

Query Formation



brand promise becomes brand perception through the design and consumption of experience

is the audience expected to achieve by brand of a brand source

an individual's expectations, values, goals and needs shape his or her perception of experience e.g., in blind taste tests, Pepsi beat Coke, but in tests labeling the brands, Coke beat Pepsi

experience

shapes

expectations

are held by

individuals

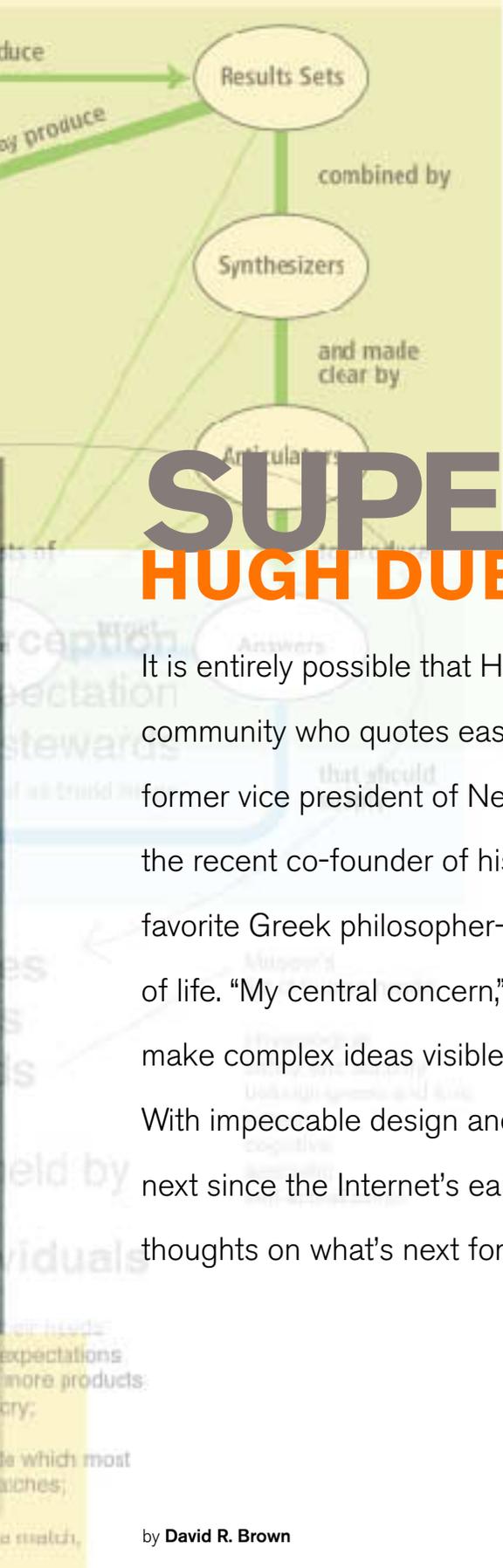
direct experience
considering a purchase
visiting a point of sale
owning a product
using the product

by frustrating the customer
or by satisfying the customer
or by delighting the customer

Dubberly Design Office helps other companies develop new Internet applications and improve existing ones. It focuses on design planning, interaction design and information architecture, and involves developing models and diagrams describing the operation of applications and the contexts of their use.

Photo: Clarke Robinson

- what friends say
- what experts say
- what competitors say
- what the stewards say
e.g. arts, PR
- how others use the product
e.g. buy, display, etc.



SUPERMODELER

HUGH DUBBERLY

It is entirely possible that Hugh Dubberly is one of the very few people in the design community who quotes easily and unself-consciously from Plato's Dialogues. As the former vice president of Netscape's Web Design and Site Integration Department and the recent co-founder of his own eponymous design consulting firm, Dubberly—like his favorite Greek philosopher—is a professional shiner of light into the murk and ambiguity of life. "My central concern," he says, "is to figure out how design can be employed to make complex ideas visible and understandable so that we can make better products." With impeccable design and digital pedigrees, Dubberly has been on the cusp of what's next since the Internet's earliest days. So it's worthwhile paying attention to his present thoughts on what's next for the business of design—and the design of business.

by **David R. Brown**

Like iron filings arrayed around a magnet, Dubberly's thoughts are organized around two poles. The first is that design and designers are now utterly central to big, important and fast-growing companies. The second is that designers now have an opportunity and responsibility that meld into and perhaps even herald a new field of practice.

