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Introduction

Design, recognized as a professional practice, an economic force, and a potent form of cultural expression, is a complex phenomenon. To cultivate an appreciation of the rich human complexity of design—to see the thing whole—is one of the goals of *Design Issues*. Paradoxically, one of the primary strategies for achieving this involves pulling design's "wholeness" apart and carefully examining its different aspects and manifestations article by article, issue by issue. The editors are convinced that through this approach of articulating the parts we will come to a renewed appreciation of the whole. Rather than fixing upon a single vision of design and feeding our readers a steady diet of the same thing, *Design Issues* challenges readers to explore along with the journal's editors the intricate relationships between ideas and experiences that inform each issue.

Two articles in this issue examine key books in twentieth century design literature. In "A Natural History of a Disembodied Eye: The Structure of Gyorgy Kepes's *Language of Vision*" Michael Golec takes a fresh look at what he reminds us was one of the most important books of its era (originally published in 1944) to deal with the relationship between sense perception and modern art and design. Golec draws our attention to the problematic aspects of Kepes's quest for "a generative and universal structure of language." A similar strategy involving the close reading of a seminal text shapes Vincent Michael's article "Reyner Banham: Signs and Designs in the Time Without Style." In his analysis of Banham's 1960 book *Theory and Design in the First Machine Age*, Michael argues that Banham's revisionist account of the Modern Movement sought to reanimate rather than reject the ideas of early modernist designers. Color and material—constituent elements of design—serve as the point of departure for two other essays included here. In "Color and Consumption" Stephen Eskilson suggests that the story of color has been inadequately treated in most histories of modern design. To appreciate what one of his sources labeled the "chromatic revolution" of the early twentieth century, Eskilson argues we need to see this revolution in terms of the interaction among various discrete areas of design activity and knowledge such as theater design, fine arts, and retail marketing. Dennis Doordan uses his book review of Nancy Moore Bess's *Bamboo in Japan* to suggest some of the issues designers need to consider in any discussion of materials and their impact on design form. In "Product Development and Changing Cultural Landscapes—Is Our Future in Snowboarding?"

Tanja Kotro and Mika Pantzar employ the concept of cultural landscapes to explore the changing role of designers in today's constantly evolving marketplace. The authors are interested in situations in which continuous product renewal often means the original appeal behind products changes. Consumers, they argue, increasingly act as co-producers rather than passive consumers of products and designers, therefore, must recognize their own evolving role in the product development cycle as interpreters of cultural landscapes as well as technically adept inventors. Language, rather than landscape, serves as Fiona Doloughan's subject. In "The Language of Reflective Practice in Art and Design" she suggests that the kind of language needed to articulate the complex and multi-layered way of thinking characteristics of design will itself be "multi-layered and metaphorical ...rather than transparent and one-dimensional."

Finally, since its inception, *Design Issues* has served as a vehicle for conveying contemporary programs, manifestos and critical documents to the design community. This issue includes The ICOGRADA Design Education Manifesto presented as the ICOGRADA Congress in Seoul in October, 2000. The text of the manifesto is supplemented by Sharon Helmer Poggenpohl's and San-Soo Ahn's introduction that provides a fascinating commentary on manifestos in general and the drafting of this particular document.

Richard Buchanan
Dennis Doordan
Victor Margolin

Gyorgy Kepes 1906–2001

Gyorgy Kepes was an important figure for designers. He taught an innovative course in visual communication at the New Bauhaus in Chicago and wrote a book, *Language of Vision,* which helped move graphic design in America towards a more conceptual and theoretical practice. At the Massachusetts Institute of Technology, Kepes was a pioneer in bringing together artists and scientists to seek common ground and the the series of books he edited, *Vision + Value,* included writings by some of the leading thinkers in the arts, science, and the humanities. He will be missed.

