



## DESIGN ETHICS



Design ethics concerns moral behavior and responsible choices in the practice of design. It guides how designers work with clients, colleagues, and the end users of products, how they conduct the design process, how they determine the features of products, and how they assess the ethical significance or moral worth of the products that result from the activity of designing. Ethical considerations have always played a role in design thinking, but the development of scientific knowledge and technology has deepened awareness of the ethical dimensions of design. As designers incorporate new knowledge of physical and human nature as well as new forms of technology into their products, people are increasingly aware of the consequences of design for individuals, societies, cultures, and the natural environment.

The design arts are important because they are the means by which scientific knowledge and technological possibilities are converted into concrete, practical form in products that serve the needs and desires of individuals and communities. Design is difficult to define because of its breadth of application. One can discuss the design of scientific experiments, of theories of nature and society, of political systems and individual actions, of works of fine art, and of the everyday products created by engineering and the other useful or practical arts. In all of these examples, design may be described generally as the art of forethought by which society seeks to anticipate and integrate all of the factors that bear on the final result of creative human effort.

Descriptive definitions have a useful place in explaining the nature of design for a general audience—for example, “design is the art of forethought,” “design

is planning for action,” “design is making things right.” However a formal definition has the advantage of bringing together all of the causes or elements of design in a single idea so that their functional relationships are clear, and provides a framework for distinguishing and exploring the ethical dimensions of design. The following formal definition serves present purposes: *Design is the human power of conceiving, planning, and bringing to reality all of the products that serve human beings in the accomplishment of their individual and collective purposes.* There are four ethical dimensions represented in this definition, each identifying an area of ethical issues and potential moral conflict that often complicates the activity of designing but also enhances the value of the designer’s work. These dimensions represent the web of means and ends that are the central concern of ethics and moral conduct in design.

### Character and Personal Values

The first ethical dimension of design arises from the human power or ability to design. One may reasonably argue that design itself is morally neutral because the art is only an instrument of human action. However designers are not morally neutral. They possess values and preferences, beliefs about what is good and bad for human beings, and an array of intellectual and moral virtues or vices that constitute personal character. The power or ability to design is embedded in a human being, within the character of the designer. Personal accounts, written statements, manifestos, and biographies are the beginnings of the study of ethics in design. They provide direct and indirect evidence of individual character and personal values, and often include accounts of the moral dilemmas and decisions that individuals have made in the course of their careers. Thus the first ethical dimension of design is the character and personal morality of the designer.

### Integrity of Performance

A second ethical dimension arises from the activity of conceiving, planning, and bringing products to reality. These activities are the immediate goal or purpose of design. The standard of performance demonstrates fidelity to the art of design itself and is a matter of personal and professional integrity. In the film *The Bridge on the River Kwai* (1957), a British colonel and his fellow prisoners of war are instructed by their Japanese captors to build a railway bridge for the transportation of troops and munitions. For the colonel, constructing the best bridge—a *proper bridge*—is a matter of personal and professional integrity, and he pushes his men harder than

their captors to complete the work on schedule. The tragedy of his narrow commitment emerges at the end of the film when the colonel realizes that his obsession with achieving the immediate goal of professional performance in the prison camp conflicts profoundly with the ultimate goal of his service in the British army. Ultimate goals are another ethical dimension of design to be considered later, but this film, while a work of fiction, effectively illustrates the second ethical dimension of design.

Performing well raises other closely related ethical issues. Designers are responsible for relationships with others involved in performance of the art. In some cases the designer works alone and is responsible directly to a client. Ethical standards of fairness, honesty, and loyalty serve to guide the client relationship, as in any personal or business dealing. In most cases, however, the designer works with other individuals and has shared responsibility for maintaining those relationships according to ethical standards. For example because of the increasing complexity of products, technology, and other factors, designers work in teams with fellow designers or with technical specialists from a variety of disciplines and professions. There are also new practices of participatory design in which clients and even representatives of the end users of products participate directly in the design process. Finally there is an increasing emphasis in some forms of design on user research, requiring the ethical treatment of human subjects.