The kind of participation he sees, though, goes well beyond what most people think of when they think of "design," and especially what most designers and their employers or clients think about when they think about design. Design, he believes, needs now to be more about making complex, abstract ideas visible than about creating objects. And a way to do that is with models.

At a recent talk at a Design Management Institute conference in Pasadena, Dubberly began introducing his ideas on concept modeling by summoning the hallowed spirits of Charles and Ray Eames, America's most renowned 20th-century designers. Rather than featuring the couple's organic furniture or kit-of-parts architecture, Dubberly reprised a diagram of what the Eameses termed "the area of appropriate practice" for design.

Four organic blobs intersect in the Eames model, each representing a different aspect of design. One blob represents the interest and concern of the design office; another, the genuine interest of the client; a third, the concerns of society as a whole; and the fourth stands for the interests and concerns of the individual designer. Where

Revolution cleaved apart the planning of something and the making of it, and "design," as most of us know it, was born. Still, until the Internet-propelled present, the products designers were involved in were basically knowable by one person. Of course, as technology pushed things forward, products grew increasingly complex, but not so complex that they exceeded at least the intellectual or theoretical grasp of any one person.

In the Internet age, things have grown exponentially more complicated because the products in question are intangible and can never be seen at once by any one person. While there may be a finite number of components to a website, notes Dubberly, "there is a virtually infinite number of combinations, and no one customer ever does quite the same thing as another. And these things are never finished; they just keep growing and changing and being constantly updated on the fly." It becomes quickly apparent how important model making is in such an endlessly recombinant context. "A model is what you get when you put it all into one view to understand what's going on," Dubberly explains. "It can be a great tool for managing the teams of people necessary to make these new products."

In Dubberly's hands, even the most unwieldy ideas become understandable. For the American Center for Design's "Design for the Internet" conference in 1996, for instance, Dubberly modeled the Internet. Aesthetically

austere, tightly organized and implacable in the development of its visual argument, the model became a poster