A Natural History of a Disembodied Eye: The Structure of Gyorgy Kepes's *Language of Vision* [1]

Michael Golec

I. Introduction

In his book-length study on reforms in art education (1955), Frederick Logan examined three contributions to an evolving pedagogy in the United States. He praised the innovative research of Gyorgy Kepes, Hoyt Sherman, and Henry Schaeffer-Simmern on affective perception, and the role their research played in the illumination of modernist type art. Of the three educators, it was Kepes's *Language of Vision* that had the greatest impact on art education. According to Logan, it was the most important book of the 1940s and 1950s on the problems of sense perception and expression in contemporary art and design.[2] "Art teachers by the thousand," wrote Logan, "have through Kepes enriched the scope of their teaching by a larger understanding of what the contemporary artists are doing." [3]

Apart from Logan's triadic organization of influence, *Language of Vision* was a refreshing alternative to the largely vocationally motivated design and advertising primers common to the commercial art field in the United States.[4] Kepes's book inveighed against a vocational type education in which students were required to study problems exclusively lifted from the commercial sector. *Language of Vision* differed radically from such texts; it allied the commercial sector with modernist art, science, philosophy, and psychology. *Language of Vision* was replete with images gathered from a myriad of sources—European modernists Piet Mondarin and Pablo Picasso; American design professionals, Paul Rand and Lester Beall; Bauhaus alumni Herbert Bayer and László Moholy-Nagy; and an ample supply of student projects drawn from Kepes's course at the New Bauhaus in Chicago.

The book's amalgamation of diverse material may very well explain its appeal. No doubt, readers took for granted that Kepes intended his collection of visual source material to clarify particular points relayed from his text, thereby elucidating his theory of vision as inevitably played out in modernist art and design. This is correct, as far as it goes, which is not very far, or, in a way, not consciously intended by the author. Kepes organized his visual material in such a manner that, for the most part, the presence of particular examples of art and design appear in a random fashion. The fact that he failed

1 I would like to thank Victor Margolin for his penetrating comments and criticisms of an early draft of this paper; Paul Gehl for his editorial expertise on an edited version of this paper for *InForm*; Michael Shreyach for his wonderfully insightful interrogatories; Aron Vinegar for lending me an ear; and finally, Anne Simonson for inviting me to San Jose State University to present a version of this paper.

2 Frederick M. Logan, *Growth of Art in American Schools* (New York: Harper and Row, 1955), 255–257.

3 Ibid., 257.

4 See, for example, W. A. Dwiggins, *Layout in Advertising* (New York and London: Harper and Brothers, 1928); Edward D. Berry, *Fundamentals of Typographic Art: A Discussion of Page Arrangement and Its Elemental Factors* (Chicago: E. D. Berry, 1930); Douglas C. McMurtrie, *Examples of Advertising, Typography and Layout* (Chicago: Private, 1934); and Edwin H. Stuart, *Typography, Layout, & Advertising* (Pittsburgh: E. H. Stuart, 1947).

to explain, or comment on, the majority of the images exacerbates this randomness. The book's intention—to educate artists and designers—is frustrated with every turn of a page since any claim to a unified whole is undermined by this organizational disturbance.

Such a disturbance has implications for design as it has been practiced professionally in the United States since the inaugural publication of *Language of Vision*. If I take Logan at his word, that Kepes's book dominated art education in the United States immediately after World War II, then any claim that design may have on problem solving, on creating unified fields of coherence, on implementing comprehensive projects toward some greater good is damaged by the very disruption that undermines Kepes's project of unification through vision. This paper is an analysis of Kepes's *Language of Vision*[5]—the foundations of, the deployment of, and the implications of what I take to be his natural history of vision.

Kepes founded his natural history on a linguistic model of structural coherence (hence "language" of vision) that ultimately cut vision from its corporeal mooring; that is, he regarded vision as being apart from practical and physical activities. The specious unity of *Language of Vision*'s thesis masked the book's disjunctive character instantiated by its organization.[6] While a thorough study of the context in which Kepes positioned his book remains to be written, I will forego such a history. Placing Kepes within postwar design studies would produce a snapshot of a moment, no doubt important, but such a contextualization is not appropriate to my task. Rather, I intend to work my way into *Language of Vision*, digging deep into its core to unearth a potent history—Cartesian, Humanist, Realist, Positivist—that lies within its pages and its pronouncements on visual culture.

