On a recent trip to China, I stayed at a very good hotel, not far from a classic Chinese garden. Chinese gardens are different from parks in the West. Like their Western counterparts, they have winding pathways through areas of water and rocks; they have many kinds of trees and flowering plants; but among their most distinctive features are the many niches that visitors encounter on a walk. These niches provide both prospect and refuge. Prospect affords a longer perspective of an area of the garden—sometimes with a small human-made structure like a bridge or a small temple and sometimes with natural elements, such as rocks and trees arranged in a seemingly spontaneous display. (See Figure 1: Chinese Garden Prospect. Wuxi, China. Photo by Richard Buchanan.)
Figures 1 and 2.) In contrast, the niches also provide refuge, creating a small personal space where visitors can reflect on anything that draws their mind. (See Figures 3 and 4.) The niches offer a sense of calm and shelter from the overload of information that comes from the sensations and demands of the surrounding world.

I went every day to this garden, thinking about the writing that I was working on at the time. Along the way, I found a particular niche that effectively created a balance of prospect and refuge—a balance that helped me to work out the writing problem on which I was engaged. I returned regularly to this niche as
a favorite place for my reflections. In the beginning, I found the surroundings pleasant enough, attractive for the color and sound, as well as for the physical features around me. I confess that I was conscious of the Chinese quality of the niche and the larger garden, and at first I found it rather quaint, like the postcards bought at an airport—sometimes sent to a friend or kept in a personal folder as a reminder of a trip. (See Figure 5.) But at some point, the niche changed. It drew me when I was writing in my hotel room and encountered a difficulty. I would go and sit quietly, or pace around the place, and my thoughts would take shape as words and ideas came together. I would return to the hotel, pick up the argument of my writing and move ahead.

Prospect–refuge theory is usually treated in its literal meaning. It refers to physical spaces in landscape or architecture, illustrated in Appleton’s original articulation of the theory in the experience of landscape. But in the arts of rhetoric and dialectic, the theory of prospect–refuge could also be regarded as a “commonsense” or a trope—a figure of thought that can be applied to the relationship between, for example, narrative and argument. In the West, the relationship between “mythos” and “logos” is sometimes regarded this way. Narrative is the mythos: a place of prospect that

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Figure 5
Chinese Garden Niche with Prospect and Refuge. Wuxi, China. Photo by Richard Buchanan.

provides a perspective based on wide personal experience. In contrast, argument is the logos: a place of refuge providing a universal perspective based on formal reasoning and principle. Ironically, the opposite analogy also is possible: Narrative offers a refuge from narrow reasoning, while argument offers the prospect of broader or deeper understanding. Both perspectives are possible and, in a sense, interdependent. Kenneth Burke, a keen observer of the relationship between mythos and logos in our use of language for symbolic action, refers to irony as the central figure of thought employed in dialectic: Irony is a device for expressing an idea by means of its opposite, and in the highest uses of irony, we see a subtle kinship of both the idea and its opposite—in this case, of both narrative and argument. The irony in combining narrative and argument might help to explain the significance of the niches of Chinese gardens and the broader relationship of surroundings and environments that they suggest.

During my visits to the niche, I gradually became aware of a subtle transformation: The surroundings became an environment. Philosopher John Dewey provides an explanation of this kind of transformation. Surroundings, he says, are the “environing circumstances” of our life—the physical sensations surrounding us in continuity with our living processes. They can be anything that we perceive as outside of ourselves, with unknown but potential personal significance. Environment comes when, through a mental act, we have an intention as a human being to be in a space for some reason or purpose of our own. Human intent transforms the surroundings and environing circumstances into an environment for experience and action. Dewey discusses this transformation in the context of his philosophy of education, but the idea has implications beyond education, extending into art, design, social action, and all forms of research. I can illustrate this concept with a small story from childhood. When I was a boy, I studied the variability of light in a double star system known as S Cancri. My mother, who was always very supportive of what I wanted to do, came outside to where I was working with my telescope. When she asked what I was doing, I explained that I was observing a faint star to understand why the light changes over time. I explained that it was actually two stars rotating around each other in regular eclipses and that I was trying to measure the changes in brightness (a goal for which I later received a prize from the High Altitude Observatory in Boulder, CO). She said, “that’s interesting,” and went back into the house. For her, these two stars were part of her “surroundings.” For me, this star system, as far away as it was, was part of an “environment,” transformed by my curiosity and observation.

