessWeek as highly innovative, yet their goal was not "newness" — it was affordability, functionalism and purpose. Eames's designs might truly have been innovative, but only as a result of a humble and conscientious process focused on other, more fundamental qualities that apply across cases. One fundamental lies in the nature of materials and how we culturally characterize them. In part because of their work, the field now accepts that materials need not be placed in categories such as "rich" and "cheap" but instead may be placed in categories of function and purpose. That they succeeded in that exploration applied to a particular chair was the application of the exploration — one that met the demands of value and pragmatism.

Similarly, Design research and design practice still do double duty in our field. That duty covers more than the idea of newness and must be further teased apart if we are to make the best use of their unique functions. Innovation, properly defined, might be a new way to characterize successful creativity, when applied in a business setting. However, in discussions with academic colleagues, I often hear Designers define their profession in terms of language, method, communication, and empathy. Designers often feel that they play a socially integrated and culturally relevant role. For example, Carnegie Mellon has convened two conferences on service design, and the University of Salford sponsors the website *Socially Responsible Design*. Unfortunately, some seem to characterize the "business of design" in a neutral or even negative light rather than as a process with different but important concerns. Respected business analyst and founder of Corporate Design Foundation Peter Lawrence explains:

Design is the term we use to describe both the process and the result of giving tangible form to human ideas. Design doesn't just contribute to the quality of life; design, in many ways, now constitutes the quality of life. (Buchanan, 2000, p. 4)

George Nelson has been widely quoted as saying, "Design is a response to social change" (Beckwith, 2004), while Papanek (1985) proclaimed that design's relationship to people was the only important thing. All of these definitions relate Design deeply to the underpinnings of human life. Their words echo the feelings of many designers who feel that their work is as important to culture as are spoken and written language, and as critical to humanity as are human relationships. Thus, Design as viewed by Designers is not necessarily innovative, or inventive, and while the fruits of Design may be a portable music player or a beautiful car, Design itself is a process of communication. So, in order not only to be taken seriously, but also to make its best

contributions, Design, as well as the general community, needs to explicitly consider these particular aspects within the process of exploration and discovery.

Design with a capital "D"

The operating confines and constraints of a business — which certainly affect the process of artifact creation — are not part of the discipline of Design itself. This may be a controversial statement only if one views *Design* as *design* — that is, as a small part of a larger discipline of business or engineering or science. But Design is not a small part of a larger discipline; it is a proper entity of its own. It can be academically separated from Art or Science, and must be pragmatically distinct from the fields of marketing or engineering. Here, I am in no way attempting to argue that Design should not be intertwined tightly with these other disciplines in business practice; the pragmatic distinction is one of method, vocabulary, technique, and history. It has been illustrated continually that a tight and interdisciplinary integration of all business entities affords a great deal of success in industry. But this application of Design Thinking in industry is only one application of the field; consider Design Thinking in politics, or in healthcare, or in nature.

While some may argue that Design is not a discipline because aspects can be found at work within other disciplines, I would argue that, to understand what is implied by claiming Design as a distinct discipline of its own, one might turn to the generally accepted first mention of this seemingly complicated idea. Bruce Archer (1976) is referenced as the first to consider Design (and specifically Design Research) as separate from, and different from, Art or Science (and Art and Science Research). Archer, formerly the Director of Research at the Royal College of Art, continually argued that Design is a third area, separated from science or the humanities, and with a rich potential for disciplinarity, solidarity, and cohesion:

Design, in its most general education sense, where it is equated with Science and the Humanities, is defined as the area of human experience, skill and understanding that reflects man's concern with the appreciation and adaptation of his surroundings in the light of his material and spiritual needs. (Archer, 1976, p. 19)

While many Designers find it useful to define Design in relationship to these other areas, where Design is halfway between Art and Science — perhaps a mixture of the two — Archer dedicated a great amount of time to arguing that Design is *not* a combination of other fields. It is its *own* discipline. His definition had little to do with *innovation* and instead considered how Design reflects both physical (material) and also more fleeting spiritual needs and desires. His perspective placed an emphasis on the human aspects of the discipline.

The distinction between Design and other professions, including the Fine Arts, has been, then, steadily acknowledged and referenced by many academics over the last half-century, with increasing specificity. Saikaly (2006) provides a survey of this academic perspective concerning the unique nature of Design in his text *Approaches to design research: Towards the designerly way*. Not surprisingly, he references Herb Simon, who notes: "The natural sciences are concerned with how things are . . . design on the other hand is concerned with how things ought to be" (p. 3). Similarly, Saikaly notes that Narvaez believes "[t]he study object of many sciences,

among them the physical and natural sciences, encompasses everything that is, in turn, their field of action whereas design, as it has been interpreted and particularly taught, reveals some differences" (p. 3). Further, Saikaly cites Harold Nelson and Erik Stolterman who argue that:

... design is not a subset or derivative of science, or a form of art, nor is it a mid point between the two. We hold the idea that design is its own tradition of inquiry, as well as action, and is among the oldest of traditions. (p. 3)

Through perspectives that focus on how things ought to be, with a unique tradition of inquiry, a strong connection between practice and theory emerges, identifying Design as a separate discipline that contains unique elements of practice as well as unique elements of theory. Saikaly (2006) calls attention to this historical shift in order to illustrate the necessity of Design Research — a specific form of research centered on practice-based immersion, "comparable with but distinct from research in the sciences or the humanities since it advances knowledge partly by means of design practice" (p. 4). But in Design Research, the problems of individuals can be explored without the business aspect intruding into the process. This statement is supported by Saikaly's analysis of doctoral research, specifically in Design, conducted at various universities throughout the world. He concludes that, in conducting doctoral-level Design research, investigators do not attempt to follow a scientific inquiry or create studio works. Instead, their goal is to create "'plausible ideas' of represented phenomena through design practice" (p. 10). While scientists and those working in the humanities are familiar with and rely heavily on inductive and deductive reasoning, those engaged in design activities often become familiar with and embrace abductive reasoning. This type of reasoning can be thought of as the promise of what might be a — "good fit" or a "best guess". Abductive reasoning manifests itself in an iterative application of a theory to a real-world problem a design process of creation made up of both inductive and deductive influences.