Guidance in these matters comes partly from personal morality, but also from professional codes of ethics formulated and established by professional societies. Because many of the branches of design are young—some were established as professions only in the early and middle decades of the twentieth century—designers turned to already established professional associations, such as those for medicine, law, business, engineering, and architecture, for guidance on many ethical issues, including how to formulate their codes. At the beginning of the twenty-first century, designers continue to look to those professions for sophisticated practical discussions of emerging ethical issues. The codes of ethics of national organizations such as the American Institute of Architects (AIA), the Industrial Designers Society of America (IDSA), and the American Institute of Graphic Arts (AIGA) and their international counterparts have evolved gradually. They began with issues of competence, integrity, and professionalism, emphasizing ethical standards in technical practice and education, in business matters, and in compliance with laws and regulatory codes associated with safety. They expanded to

include intellectual property rights and the general area of service in the public interest, such as preservation of the cultural trust and sustainability of the human community. The evolution corresponds to the successive ethical dimensions of design.

### Product Integrity

A third ethical dimension, product integrity, arises from the nature of the products created through the art of design. Product integrity should be distinguished from the end purpose or worth of products. It is the synthesis of form and materials by which one judges a product to be well or poorly designed. There are specific ethical issues of product integrity for each kind of design (engineering, communication, industrial, and architectural design), but in general the issues concern safety and reliability, compliance with laws and regulatory codes, sustainability in its various aspects, and service to the public good. Products are created to serve human beings in their various activities and pursuits. Anything that directly or indirectly harms a human being or harms someone or something for which a human being is responsible presents a serious problem of product integrity requiring both technical and ethical consideration.

Because of the complex nature of human-made products, it is important to distinguish three elements of form that identify design issues as well as their associated ethical considerations. These elements concern what is *useful*, *usable*, and *desirable* in all products. Their successful integration is one of the fundamental challenges of design thinking.

1. **Structural Integrity of Form.** This element involves technological reasoning that ensures the proper performance of a product so that it is useful in supporting an activity. In some products technological reasoning means employing mechanical and electrical principles in an efficient and safe relationship. In computer software the reasoning follows logical principles and best practices of program layout in order to create efficient and reliable computation and, increasingly, security of information. In graphic or communication design, the reasoning of form and content follows more general principles for the presentation of information and arguments about the subject that the designer seeks to communicate. Honesty and truth become serious ethical issues when communication design is employed in marketing, packaging, and instructional materials. Structural integrity of the physical form and of information is the frontline of safety and reliability.

2. Usability of Form. This element requires product features such as operating controls, control surfaces, information displays, seats, doors, and panels that allow human beings to access and operate a product—or deliberately prevent dangerous access or operation of a product—and maintain it in a safe and reliable condition. In design these are sometimes called *affordances*, because they afford a human being with access to the form in the way that doors provide access to a building. By analogy one can easily see the extension of the usability features of mechanical products into software and even products of visual and verbal communication. Software is accessed by means of a user interface, meaning all of the features presented on a computer screen that allow a human being to operate and control the software. In graphics and communication design, the size of fonts, the layout of information, and similar matters allow a person to understand what is being communicated. It is more than a technical matter when, for example, bus signs and timetables are printed in font sizes that are too small for elders to read. Unfortunately usability is often seen only in terms of the immediate use or functioning of a product. In reality usability issues affect the entire lifecycle of products. Can the product be produced efficiently and safely, can it be operated effectively, can it be maintained, and can it be disassembled and disposed of or recycled safely? These are technical issues with significant ethical implications for design thinking.

3. Aesthetics of Form. This element is sometimes a puzzling subject for scientists and engineers, but for the designer it is the final element in the creation of a complete product. The aesthetic element of form makes a product desirable to possess and use. Many products that are otherwise useful and even usable are incomplete and fail to be integrated into the everyday lives of human beings because the form is not aesthetically pleasing. This is a source of confusion and consternation to inventors and developers and sometimes to policy makers who seek to influence individual and social behavior through the adoption of certain products—for example, seat belts in automobiles or products that support recycling or sustainability.