3 John Dewey, Democracy and Education (New York: Free Press, 1966), 10ff. The idea is particularly well explored in Art as Experience, where the environment of the living creature is a central theme. John Dewey, Art as Experience (New York: Capricorn, 1958). We can see similarities, but also significant differences, between Dewey’s concept of environment and Heidegger’s concept of “place.” Dewey’s environments are grounded in human intent while Heidegger’s “place” is grounded in the idea of Being-in-the-World. A full exploration of the difference of principles in these ideas deserves extended discussion but is not undertaken here. Nevertheless, we note a connection between Dewey’s work and various forms of phenomenology.
This concept of environment shapes our understanding of interior design: *Interior design is the transformation of surroundings into environments that are meaningful, supportive, and substantial in human experience.* Such transformation is useful for understanding many areas of design, ranging from graphic communication and industrial design to interaction design, service design, organizational design, and the design of complex systems. All areas of design involve the transformation of surroundings into environments. However, the idea of creating an environment is the key idea that animates the work of interior design. This concept was borne out further during a visit to the Suzhou Museum, designed by I.M. Pei. Pei’s design reflects the influence of traditional Chinese architecture, but it also reflects the classic concept of the Chinese garden, as is evident not only in the surroundings of the building—for example, the famous Lotus Pool, the carefully placed stands of bamboo trees, and the careful placement of rocks—but also in the interior spaces. The many niches and alcoves of the building offer visitors both prospect and refuge—quiet private spaces, as well as views through glass windows into the surrounding plants and trees, or deeper views into the museum itself. A visitor might be struck by the way the “outside” becomes “inside” in the design of this building: The features of the surrounding garden emerge as features of the interior environment, and the interior environment creates easy connections to the outside stands of trees, water, and stone. (See Figures 6 and 7) The interplay of inside and outside is a distinctive feature of the architecture and the interior design of Pei’s museum. Both inside and outside, people at the museum engage in the activities that make us human: talking, holding hands, smiling…. Whether through prospect–refuge theory or any of the various concepts of interiors, the issue is how we transform surroundings into environments.
A project that seeks to bring “big data” into the intensive care unit (ICU) of a hospital provides further illustration. The unit has at least eight different computer systems that display information on eight different monitors regarding eight different aspects of a patient’s condition, all with different time scales and measures. Doctors and nurses confront this array when they approach patients to assess their current status and determine courses of treatment. Imagine the difficulty presented by a crisis requiring a quick response. The information overload—that the doctor or nurse faces can be frightening.

How can the caregiver access the information—the significant information—that is needed to deliver effective care? An excellent team of computer scientists has developed an integrative system that combines the data sets based on a common or shared time scale. This remarkable accomplishment now presents a design problem in the last ten feet—from the Wi-Fi source or the wall outlet to the bedside, where the doctor must work and make decisions. How can the information be displayed in an easily accessible way that is open to professional interpretation and judgment? In terms of our theme, how can we transform the information surroundings into an information environment, integrated into the interior design of the ICU?

This description of the ICU situation leads to another idea for consideration. The work involved five teams of graduate students, with each team focused on a specific research theme: (1) users of information; (2) medical processes of care and treatment; (3) information structures and hierarchies of data; (4) human interactions in the ICU; and (5) the space and the physical and social environment of the ICU. As work progressed, we realized that three of the teams were dealing with “technical matters”—medical issues of care and treatment, information structures, and profiles of users. The other two teams were dealing with something entirely different: the wholeness of the ICU. They focused on the wholeness of human interactions and the wholeness of the environment that supports these interactions—the same problem, but from different points of view. They were dealing with a different order of integration from the combination of technical specializations. This realization offered a moment of insight for the research group and a further clue to understanding the nature of interior design. Interior design is certainly about transforming surroundings into environments, but it also is about integration in the wholeness of the environment.