In any case, an examination of *Language of Vision*'s latent structure—a construction of a "language of vision" that negated vision in a material sense, that promised an idealized reality, and that was to be embodied in a "positive popular art," advertising—requires that I first briefly discuss the literature on physiology and the psychology cited in Kepes's book, namely the influence of Hermann von Helmholtz's alignment of mental processes with the unconscious inferences of perception and Gestalt psychology's concept of pattern formation resulting from direct experience. The former aligns with Kepes's reliance on perceptual passivity, and the latter registers with Kepes's notion of the syntactical dimension of visuality. Second, I will discuss the affinities apparent in Kepes's construction of a theory of vision and philosopher Charles Morris's semiotics, a foundation for "the main forms of human activity and their interrelationship[...]."[7] Indeed, both Morris and Kepes took their distinctly positivist views of the world from the propositional logic of the "Vienna Circle," a loose collection of logical positivists organized around Morris Schlick; a position that based its primary tenants on a belief that knowledge is achieved by an empirically

5 In addition to *Language of Vision*, books and article written by Kepes include Gyorgy Kepes, "The Creative Discipline of Our Visual Environment," *College Art Journal* 7:1 (1947): 17–23; *Graphic Forms: The Arts as Related to the Book* (Cambridge: Harvard University Press, 1949); and "Comments on Art" in *New Knowledge in Human Values*, Abraham H. Maslow, ed. (Chicago: Henry Regnery Company, 1959). Books edited by Kepes include *The New Landscape in Art and Science* (Chicago: Paul Theobald, 1956); *The Visual Arts Today* (Middletown, MA: Wesleyan University, 1960); and the influential *Vision and Value Series: Structure in Art and Science* (New York: George Braziller, 1965); *The Nature and Art of Motion* (New York: George Braziller, 1965); *Education of Vision* (New York: George Braziller, 1965); *Sign, Image, Symbol* (New York: George Braziller, 1966); *Module, Proportion, Symmetry, Rhythm* (New York: George Braziller, 1966); *Man Made Object* (New York: George Braziller, 1966); and *Art of the Environment* (New York: George Braziller, 1975).

6 Gyorgy Kepes, *Language of Vision* (Chicago: Paul Theobald, 1944).

7 Charles W. Morris, *Foundation of the Theory of Signs*, Rudolf Carnap Otto Neurath, and Charles W. Morris, eds. Vol. 1, *International Encyclopedia of Unified Science* (Chicago: University of Chicago Press, 1938), 136.

verifiable observation of natural phenomena.[8] Accordingly, scientific progress and all that it availed enabled a greater incidence of penetrating the indiscriminate veil that obscured the "present and invisible world." Third, I will explore a resolute humanism undergirding Kepes's *Language of Vision*. Here Kepes assumed an evolutionary model in which human-type being and humanist idealism were ostensibly linked. Finally, I will conclude with an account of the problems inherent to a natural history of vision, namely how it was that Kepes could reconcile his ontogenetic-humanist proclivities—his natural history—with what he took to be an advanced form of visual culture—contemporary advertising.

II. Kepes's Aesthetic Program

Kepes's philosophical interests defined natural history in accord with the philosopher Alfred North Whitehead, whom he cited frequently in *Language of Vision*. Whitehead posited that nature is an organism united in its parts and irreducible to its distinct qualities as such. Furthermore, nature also evinces a teleological process, channeling its transformations towards a single goal.[9] A natural history thus is an investigation of that organism, its united components, and its development. Such an examination charts the vicissitudes of the system in question. Kepes slightly differed from Whitehead's "thorough going-realism," a belief that material objects exist independent of our perception of them and, paradoxically, any knowledge of those objects is perceptually or experientially dependent. Augmenting Whitehead's propositions, Kepes insisted on a melioristic epistemology—the betterment of the world through an ongoing accumulation of knowledge.