Part of the misunderstanding of aesthetics rests with the term itself. In its original and broadest meaning, aesthetics refers to the pleasurable or painful sensations that human beings feel through their senses. In this meaning all products have an aesthetic element, by

accident or by design. The sound of a door closing, the texture of a control surface, the visual appearance of information in a software interface, the smell of plastics and metals, the taste of medicine: All are examples of the aesthetic element of form. Over time aesthetics has taken on a second, more restricted meaning as the study and theory of beauty. The psychological, social, cultural, and philosophical significance of aesthetics is a complex and profound subject. One way to understand the place of aesthetics in design is how it leads a human being to identify with a product. Identification with a product—to imagine a product as a desirable part of one's lifestyle and a valuable extension of the user into the world—shows how important the aesthetic element of form may be in design thinking.

The complexity of aesthetics points toward several areas of ethical issues that the designer must consider. Aesthetics plays a subtle and important role in supporting the usability of products and, hence contributes to safety and accessibility. Aesthetics also concerns the social, cultural, and even political value placed on sensations of pleasure and pain. Economic necessity plays an important role in the degree of luxury that products provide, but local community values also influence what is acceptable in making products pleasurable. Adapting products to local values is an ethical consideration for the designer and the designer's client. It is closely related to the issue of *appropriate technology*, which concerns selecting the kind of technology for a product that is suited to the economic, environmental, and social or cultural conditions of people.

There are further ethical issues surrounding beauty: what it is, its value, its use as a political instrument to affect the development of society and culture, helping to achieve the goals of one or another cultural agenda. For some there is aesthetic delight in the intelligent working of a product such as a mechanical or electronic device. The beauty of an idea realized in concrete form may itself be captivating. However this and other forms of beauty often flow from individual delight into social and political movements, taking on further ethical and moral significance. For example the so-called *modernists* of twentieth-century design believed that creating a certain kind of formal beauty in their products would have a direct effect in improving the values and behavior of people. The *good design* movement of the 1950s is a specific example. In contrast the so-called *post-modernists* of the 1980s and early 1990s used other concepts of beauty and even anti-beauty to express cultural diversity and encourage alternative aesthetic values. In both cases the aesthetics of design was associated with moral values.

In addition to ethics of product form, there are ethical issues involved in the materials employed in bringing a form to reality. Traditional and new materials present hazards that the designer has a responsibility to understand and respect. The selection of proper materials literally supports structural integrity in engineering, industrial design, and architecture. There are also ethical implications when designers make excessive use of materials or of particularly precious materials, because this may be regarded as a waste of natural resources. Similarly there are ethical issues surrounding the long-term impact of materials on human beings and on the natural environment. Developments in science and technology are a source of the problem of sustainability, and play a role in society's efforts to create sustainable communities. Many people believe that the designer and the designer's client have a newly recognized responsibility for creating products that support the goal of sustainability.

The development of science and technology has had profound impact on products and product forms, an influence that will only grow through the development of designer materials by means of biotechnology, nanotechnology, and other methods. Perhaps most importantly it has broadened the understanding of what a product of design is. At the beginning of the twentieth century, a product was regarded simply as a tangible, physical artifact, whether a consumer good or industrial machinery or medical and scientific instruments or a building. At the beginning of the twenty-first century, these product categories remain but have been the object of much elaboration. The categories of the physical have also increased to include chemical and biological products as physical artifacts that result from design thinking. Furthermore people recognize that information products, visual communications, services and processes, and even organizations are products of design thinking, subject to forethought and requiring careful, responsible decision making in their creation.

The broadening of the general understanding of what a product is comes from several factors associated with the development of science and technology. One is the concept of a system, which depends on a rational ordering or relationship of parts to achieve some goal. Rationalization and standardization now play a fundamental role in design and product development, supporting mass production and mass communication. Another factor is the development of new materials and the machines to process and shape them. Closely related to both of these factors is the development of digital technology, with scientific and industrial applications as well as applications suited to the daily lives of human

beings through personal devices as well as access to information and communication through the internet. Among the many factors that have changed the understanding of what a product is, perhaps the most important, from an ethical perspective, is assessment of the consequences of the product's creation on the lives of individuals, society, and the natural world. This has come through the application of the physical and biological sciences, tracing the impact of products far beyond the marketplace (Winner 1986). It has also come through the development and application of the psychological and social sciences. Base-line efforts in these sciences during the twentieth century have resulted in the gathering of information that allows informed discussion of social policy and the philosophical implications of science, technology, and design.