What interior design is sometimes is as problematic for other design professionals as it is for the general public, leading to confusion about what interior design contributes through its close

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alliance with other areas of design and technical expertise. This confusion is partly a consequence of the unfolding development of design itself and its broadening applications. For example, we see occasional confusion about the relationship between interior design and interior decoration or between interior design and interior architecture. Perhaps more significant is the complex relationship between interior design and specialized applications of interior design in areas such as healthcare, organizational behavior, or the development of social and governmental services, as well as applications in commercial buildings, domestic living, and public buildings and spaces. What is special about interior design that gives it a distinctive identity? Although different from all the other practices of design, it also is related to them in subtle and important ways. Problems emerge both in practice and in the education and research efforts that support the diverse practices of interior design. How can we clarify the nature and goals of interior design, establishing an identity for the practice that distinguishes it from the close alliances that also are part of the practice? The work of important designers, including I.M. Pei, seems to cross between different areas of design practice. We see another example in Eileen Gray, a remarkable designer who was an architect, an industrial designer, and an interior designer, and in her work, each of her practices informed the others.  

Interior Design and the Four Orders of Design

From its beginning, whether through conscious understanding or intuitive insight, interior design has maintained a distinctive focus on the wholeness of the environment that it seeks to create through the transformation of mere surroundings. Indeed, the practices of interior design have quietly influenced our understanding of environments in general, at times echoing theoretical discussions of environments elsewhere and also providing the concrete manifestations of what environments can become in our lives. It has broadened the concept of environment in human experience even to the point that, despite all of our sophisticated and often technical talk about user experience in design, we have begun to recognize that our concern for user experience cannot be adequate without a deeper understanding of the nature of the environments that we seek to create—and the principles upon which we seek to ground these environments and human experience itself.

We can explore the broadening concept and practices of interior design by looking at the development of the broader enterprise of design during the past century or more. In doing so, we can trace the changing meaning of environment, which is now problematized in what we call “fourth-order design.” This new practice of design engages some of the most complex and difficult
creative work that designers have been called on to address. Our hypothesis is that interior design, from its beginning, has been a fourth-order design practice and that its development sheds light on what fourth-order design is becoming in areas that are seemingly far removed from the classic popular image of interior design. The development has unfolded through a series of commonplaces identified by the terms communication, construction, and interaction, which are expressed in the concepts of place, space, and action, respectively. Furthermore, the progression from one commonplace to another leads to the commonplace of the interiors of the mind, where we seek new ideas about how to create the organizations and systems that have become the new environments of human experience.

The emergence and development of design through the twentieth century and into the twenty-first century is captured in the synoptic concept of the Four Orders of Design. These four orders often are presented in the form of a matrix, identifying the central problems and opportunities that designers have been called on to address in the twentieth century and that they now pursue in rich array in the twenty-first century. (See Figure 8.) The matrix is sometimes interpreted as a set of categories for understanding the nature of design theory and practice. However, this use tends to fix

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8 Richard Buchanan, “Wicked Problems in Design Thinking,” *Design Issues* 8, no. 2 (Spring 1992), 5–21. The matrix of the four orders has been used in many places around the world, sometimes in the field of design and sometimes in other disciplines that seek to understand the nature of design and its expansion into new areas of human experience. It has been used to explore new curricula in colleges and universities, and it has been used in studies of the design process, focused around strategic conversations.
the interpretation of each practice of design, making sharp boundaries that conceal the many innovations and cross-fertilizations that take place in design thinking. The matrix was not intended to be a set of categories. Rather, it was intended to be a heuristic device—that is, a creative matrix of topics or commonplaces that are suggestive as places of invention, discovery, and innovation—even places of intuition—for exploring the diverse opportunities for influence that design thinking can have on our lives. It reveals the cross-fertilizations and innovations that categories, which are constructed to be precise and exact, tend to obscure. Topics and commonplaces have a long history in Western culture, and this history is primarily in the context of the liberal arts of rhetoric and dialectic. Philosopher Richard McKeon explains the nature of commonplaces in their creative use:

"A commonplace is a place or seat of arguments; it is not itself an argument but a heuristic device by which issues that have never been considered before suggest distinctions and relations to be examined in search for solutions."