Language of Vision's principal thesis stated that our vision of the world is alterable; that is to say, the way we see the world changes as we further refine our visual means. And the mutability of vision itself endorsed the possibility of a revised world, or a re-vision of the world. Without making any specific or practical claims, Kepes suggested that a resolution of social and psychological disharmony was predicated on humankind's natural capacity to organize discrete elements into a whole. This synthetic activity would harmonize the chaos of a world not yet unified, but naturally inclined to being so. As each whole formed through perceptual mediation, however, further levels of the unformed world would become apparent; therefore, vision would have to be constituitively refocused into a new vision and thus a new form of life, or "a new vital structure-order."[10] The implication was that the history of visual art and design was a history of the world being made over in an ongoing movement toward an ideal state. *Language of Vision* flagged the most advanced stage of that movement, and those artists and designers working from its example contributed to an ultimate goal by re-visioning the world through the production of new visual art and design.

8 Peter Galison, "Aufbau/Bauhaus: Logical Positivism and Architectural Modernism," *Critical Inquiry* 16 (Summer 1990): 709–752. Galison discusses parallel and interrelated developments of the Vienna School's logical positivism (namely Carnap and Neurath) and the Bauhaus. He reveals the correspondence between Bauhausian notions of building coherent forms from primary shapes and colors and the logical positivist creation of logical propositions from singular components of raw experience. See also, Laszlo Moholy-Nagy, *The New Vision: Fundamentals of Design, Painting, Sculpture, Architecture*, Daphne Hoffmann, trans. (New York: W. W. Norton, 1938) and *Vision in Motion* (Chicago: Paul Theobald, 1947). In any case, Kepes joined Moholy-Nagy in Berlin in 1930 and therefore missed Carnap's visit to the Dessau Bauhaus. Nevertheless, he was certainly acquainted with Morris, who was a follower of the Vienna School and who was affiliated with the New Bauhaus in Chicago, where Kepes taught between 1937 and 1943.

9 Alfred North Whitehead, *Process and Reality: An Essay in Cosmology* (Cambridge: The University Press, 1929).

10 Kepes, *Language of Vision*, 12.

The genesis of Kepes's natural history of vision started with base mark-making, and worked to precipitate coherent communication. This evolution was exemplified by two images that bracket the book's content. In the case of the frontispiece, the random, but still comprehensible, agitated lines, squares, and triangles are the product of a controlled but primitive hand (not pictured). These marks were, for Kepes, the rudimentary elements of picture making, and were foundational to the education of artists and designers. When combined to constitute a variety of patterns, the marks collectively take on a quality and a meaning distinct from the quality and meaning of each individual mark. This was made apparent in Kepes's choice of an illustration for the back end-paper, Jean Carlu's "PRODUCTION. America's answer!" (1942). Here the mechanic's gloved hand bolts the type to the poster's background. The image itself is emblematic of the effort that Kepes expended in keeping the details of his text "bolted" to any corresponding details in each image. The trope of mechanical engineering was (and is) a familiar one: in philosophy, Wittgenstein's Bilder—the deliberate construction of a model or picture—or Rudolf Carnap's Aufbau—the propositional construction of logic; in art and design, the later Bauhaus's appeal to pure functionality—the artist as builder. The key, for Kepes, lay within the premise that a coherent whole could be built from base components. The management of these base components was a matter of evolutionary sagacity (or astuteness) and the ostensible mutability of environment.

"To function in his fullest scope," Kepes wrote, "man must restore the unity of his experiences so that he can register sensory, emotional, and intellectual dimensions of the present and invisible whole."[11] Indeed, it is my contention that, the fundamentally synthetic (and philosophically idealist) nature of Kepes's notion of coming into wholeness—or integration—theorized a new society predicated on the refinement of vision at the expense of the corporeal, the material. The structural organization of *Language of Vision* instantiated this point. Beginning with the plastic organization of internal and external forces, continuing with multiple modalities of visual representation, and concluding with the vitality of symbolic forms, the physical ground of vision receded as each section of *Language of Vision* proceeded in its frustrated pedagogical intent.