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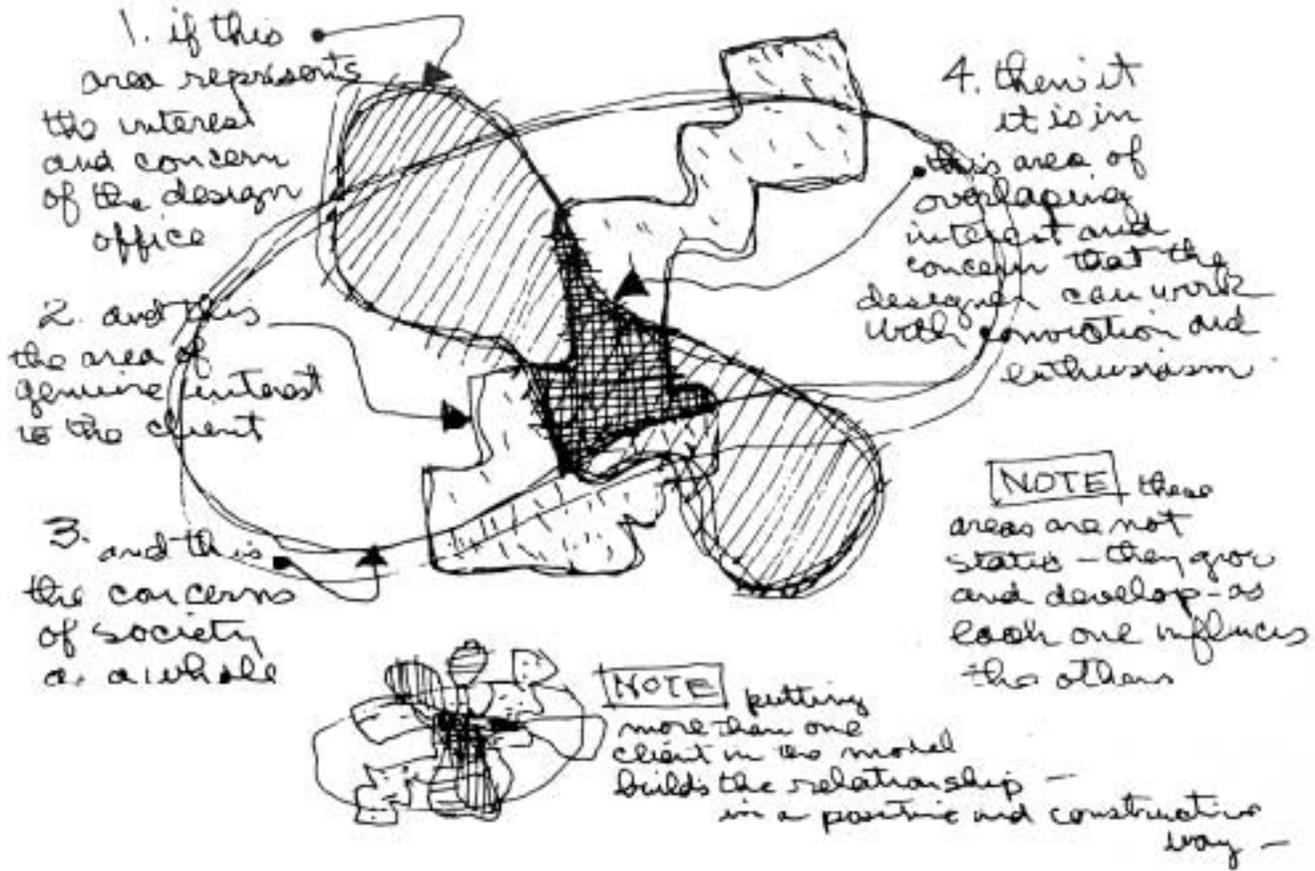
all four overlap delineates both an idealized representation of design practice and an explicit form of commitment. The model clearly and unequivocally tells clients, employees and collaborators how the Eameses approached the design process. Interestingly enough, the areas that do not overlap tell as much as those that do.

Dubberly's point was that this deceptively simple drawing made a series of abstract and conceptual beliefs plainly visible and understandable. Thus it was as much "design" as any chair, film, book or exhibition, and, in Dubberly's opinion, maybe more. Moreover, the ability designers inherently have—to make the intangible tangible, the abstract concrete and the inchoate understandable—is what he believes will define design and its possibilities in the still-dawning age of the Internet.

Dubberly notes that for centuries, the designing part of building or making something was not separate from the actual construction process. The Industrial

and then an icon. This was a new face for design and a new way for design to affect not only people's understanding but also the complex business and technological processes of life on the Web.