Despite the ubiquity of topics and commonplaces in everyday design practice, surprisingly few efforts have been undertaken in design theory to explore their nature, use, history, and philosophical foundations in rhetoric and dialectic.

Early in the twentieth century, designers initially found their problems and opportunities in the two large fields of communication and production. One field was mass communication through signs, words, images, and symbols. Work in this field led to the innovation of Graphic Design—the creation of a design practice to provide type, layout, and images for newspapers, books, journals, magazines, posters, brochures, and other print media that served the purpose of communicating information, texts, and arguments for society. Over the course of the twentieth century, graphic design gradually developed into Visual Communication and then into Communication Design. The changes reflect a changing understanding of the essence of the practice, refined as new materials were included: information, digital media, sound, and the dynamic display of information and ideas. This understanding is represented in the matrix by the commonplace of Signs. I call this domain the first order of design.

Interior design certainly is not the same as graphic design, and yet there is a practice of interior design that focuses on communication through an environment, using signs and symbols to

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10 Used as strategies of inquiry, the many grammars and logics in design theory tend to render trivial or even invisible the topics and commonplaces that are quite apparent and decisively significant when seen through the lens of rhetoric and dialectic.
create a “place.” (See Figure 9.) This practice was common in the nineteenth and early twentieth centuries, and it remains a form of design practice today, sometimes referred to as “place-making” in the context of urban design. In this approach, what is communicated is the personal vision of the designer or the owner of a residence or some other private or public place. The vision might be aesthetic, or it might be cultural, but in either case, it is an expression of the personality or imagination of the individual or the community. Essentially, however, it is a vision of the whole of the environment, rather than the isolated parts. The vision creates and integrates the many parts into an effective whole—into an environment for living and into a “place.” The parts might include objets d’art, paintings and drawings, furnishings, textiles and fabrics, personal memorabilia, and photographs, and they all work together to support the activities of living that are characteristic of the place in question. I identify this practice of interior design as a fourth-order design practice, and I locate it in the matrix as the imaginative merging of the commonplaces of communicative Signs and integrative Thought.11

11 The creative merging of topics, or commonplaces, has an affinity with what Coleridge describes as the operations of the mind through imagination. He says that imagination, in contrast to fancy, “dissolves, diffuses, dissipates, in order to recreate…. Fancy, on the contrary, has no other counters to play with, but fixities and definites. Fancy is indeed no other than the mode of Memory….” S. T. Coleridge, Biographia Literaria, vol. 1 (Oxford: Oxford University Press, 1969), 202.

Figure 9
Interior Design and the Four Orders of Design.
© R. Buchanan.
The second field where designers found their problems and opportunities early in the twentieth century was mass production: the creation of all the artifacts or physical objects, of whatever scale, that facilitate our living. Work in this field led to the innovation of Industrial Design—the creation of a design practice that provided the plans and prototypes upon which the constructions of industrial mass production could proceed. This field is represented in the matrix by the commonplace of Things, by which I mean the physical objects that designers create. These objects are sometimes discussed in terms of their primary physical qualities and of the secondary and tertiary features that are associated with such objects in the mind. However, better known and perhaps more effective ways of discussing physical objects and the artifacts of industrial design are available, including an analysis of form, function, materials, and manner of production and use. Over time, the practice of industrial design gradually progressed into what we call product development, incorporating the perspectives and knowledge of other disciplines that are involved in and interact with product strategy and planning. I call this domain the second order of design.

Once again, interior design certainly is not the same as industrial design, and yet there is a practice of interior design that has an affinity with the issues of construction in space: Form, function, materials selection, spatial dimensions, aesthetics, and task analysis all are characteristic concerns of industrial design in the various scales of production. This practice was evident in the early twentieth century, and it remains an important practice today. Explorations of new kinds of domestic products that save time and improve efficiency led to an effort to integrate such products into newly designed spaces in the home, in offices, and in factories. For example, this effort extended the concerns of industrial design into the construction of new room layouts in kitchens, based on concerns with efficiency of motion and action; saving space and time; and health, safety, and welfare (HSW). However, a living space is not a machine, and the concern for aesthetics and personal expression remained with the new practice, as did consideration of the psychology of users. The broader approach is evident today in the effort to establish a professional body of knowledge (BOK) for interior design and the relationship of such knowledge with issues of HSW. It also is evident in the effort to integrate new information media and computing equipment into spatial environments. When we refer to the “internet of things,” we also are considering the integration of new information environments into the spatial environments created through interior

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12 The argument does not directly address the development of engineering or architecture, but they also could be included here, taking shape around the problems of construction.