III. The Fiber of Vision

Physiology and psychology were two integral aspects of Kepes's understanding of vision. On this he wrote: "The dynamic tendency to integrate optical impacts into a balanced, unified whole acts within the field of the physiological and psychological makeup of man." He continued to explain that the "restoration of equilibrium in the human organism" rested on the immediacy of "optical impacts." The procedure of picturing the world back to the sensing subject realized a good percentage of this equilibrium. But, in

11 Ibid., 13.

Kepes's analysis, there were perceivable limits to both vision and picture:

> Just as limitations of the picture-surface serve as the necessary frame of reference in the transformation of the optical impacts into spatial forces, so the characteristics of the physiological and psychological mechanisms serve as the conditioning factors in experiencing forces of integration, that is, transforming spatial forces into plastic forces.[12]

Thus, a conception of the world was one-part presentation (things in- and of-the-world) and an equal part representation (things in- and of-the-world pictured). Both should have struck the sensing subject with the same sensorial charge. "Visual representation operates by means of a sign system based upon a correspondence between sensory stimulations and the visible structure of the physical world." [13] To harmonize both ends of the representational scale was the ultimate goal.

Kepes drew this particular component of his theory of vision from Hermann von Helmholtz, whose *Physiological Optics* (1867) he cited, and who maintained that aesthetic principles were environmentally conditioned. Any perception of objects in the world was, as Helmholtz submitted, a matter of memory and built from the sensing subject's ongoing engagement with the world. Helmholtz based his theory on the presumption of symmetrical relationship between sense nerves and sensations. Holding to a "Cartesian perspectivalism," or a geometrically arranged monocular vision, Helmholtz maintained the passivity of the eye, favoring the mind as the organ of image construction. Through a process of unconscious inference, a sensing subject arranged sensations into images of external objects in the world. Helmholtz maintained that sensory impressions were signs for properties of the external world, the meaning of which were acquired through experience. Accordingly, for Helmholtz, sensory experience depended on a priori conditions for correlating manifold sensations.[14]

From Helmholtz's perspective, a vision of the world was contingent and based on the internal history of the sensing subject in the world.[15] Correspondingly, the historical development of representation unfolded, for Kepes, as a gradual triumph of vision in relation to advances in the production of two-dimensional picture surfaces: "The visual assimilation of space time events [as pictures]." [16] Architectural historian Sigfried Giedion established a similar concept of representation based on a definition of "space-time" in art, whereby artists "sought to extend the scale of feeling, just as contemporary science extends its descriptions to cover new levels of material phenomena." [17] In other words, artists advanced beyond single-point perspective, and opted for an extension of pictures in line with temporal and spatial extensions—a literal unfolding of both time and space. As a result of this advance, artists adopted

12 Ibid., 34

13 Ibid., 67.

14 Hermann von Helmholtz, *Helmholtz on Perception* (New York: John Wiley & Son, 1968).

15 On the historicist aspect of Helmholtz's theories, see Gary Hatfield, "Helmholtz and Classicism: The Science of Aesthetics and the Aesthetics of Science" in *Hermann von Helmholtz and the Foundations of Nineteenth Century Science*, David Cahan, ed. (Berkeley: University of California Press, 1993).

16 Kepes, *Language of Vision* , 66.

17 Sigfried Giedion, *Space, Time and Architecture: The Growth of a New Tradition*, 4th ed. (Cambridge: Harvard University Press, 1963 [1941]), 432.

varied and multiple models of representation. This version of the development of vision led Kepes to propose an ever more exacting configuration of the world, to know the world from all sides as it were. Kepes's "new standard of vision," however, fragmented the world, taking it apart at its joints and recomposed it into a picture.[18] "[T]his historical challenge," as he referred to it, "calls him [the painter and the graphic designer] to assimilate the new findings and to develop a new sensibility, a new standard of vision that can release the nervous system to a broader scale of orientation."[19]

Kepes's "strange esoteric jargon," as one critic referred to his writing, obscured the pragmatic valence of visual acumen.[20] While he never once remarked explicitly on the distinction between image and picture, Kepes followed a line of thought which maintained that images were trace elements of sensory perception: the raw data of experience. (Here he closely followed Helmholtz.) Kepes's atomistic view—discrete parts adding up to a whole—held that the accumulation of images gave way to picture making, to painting, to sculpture, to photography, and to graphic and industrial design. And as pictures became part of the external environment, they too were capable of image generation and thus led to more pictures. Simply put, vision yielded image, and image yielded picture. Image was not picture, but both were representational.