### **Ethical Standards and the Ultimate Purpose of Design**

A fourth ethical dimension of design arises from the service nature of the design arts, and presents some of the most difficult ethical issues designers face. The design arts are fundamentally a practical service to human beings in the accomplishment of individual and collective purposes. That is, the end purpose of design is to help other people accomplish their own purposes. This is where the personal character and morality of the individual designer, as well as the other ethical dimensions of design, are inevitably placed in a larger social, political, religious, and philosophical context. What is the moral significance of the particular purposes that designers are asked to serve? What is the moral worth of particular products that seek to achieve these purposes? What consequences will products have for individuals, society, and the natural environment in the short and long terms? What ethical standards can designers employ in making decisions about the proper use of design?

Ethical guidance in these matters comes from several sources including personal morality, professional organizations, the institutions of government, religious teachings, and philosophy. The potential for moral conflicts and dilemmas is so great that in this fourth ethical dimension the ethical problems of design are essentially the same as the ethical problems of citizenship and practical living in general. It is difficult to distinguish design from politics, political science, and political philosophy. This reaffirms Aristotle's treatment of ethics and politics: They do not address different subject matters but the same subject matter from different perspectives.

Nonetheless there are grounds for continuing to treat design ethics as a distinct problem with a distinct perspective on individual and social life. For example the natural and social sciences study what already exists in the world, but design seeks to create what is possible and does not yet exist—design is concerned with invention and innovation and, generally, with matters that may be other than they are through human action. This is the basis for Herbert A. Simon's treatment of design as *the sciences of the artificial*. Whether one refers to design as an art or a science, most designers would agree with Simon that design is a systematic discipline involving choices that are "aimed at changing existing situations into preferred ones" (Simon 1981, p. 129). One implication has special significance for ethics. Following other philosophers, Caroline Whitbeck has observed that the traditional discourse of ethics tends to emphasize making moral judgments—the critique or evaluation of actions already taken. In contrast she argues that ethics may be considered from the perspective of the moral agent seeking to devise ethical courses of action (Whitbeck 1998). This argument—that ethics itself is a form of designing—is directed primarily toward the ethics of professional conduct, how designers relate to supervisors and clients, and how designers or any one else may respond creatively and responsibly to ethical and moral problems in their work.

The argument may be expanded in a direction that many designers would acknowledge: Not only is ethics a form of designing, but designing is a form of ethics. One aspect of the designer's creativity and responsibility is to devise ethical courses of action that navigate the moral dilemmas of practical life. This happens in the normal course of the design process when, for example, the designer studies the client's brief or charge and finds it inadequate or inappropriate for solving the problem that may be the real concern of the client. This leads to a rethinking and recasting of the initial purpose set by the client, often reached through negotiation over the nature of the product to be created.

In a broader sense, moral issues are addressed when the designer employs clear and well-articulated ethical standards in making decisions about the proper use of design in any particular situation. There is no single set of ethical standards in the field of design; the pluralism of the human community in general is mirrored in the design community in particular. However there are distinct ethical positions in the discussions of designers, and they bear a recognizable relationship to positions in the tradition of formal ethical theory. Two of these positions point toward a natural foundation of design ethics, and two others point

toward conventional and arbitrary foundations established by human beings.

Designers whose ethical position is grounded on a natural foundation typically argue that the products of design should be *good*, in the sense that they affirm the proper place of human beings in the spiritual and natural order of the world. This position finds its strongest premises in spiritual teachings and some forms of philosophy (Nelson 1957). Alternatively they argue that products should be *appropriate and just*, in the sense that they are appropriate for human nature and the physical and cultural environment within which people live, and that they support fair and equitable relationships among all human beings. This position finds its strongest premises in human dignity and the development of human rights, encompassing civil and political rights, economic rights, and cultural rights (Buchanan 2001).