13 Primary qualities are the properties of the object independent of the observer; secondary qualities are subjective, belonging to the sensation of objects that arise in an observer; and tertiary qualities reflect our ideas about principles and values—what is good, just, or beautiful, whether derived from philosophy or religion. Tertiary qualities are qualities of associated feeling based not on the physical object but on the “object of expression,” such as the “hushed reverberations” described by Santayana. George Santayana, The Sense of Beauty: Being the Outline of Aesthetic Theory (New York: Dover, 1955), 119.


Design, as illustrated previously in the project of bringing “big data” information displays to the bedside for doctors and nurses in an ICU. I identify this practice of interior design as another form of fourth-order design practice, and I locate it in the matrix as the merging of the commonplaces of the construction of Things and integrative Thought.

By the middle of the twentieth century, a new field of problems and challenges emerged for designers. The focus initially was on how humans interact with machines, control surfaces, and information displays. Soon enough, the question turned to how humans interact with computers. This evolution led to new ideas about interfaces and human-computer interaction. However, within a short time, designers began to consider not only how humans interact with machines and computers, but also how humans interact with each other. Machines, computers, and other artifacts sometimes mediate these interactions, but sometimes the mediating effect of artifacts is not as significant as the human-to-human interactions. How can we design these human interactions and relationships? This question unleashed a torrent of new work throughout the later decades of the twentieth century and certainly into the opening decades of the twenty-first century. It led to the establishment of a new innovative field of design—Interaction Design—with a variety of new branches of design practice, including interactivity design, user experience design, and service design. The names for this field of practice are diverse, driven partly by the demands of narrow professional identities, partly by the marketing needs of businesses and consultancies that want to differentiate their offerings from competitors, and partly by the development of highly technical research in specific areas. However, the practice extends even into the design of government, industrial, and information policies and strategies. This is represented in the matrix by the commonplace of Action. I call this domain the third order of design.

Interior design certainly is not the same as interaction design, and yet an emerging practice of interior design is closely aligned with human interaction through the creation of environments that support the qualities of meaningful interaction. We cannot design effective environments without carefully considering the human interactions that take place in these environments; in turn, we cannot design effective human interactions without carefully considering the environments within which such interactions take place. This theme is significant in interior design today and an important concern in education and research. The goal in education is to help students understand that by studying human interaction that have influenced design are John Dewey’s theory of experience and Erving Goffman’s theory of facial engagements and symbolic interaction. See, e.g., Dewey, “Having an Experience,” and Erving Goffman, “Facial Engagements,” in Behaviour in Public Places (New York: The Free Press, 1963).
interactions, they will better understand how to create the interior environments of action that influence how we live, work, play, and learn. When we extend such actions beyond the literal places and spaces of traditional practice, we also move into virtual and hybrid environments, where the insights of interior design might have implications for how we understand and create the virtual environments of the digital world. Indeed, the merging of action environments is already apparent—for example, in the strategic question of what comes after the “smartphone,” when digital information is embedded in our living and working places.

The merging of literal and virtual environments of action is already taking place in some of the most advanced technological platforms, with important implications for how we will live in the future. What can interaction designers learn from interior design? Interaction design provides many tools for the observation and interpretation of human interactions, and these tools and concepts can provide a source of new ideas about interiors. In short, interaction design is design for human interaction in the broadest sense, and yet its potential as a source of invention and discovery for interior design is not yet fully understood. We see the consequences in many spaces that are not adequate as environments for supporting the many cognitive and emotional aspects of human behavior. Unlike the other practices of interior design, this creation of environments in light of human interaction has not yet been fully explored in practice or in research or theory. At this early stage, it is nevertheless a leading edge of practice and theory in interior design. In addition, as in other areas of design, the names of our educational programs and degree offerings are undergoing further development reflecting new perceptions. A small number of programs in “Interior and Environmental Design” or “Environmental Art Design” now exist, and the number will likely grow as our curiosity and knowledge similarly grow.