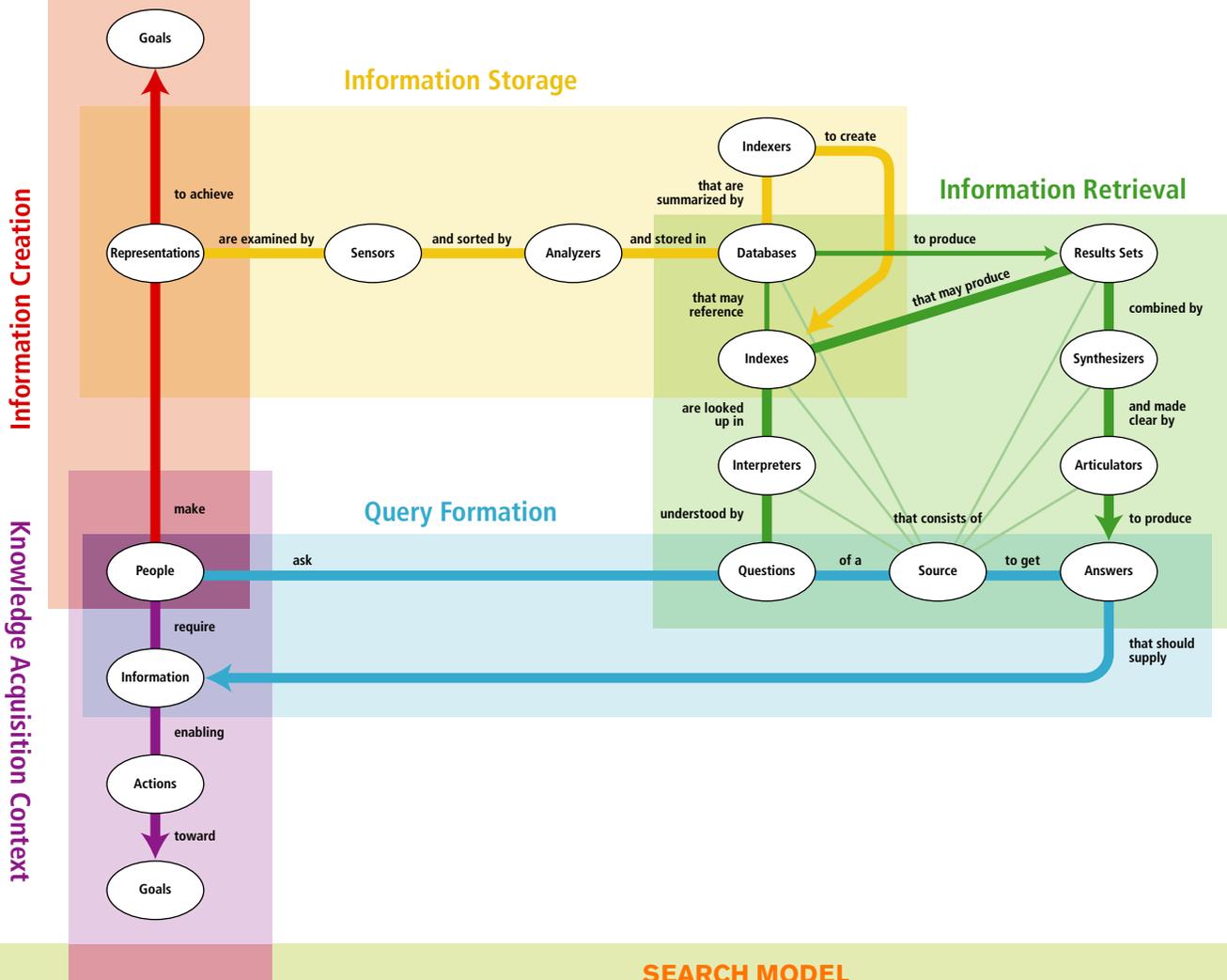
The practice of design, of course, has always involved making models. The education of most graphic designers includes a steady diet of model making, whether the model is of an individual letterform or a complicated publication. A sketch is a rough, gestural model. A mock-up is a model. A "comp," or comprehensive, is a model. These kinds of models serve two purposes. First, they enable the designer to show someone else what the idea is. Second, they give the designer a tangible component in the creative process, a way to enable an interior dialogue about turning an idea into visible form. But important as they are, models have rarely been thought of by designers as their principal product. Yet that is precisely what Dubberly is now suggesting.



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THE EAMES DIAGRAM

When American designers Charles and Ray Eames were asked to contribute a room to the Musée des Arts Décoratifs' 1969 exhibition "Qu'est-ce que le design?" (What Is Design?), they responded in part with a conceptual diagram that they believed delineated the domain of the designer's interest and concern. By rendering these complex relationships in such a simple and visible form, the Eameses gave testament to the power of modeling.



SEARCH MODEL

Netscape designer Matt Leacock created this model of search technologies and their uses. (A simplified version appears above; the expanded version can be found at gain.aiga.org.) Search services are a major source of revenue for companies like Netscape. Seeking to improve its search service, Netscape acquired Newhoo, a small start-up with a new approach to search. Netscape integrated Newhoo's engineers into its search development team with the goal of integrating Newhoo's technology into Netscape's service.