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Thus, while some academics have begun to understand and embrace Design as a unique discipline, the business world continues to struggle with the appropriate integration of Design Thinking in the marketplace. The lack of documentation on the part of professional designers, the often overly philosophical and complicated documentation from academics, and the overzealous hype produced by design and business publications, leads to a strange sense of elitist misunderstanding concerning the "magical" nature of design process.

In both practice and academe, the designer is frequently misunderstood. However, when seen through the lens of a unique discipline rather than as a set of haphazard buzzwords based in the popular media, one can find that Design is not mysterious, and the process through which design solutions come to exist is not difficult to understand or to duplicate. This process, while not shrouded in secrecy, is emotionally charged and very *human* — it embraces both analytical thinking and reflective, reflexive feeling, which are characteristics all people share, yet a duality that few seem willing to embrace. This combination of logic and illogic highlights some of the differences between this profession and disciplines like Engineering and Science. While Art lives in the realm of the logic/illogic connection, the focus on the scientific method highlights a difference between Design and Art. In Design both the scientific method and literary devices

exist within Design methods and Design devices. For example, the idea of chairness — communicating the nature of something to sit on — depends on devices that are not necessarily innovative. The realm of science, social influence, human need, and cultural relevance is subject matter of the profession itself, which serves as the backdrop for the development of products, systems and services — designed artifacts.

Tangential, but not synonymous

The subject matter of Design is not that of innovation. While these are perfectly sound applications of Design in business, these do not define Design itself. What does define Design is often debated, but usually includes some relationship with language, and process, and humanity — and the use of the aforementioned abductive reasoning to apply these concepts within different areas of Design. Parallels have been made between Design and communication; Graphic Designer Saul Bass is frequently quoted as saying "Design is thinking made visual" (Koning, 2003, http://www.koneheaddesign.com/kh_html/sbass.html). In making this statement, he echoes Rudolf Arnheim (1969), whose seminal work on visual thinking equates it with the most important kind of thought for which language is only a translation. From another perspective, author and educator Richard Buchanan (1995) connects language to the discipline in a more holistic manner, as he refers to the discipline as a "liberal art of technological culture" (p. 29).

Through both the pragmatic creation of visual communication, and the notion of relationships embedded in a semantic language, a designer creates a design that attempts to assist the viewer not only in experiencing a particular emotion such as relaxation but also in understanding aspects of the content of a message such as formality or informality. This understanding goes deeper than novelty, or invention, or even utility. The audience is invited to realize — either attentively and logically, or in a more ethereal manner — the intentions of the design, in order to feel the intended message. This language is not metaphorical. The designer does not design as language is spoken. In fact, *design is language* only in that it attempts to shepherd understanding in a specific direction. In a successful design, the ambiguity of the message is limited, and while there is certainly room for interpretation, the interpretation is, in comparison with the fine arts, dramatically less free. Of course one must always consider context. While a design might imply that a chair says cozy and comfortable, how that invitation to meaning will actually be received depends on whether the chair resides in a living room or the waiting room of a trauma center.

Conclusion

Design from this rich complexity begets a design profession that has a rich and healthy foundation in academic discourse. This discourse emphasizes the role of process, and informed trial and error. The nature of Design and design do envelop and necessitate drawing connections between seemingly disparate disciplines. Design does examine and consider the role language plays in the creative process as well as the process of use or consumption. A foundation of theory instead of buzzwords increases the potential of the process of Design as a unique method of inquiry and problemsolving. While some Designers have had success in integrating their tools and processes, and themselves, into the business environment under the guise of innovation, the

notion of innovation is but one potential avenue of inquiry for Design and Design Thinking. Unfortunately, it is the gap between the academic discourse and the professional designer that has created this strange misuse of the word Design and made it harder to appreciate available Design resources found within a corporation.

Strategist Larry Keeley, who valued the mentorship of the late Jay Doblin, a designer, professor, and Director of Chicago's Institute of Design, and the namesake of Keeley's company (<http://www.doblin.com/TeamIndex-FlashFS.htm>), has become one of the leading advocates for the use of innovation in product development (Mr. Metrics, 2005). After years of studying the processes that drive new and valuable products in the marketplace, Keeley, in an impassioned reply to Bierut's (2005) *Innovation is the new black*, states that innovation is a:

. . . NEW field, not just a new word. I further contend that it has its own methodology, complexity, and professional demands. It will be VERY GOOD for the design field, but is not the same as the design field. (Bierut, 2005, online)

Keeley is right. The often arbitrary interchange of the words Design and Innovation are doing a disservice to the growth of both concerns. Design can be innovative, and the innovation can be powerful. Design can also be other things: it can be delightful, or heartfelt, or sustainable, or romantic. All of these things need to be better understood, documented, debated and explored if Design is to enjoy the status and solidarity of a respected discipline. And while these qualities may not have a great deal of business value, they hold a tremendous level of human value. That is the benefit, and power, of a unified and unique discipline of Design: it is a field that exists as a champion for humanity. When it has shed the artificial constraints of business, or art, or engineering, the unique discipline of Design can begin to truly affect positive change for society, for culture, and for people.

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