We have traced one thread in the nature of fourth-order design through the development of interior design as a pluralistic practice with different dimensions of focus in the topics or commonplaces of communication, construction, and interaction. However, developing the idea of fourth-order design further is important because of its implications for practice, research, and education in all fields of design. By the end of the twentieth century, designers began to ask: What is the context within which human interactions take place? For example, in interior design, designers have asked about the context within which all of the practices of interior design take place. For many of the human interactions explored by designers, further design of environments, organizations, and systems is needed that supports these

interactions, whether individual interactions or collective interactions (e.g., in social media). These complex wholes present the largest and most difficult challenges that designers increasingly are called on to address. They are represented in the matrix by the commonplace of Thought. I call this domain the fourth order of design.

**Fourth-Order Design**
Principles are seldom explicitly discussed in design literature, but they are always present in the work of design. They are the beginning and end of products, and they also provide the foundations of histories and theories of design. As the poet T. S. Eliot writes: “In my beginning is my end…. In my end is my beginning.” This is a principle of reflexivity that many designers, as well as design theorists, might appreciate. A principle might be held by an individual, or it might be held collectively, shared among the participants in an organization, a government, or a culture. In identifying guiding principles in fourth-order design, we can draw on Thomas Carlyle’s reflections on the city of London. For Carlyle, the nineteenth-century Scottish humanist, philosopher, and writer, thought was manifested in the panorama of London, created through individual (heroic) action but also in the collective accomplishments of society:

> This London City, with all its houses, palaces, steam engines, cathedrals, and huge immeasurable traffic and tumult, what is it but a Thought, but millions of Thoughts made into One; a huge immeasurable Spirit of a THOUGHT, embodied in brick, in iron, smoke, dust, Palaces, Parliaments, Hackney Coaches, Katherine Docks, and the rest of it! Not a brick was made but some man had to think of the making of that brick. [emphasis in original]

The relationship of individual action and collective accomplishment is one of the signs of fourth-order design. Thought in fourth-order design arises through a dialectical process of individuals working together to discover and express a value that is shared by an organization, a community, or a culture. This is what we mean by humanistic design: discovery of the principles by which we live and flourish in the human community. A designer or design firm often facilitates the dialectic, but the focus is not on the vision or insights of the designer or his or her design firm. Rather, the focus

19 Thomas Carlyle, On Heroes, Hero Worship, and the Heroic in History (London: Chapman and Hall, 1841), 43. The reputation of Carlyle’s works has vacillated over time, but it appears to be rising again, with the recognition that he resisted a materialist worldview when the Industrial Revolution emerged in the nineteenth century.
In Platonic dialectic, the facilitator of dialectic is called a “midwife,” delivering not a child but new ideas and insights. See Plato, Theaetetus, 150 b-c.

There is a distinction between first principles and other kinds of principles that occur in common use. First principles are, in a sense, absolute; they are original sources of order and value, providing the beginnings and ends of human activity. The other kinds of principles are many and diverse, often technical or minor, serving as sources of organization in areas such as design method. What are sometimes called “universal design principles” in textbooks and reference manuals are usually no more than what Herbert Simon called “rules of thumb,” or useful concepts employed in practice; they hardly are principles in any significant sense. For an excellent discussion of the nature of principles, see Walter Watson, The Architectonics of Meaning: Foundations of the New Pluralism (Chicago: University of Chicago Press, 1985), 101–50.

Richard Buchanan, “Human Dignity and Human Rights: Thoughts on the Principles of Human-Centered Design,” Design Issues 17, no. 3 (Summer 2001), 35–39. Even the spelling of a word can be the inspiration for and location of a discussion of principles. For example, writers within the continent increasingly spell its name as “Afrika,” rather than “Africa.” The two spellings represent the dialectic in the historical process of discovering a continental identity that is independent of Western and Eastern narratives. (Conversation with Dr. Mugendi M’Ritha, Professor of Design, Peninsula University of Technology in South Africa, and former President of the World Design Organization, January 20, 2018.)