Leacock was assigned the task of working with the search team to redesign the interface. Initially, the team was reluctant to include a designer in its work. He developed the search model as the first phase of the redesign project, and used the process of making the model as a way to learn about the underlying technology and as a way to get to know the development team better.

Leacock gathered information for the model by interviewing each member of the team. He refined it by showing successive sketches to the developers and incorporating their feedback. The interviews and subsequent discussions about Leacock's evolving sketches for the model gave him a good understanding of the subject. The process of making the model changed Leacock's relation to the development team. He became a highly regarded member. The model helped all the team members share their knowledge and led to a common understanding of the subject. The model also proved useful as a tool for educating new team members.

“When we design things more complex than single objects—systems, sets of elements, interactions and pathways—we need a new approach,” Dubberly says. “Mock-ups aren’t quite enough. Even mock-ups of every permutation and possibility of a system won’t quite work. It’s impractical and expensive, but more importantly, it would not capture the rules of the system. And the rules—the explanation of how the elements of a system should and should not work together—are at least as important as the definition of the elements themselves.”

There is a new idea here, he argues. In the past, design has been mostly about the form of things and, to a limited degree, their function. In the Internet world, the designer does not have complete control over the ultimate form—the user’s experience—and this condition pushes the design process at least as much toward defining the rules within a system as toward creating the elements that constitute it. Making mock-ups of elements is a well-known and understood activity. But making models of rules is new.

“We need new tools,” Dubberly concludes. “We need models for planning systems, for thinking about the elements and the rules together, for thinking about how systems integrate with other systems embedded in systems of yet more systems. We need models not just of what appears on computer screens, not just of pathways, not just of interactions. We now also need models of goals and contexts. We need models of abstract ideas.”

A recent model merits mention. As Dubberly’s former employer Netscape pursued a strategy of adding

to its own Internet search service, Dubberly’s immediate and logical first step was to create a visible, accessible model of the search activity. Dubberly assigned the project to Matt Leacock, a user-experience designer who worked in his group. Leacock recalls:

“In order to supplement my own knowledge of the system, I asked other members of the product development team to explain what went on during a search. No single team member had a complete picture of the way the system worked, however, and each member’s impressions of the system were shaped by the areas of the product that he or she worked on. In addition, the relative significance of each subsystem was skewed by each member. I soon began to realize that the whole team would have to share some understanding of the system if we were to all work together toward the same goals. To complicate things further, the team, like the technolo-

gies, underwent changes as well. As people came and went from other product teams and other companies, parts of the collective knowledge of the systems went with them. What was needed was some sort of ‘big picture’ that would not only serve to educate me and the whole group, [but also] serve as a repository of knowledge, capturing and recording the structure of the system... [and] provid[ing] a framework in which to view the many new developments occurring in the field.”

Leacock began the modeling project by conducting a series of one-on-one interviews. The information gathered was then modeled visually, returned to the interviewee for vetting and added to the growing pile of models of the many subsystems. Netscape considered everything—from settings on the query page, to descriptions of data sources, databases and directories and layout engines, to results-page templates, view options, relevancy ranking technologies and feedback loops. At length the time came to assemble them, but something was missing—an armature for the model, an organizing concept. Dubberly and his colleague Paul Pangaro helped.

“What the concept map needed was an organizing principle,” Leacock says. “Without it, future readers would be as confused and intimidated by the map as some of the team members... [and it would prove] difficult if not impossible to force [all the elements] into a hierarchical structure. Pangaro noted that people do not typically

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search for information just for the sake of the search, but rather that they searched for information that enabled actions toward goals.” This epiphany led to a simple proposition that became the key to the model: “People make Queries to get Results.” The three resulting axes—the user, his/her question and the results obtained—provided the essential organizing principle.