Designers whose ethical position is grounded on conventional and arbitrary foundations typically argue that products should satisfy the *needs and desires of human beings* within acceptable constraints. The constraints at issue are the simply conventional expectations of a community and what is considered normal in the physical, psychological, and social condition of human beings in a particular time and place. The strongest premises are drawn from the study of manners, taste, and prevailing laws, and by scientific study of what is normal and abnormal in the body and mind. Alternatively various designers argue that products are merely *instrumental*, in the sense that they are useful in enabling human beings to achieve any of their wants and desires, limited only by the power of individuals and the state to curb willfully destructive actions and turn creativity in acceptable directions. This position draws its strongest premises from the concept of the *social contract*, upon which it is argued that any state is created.

As observed earlier, the development of scientific knowledge and technology has had a profound effect on human understanding of the nature and consequences of the products created by the design arts, deepening consciousness of the ethical dimensions of design. Additionally the development of design thinking has made important contributions to discussions of science, technology, and ethics. Nowhere is this more evident than in the central concern of design to humanize technology and place the advancement of scientific knowledge in the context of practical impact on human life. The contributions are typically made through the concrete expression of design thinking in real products that influence daily life rather than through writing about design. As designers have ventured out from traditional

products and product forms, their explorations and experiments in creating new products have provided the concrete cases that focus discussion of ethical issues and the limits of science and technology. In many instances, the design arts have been deliberately employed to provoke critical debate in the general public about the place of science and technology in community life.

### Toward an Ethical History of Design

An ethical history of design would present the origins and development of design from the perspective of designers as moral agents, tracing the successive issues and ethical dimensions of design as they have arisen through individual and collective action. Such a history has not yet been written or even attempted because the formal study of ethics has received little attention among designers and scholars of design studies. Indeed there are grounds for arguing that the formal study of ethics in the philosophy of design began no earlier than the mid-1990s, with the publication of articles by authors such as Alain Findelli and Carl Mitcham. Mitcham's "Ethics into Design" draws from philosophical discussions of ethics, the philosophy of technology, and the development of ethics in engineering. He argues that the two traditions of design in the twentieth century—design as art and aesthetic sensitivity and design as science and logical process—"must be complemented by the introduction of ethics into design, in order to contribute to the development of a genuinely comprehensive philosophy of design" (Mitcham 1995, p. 174). Mitcham's essay is important because it gives disciplined philosophical focus to the many discussions of ethics, politics, and morality that have shaped design since the beginning of the twentieth century.

Several such discussions have made important contributions in opening up new lines of thinking. In the late-nineteenth century, the political writings of William Morris (1834–1896) introduced ideas about socialism that helped to shape the arts and crafts movement and questioned the value of industrialization. The documents of the Bauhaus in Germany—for example, the essays included in *Scope of Total Architecture* (1962) by Walter Gropius (1883–1969)—helped to set the moral agenda of modernism. Artist Laszlo Moholy-Nagy's (1895–1946) *Vision in Motion* (1947) developed these ideas further and contributed to a form of humanism in design. Work at the Ulm school of design, particularly under the influence of the *Frankfurt School* of social theory, showed a struggle between sociopolitical questioning and the introduction of scientific methods into the

design process. The writings of George Nelson (1908–1986) elevated discussions of *good design* to a higher moral concern for the responsibilities of the designer and true good in products. Kenji Ekuan's *Aesthetics of the Japanese Lunchbox* (1998) offered a Buddhist perspective on issues of ethics and morality in product design. Victor Papanek's *Design for the Real World: Human Ecology and Social Change* (1984) and *The Green Imperative* (1995) introduced the ideas of appropriate technology and sustainability to design thinking. In *Cradle to Cradle* (2002), William McDonough and Michael Braungart extend the theory of sustainability in a controversial discussion of industrial design and architecture. Beginning in 1982, the journal *Design Issues: History, Criticism, Theory* provided a venue for some of the most important discussions of design ethics. Authors such as Alain Findelli, Richard Buchanan, Ezio Manzini, Tony Fry, and Victor Margolin addressed practical as well as philosophical issues surrounding design ethics, and their work poses a challenge for a new generation of students of design. The continuing pace of scientific and technological development and the growing sophistication of reflections on design, supported by new doctoral programs and research in many universities, suggest that design ethics will become a progressively more important subject.

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SEE ALSO *Architectural Ethics; Building Codes; Building Destruction and Collapse; Engineering Design Ethics; Engineering Ethics; Participatory Design.*

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