Thought is the proper commonplace for understanding fourth-order design, but it is not “thought” as it occurs in the brain. It is “thought” as it occurs in the mind, as the mind seeks organizing principles for the complex environments, organizations, and systems within which design must participate and that design is sometimes asked to create. Thought is the principle of organization that brings all of the parts of a complex whole together in a unity around a common purpose or goal. The unity of thought might be internal to the object being designed (the “design idea”), or it might be external in the surrounding world: the “cosmos” when the universe of things is seen as a well-ordered and interdependent whole within which the products of design must function as viable solutions to problems. The organizing principle might be expressed in a theory, a system of thought, a system of beliefs, a value or a set of values, or even in an equation or an algorithm upon which a complex system is established. It might be symbolized in an image, a flag, or even a word. For example, “Ubuntu” is such a word. Used in South Africa and now in other African countries and beyond, it represents a principle of compassion and community, standing for the humanity of a nation. It also is a principle that has been carried into enlightened design practice and associated with the design principles of human dignity, where the human user of a product or a service is treated with both honor and respect.

Humanism and Dialectic in Fourth-Order Design

We characterize practice in fourth-order design as “Dialectical Design” because it is a useful way to identify the common thread of humanism among the many forms of fourth-order design that are emerging around the world. The ventures include “Design Lab” in Helsinki; “Mindlab” in Denmark; “Second Road: Leading Strategic Innovation” and the vision of “strategic conversations for organizational change” in Australia; “ThinkPlace” in Australia; and the “Stanford Legal Design Lab.” Additional efforts include work in policy and the uses of design in organizations, public sector administration, and the design of government; recent conferences on the relationship between systems thinking and design thinking; the “Lab” of the Federal Executive Institute at the U.S. Office of Personnel Management; efforts toward social innovation; and a wide variety of other work around the world that is local, national, or international in scope.
Many forms of humanistic design and dialectic arise in the development and practice of fourth-order design, but they all share a common concern for four themes: human-centered design; the importance of wide, diverse participation by stakeholders; a new interpretation and understanding of the emerging theme of experience design; and the “wicked problems” that lie behind the challenges in organizations, communities, and human systems in general. From the perspective of the grammars and logics of design, wicked problems are usually regarded as “complicated” or “complex” problems arising from the many parts affecting design thinking. From the perspective of fourth-order design, wicked problems are regarded somewhat differently. Wicked problems certainly can be complicated or complex, but more significantly, they are the location of values and purposes that are “essentially contested” among the participants. Wicked problems are not problems that are contested merely by competing short-term interests; they are essentially contested on the grounds of different principles and fundamentally held values—for example, values at the heart of digital platforms that promise to connect human beings in online communication. Finding the mediated middle in such disputes is the central challenge of fourth-order design, and it requires the participation of all stakeholders who have a share in the outcome. Resolving wicked problems—even temporary resolution—is the work of dialectic.

The different kinds of dialectic that we find in the field of design and in the wider human community can be described in many different ways. One way is based on the traditional divisions of philosophy—for example, idealist dialectics, materialist dialectics, and the skeptical dialectics of questioning and discussion. This set of distinctions is useful for some purposes, but a different way of distinguishing the forms of dialectic might be better suited to understanding the practical work of fourth-order design, where participants hold distinctly different values and goals. Among the forms of dialectic based on the principle asserted or the shape and form of discussion are “one-term dialectics,” which are hardly dialectical at all but more often a dogmatic reduction of differences to a single principle, sometimes based on an emotion or an emotionally motivated slogan. Also among such forms are “two-term dialectics,” which are clear from the either/or oppositions that often occur in discussions. Of a different character are the “three-term dialectics,” which are found in serious conversation, skeptical questioning, and planning activities where the work seeks to discover the common or middle ground in highly contested situations of competing and often conflicting opinions. The motto for this form of dialectic might well be expressed in Jaspers’s comment, “the truth begins with two,” where truth is sought as the third and
mediating term. Whatever the form or method of interaction in fourth-order design, the goal is the discovery of what is “possible” within a community, despite the belief of some participants that a solution is “impossible.” In fourth-order design, all three forms of dialectic frequently occur in conversations, and the challenge for the facilitator is to bring these different perspectives into a productive engagement, often through a temporary suspension of judgment until the middle is discussed and assessed.