Dubberly is no stranger to epiphanies; in fact, they seem to happen wherever he goes. Two of the most mind-expanding occurred when he was at Apple in the late 1980s. “The first was John Warnock doing a demo of a product code-named Picasso [later to become Illustrator],” Dubberly remembers. “He drew a line on the computer screen, made a curve, changed the curve—easily. I had learned how to do it with code, laboriously, but this was amazing. The second was a chance meeting with Bill Atkinson, who showed me a computer program that

could click through a series of photographs. He just clicked and a new image appeared, and then another and another, creating a sequence of images connected together. He called it Wildcard [later to be known as Hypercard] and we had never before seen a computer do anything like that outside the MIT Media Lab.”

An environment like Apple in the early '90s—crackling with ideas and innovation—was perfect for a person like Dubberly, who, even with his growing knowledge and expertise, always had more questions than answers and was always peering into the future. Dubberly went on to manage all creative services at Apple and, for 18 months while at Apple, he also served at Art Center College of Design in Pasadena as the first and founding chairman of the department then known as computer graphics. Art Center, because of its involvement in industrial design and particularly automotive design, had been an early adopter of the 3-D technologies of Alias and Silicon Graphics. Dubberly brought his vision of the computer as both communications tool and new medium and contributed to the development of an entire movement within the college toward accepting the new technologies in equal partnership with the traditional methods of designing and art-making.

One of the most visible projects Dubberly did at Apple was a techno-forecast film called “Knowledge Navigator.” Then-CEO John Sculley had been invited to deliver a keynote speech at a conference on technology and

ested in what the publishing industry would eventually look like on the Internet and was recruited to join the Times Mirror Corporation as director of interface design, a function included in the company’s strategic planning apparatus. A rather dramatic financial restructuring made Dubberly’s stay there short, but his interests in publishing, his background and track record in corporate life and his ever-present view forward made him a natural and logical fit for Netscape in 1995. He was employee number 302 at Netscape and one of 20 people who started work the day he did. Netscape and the Internet have come a long way since then, propelled in part by the design thinking, theorizing and practice of Hugh Dubberly.

The rise of computers and their interconnectedness in networks involves designers in the making of products much more complex than anything made in the past. The future, Dubberly believes, is not a system, or a set of systems, but systems of systems that will have to be planned and built by teams. He also believes that it is not possible to separate the “design” component of one of these products and consider it independent of the whole. To do so is to talk only about what it looks like. This means that teams will also design these complex products. Model building—which can and should be the province of the designer—forces the planning process to be explicit and, more important, visible. And when it’s visible, you can more easily share it and improve it.

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education. Dubberly and his colleague Doris Mitch pitched two ideas to Sculley: one they really liked and another that was “sort of a throwaway,” as Dubberly now muses. The latter was a fanciful answer to the questions, What might a computer look like in the future, how might it behave and what would it be good for? This immediately intrigued Sculley. In a series of vignettes, the resulting film portrays something that is now totally familiar, but at the time seemed blue-sky: a wireless device that has access to any information in the world at any time and is at home on the desktop, in a briefcase or on a nightstand. One could hardly have designed better credentials as a prescient forecaster of digital technology in the new millennium.

When the first faint stirrings of the Internet were being felt, Apple was going through its most public crisis and Dubberly decided to make a move that was consistent both with his interests and training as a graphic designer and with his consistent focus on the future. He was inter-

When asked if he had any idea of where his distinct approach to design problem-solving might have come from, Dubberly thinks for a moment. “If I had a principle to live by it would be, Make knowable those things that are knowable,” he replies. “But that sounds self-important. Perhaps the real answer is that the parents show in the child. My mother was a chemical engineer. My father was an engineer who designed electricity-generating stations. He would bring home sheaf after sheaf of blueprints. I used to turn them over and draw on the other side, but perhaps something on the business side of those plans made a lasting impression.”

Hugh Dubberly approaches design with the engineer’s classic suspicion of form. That has suited him well in designing things that are intangible and has led him to look—in true philosopher fashion—for new ways to approach design and the truth he’s certain it can contain and make visible. 

Author biography

Writer and consultant **David R. Brown** is the founding editor of *Gain*. Previously he was the president of Art Center College of Design, vice president of Champion International Corporation and, from 1980 to 1983, president of AIGA.



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