Three Implications

One implication of fourth-order design is that a rigid separation of the branches of the discipline of design is not adequate for the solution of many of the challenges designers face. Of course, good and sufficient reason exists for distinguishing among different design practices; specific, distinctive bodies of knowledge must be conveyed in areas such as graphic, industrial, and interaction design that are important for the early education of students. But the major innovations in design practice that have emerged over time have typically come from the migration and merging of themes from one branch into another. We have seen such a development in interior design as it moves into new areas of practice, and we have seen it in other forms of design practice where themes, such as user research and human-centered design, as well as many techniques of practice, have crossed over into other practices. The later work of graphic designer Milton Glaser also illustrates the extension of graphic design into other areas, based in his case on the idea of intent and communication. “I don’t consider design as a limited activity,” he said in a recent interview, commenting on his new work in physical objects and consumer goods. “Design is intent, intent to communicate something to somebody so they move to action, and that includes practically everything in the world, from making a lunch date to designing an office building.”

What holds for graphic design and the commonplace of communication also holds for other forms of design practice based on other topics or commonplace.

A second implication of fourth-order design is that design in all its forms is a cultural practice, emergent as a new vision of the liberal and humanizing arts in our time—the humanizing of technology and of the relationships among people. We should encourage professionals and help our students to explore in sophisticated ways the cultural dimensions of their work—both in exploring other cultures and in exploring how cultural values migrate from one environment to another in the complex world in which we now live. Whether the culture is as broad as Chinese culture or as local as the culture of a hospital ICU, observing and understanding how cultural values are manifested is significant.


A third implication concerns boundaries and limitations in the four orders of design. For example, the boundary of the third order of design arises when we see the need for a richer understanding of the environment of interactions and the need to explore the larger platforms, organizations, and systems that allow for and support collective interactions, including many interactions within a shared framework of organizing values and principles. When this need is recognized, design thinking shifts to the commonplaces of fourth-order design. In turn, the boundaries and limitations of fourth-order design emerge—paradoxically, when the systems and organizations of fourth-order design solutions that are intended to support the individual instead begin to oppress the individual and his or her experience of action, freedom, and thought. When the principles on which fourth-order design is grounded come to violate the aspirations and values of individuals, the time has come either to reconsider and reinvent those principles or to reposition design thinking, focusing on another of the four orders of design, rather than the fourth order, to invent or discover new values and expressions. Indeed, this repositioning of problems often leads to the rejuvenation of culture in new communications, constructions, and interactions.

**Prospect and Refuge in Design**

Our inquiry began with a narrative description of a personal experience of a Chinese garden that revealed the transformation of surroundings into an environment. From there, the inquiry moved to an exploration of the innovative development of interior design over the past century, seen through the lens of the creative matrix of the four orders of design. In this theoretical discussion, the goal was not to arrive at a definitive explanation of the changing nature of interior design but to explore the places of innovation that might give insight into the unfolding both of interior design and of its relationship with other forms of design practice. A reflection on the nature of fourth-order design and its implications followed, which then led to a consideration of prospect and refuge in the broader field of design. For the dialectician, prospect and refuge is more than a theme to be applied to places, physical spaces, and the human perception of these places and spaces. It also is a theme in the broader understanding of design in action and in the...
mind. The growth of design is not a development toward better approaches or solutions to problems and challenges—although sometimes this development does happen. Instead, it is a creative and innovative growth toward new opportunities for design thinking and new approaches that add to the pluralism and diversity of the ecology of design and the essential humanism of the design enterprise. Interior design represents only one thread in the broader practice of fourth-order design, but all instances of fourth-order design share some variation of dialectical thinking that seeks to explore the relationships and interrelationships of our surroundings, turning them into environments of human experience. Continuing to explore the four orders of design as places of invention, discovery, innovation, and intuition—rather than as categories of fixed meaning—reflects the restless imagination that characterizes the essence of design.

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