In addition to Helmholtz's influence, Kepes's notion of a unified vision borrowed directly from the experiments of gestalt psychology. Gestalt psychology, notably practiced by Kurt Koffka and Wolfgang Köhler, took as a psychological fact that things do not always appear as they actually exist in the world. We make inferences from appearances. Perceptual illusion should be taken as being real, as being phenomenally verifiable. And the problem for gestalt psychology was to explain why things appear precisely as they do.

In general terms, gestalt psychology focused on the phenomenal nature of perceiving the wholeness, or "gestalten," of a pattern's structure, or an organized pattern from which properties exist apart from the isolated parts. To do so, the discipline rejected the atomistic views, or the reduction of complex phenomena to aggregate forms that are mechanistically combined, of nineteenth-century physical sciences and humanistic psychologies. Specifically, Koffka was skeptical of a representation theory of perception, that ideas (or images) are constructed replications of the external objects of the world. Unlike Helmholtz's theory, in which sensations are not copies but signs of the world, gestalt psychology preferred a phenomenological method, whereby contingencies were eliminated and only appearance was maintained as an object of study.[21]

As it was understood, Kepes's appropriation of gestalt theories contradicted his reliance on Helmholtz's nineteenth-century optics. Kepes resolved the tension, however, by collapsing a more or less metaphysical assumption apropos the physiology of sense

18 Kepes, *Language of Vision* , 67.

19 Ibid.

20 Anonymous, "Principles of Composition," *London Times Literary Supplement*, September 1951. Kepes found this review "devastating." See Letter from Kepes to Paul Theobald, 27 November 1951, Paul Theobald Papers, Art Institute of Chicago, Chicago.

21 See especially Kurt Koffka, *Principles of Gestalt Psychology* (New York: Harcourt, Brace, 1935). For a history of gestalt psychology's development and cultural influence see Mitchell G. Ash, *Gestalt Psychology in German Culture, 1890–1967: Holism and the Quest for Objectivity* (New York: Cambridge University Press, 1995).

perception into a realist concept of the psychology of sense perception. (It may very well be that the two were not incommensurable. Rather, the distinction lay between the strict methodologies of physiology and psychology.) No doubt, Kepes's book was *realist* in its intent. As Giedion observed in his introduction to *Language of Vision*, Kepes revealed how the "optical revolution" constructed a mid-century "conception of space and the visual approach to reality."[22] Indeed, Giedion's "space-time" theory explained how a conventional view of reality was mistaken because it could not conceive of a spatial dimension necessarily linked to a temporal dimension: space and time collapse and unfold reality. As I stated above, the process of unfolding does damage to the world by dismantling it and reconfiguring those parts into a picture of the world, one that is seemingly more accurate, more real. Both Kepes and Giedion agreed that reality was a "more real world than the real behind the real" (to cite Kepes's quotation of Andre Breton's theory of "surrealism").

To get at the real behind the real required the construction of a "language of vision"—a visual equivalent to syntactical modes of representation. Kepes privileged the mind's work over sensory work; he adopted a language of vision whereby discrete units were assembled and disassembled and reassembled to more exactly configure the world. In fact, such a view undercut vision, releasing the eye from the material body that paradoxically must be the site of a realist approach to vision.

IV. Model Language

A generative and universal structure of language lay at the very core of Kepes's *Language of Vision*. In fact, Kepes elaborated his thesis on an analogy that bridged the gap between pictorial modes of representation and a syntactical model of language:

> Just as the letters of the alphabet can be put together in innumerable ways to form words which convey meaning, so the optical measures and qualities can be brought together in innumerable ways, and each particular relationship generates a different sensation of space. The variations to be achieved are endless.[23]

Accounting for the infinite varieties of space was less a matter of the materiality of the optic array and its physiology, as J. J. Gibson concluded.[24] Rather, per Kepes's observation, the apprehension of spatial order, of the world in its full blown dimensionality, was by and large the apprehension of a symbolic order and its formalization, hence "language" of vision. Kepes's analogy implied that the quality of a picture was a consequence of something other than mere sensation, other than the physiological fiber of vision. Therefore, Kepes registered spatial order, things in the world arranged and rearranged, fitting together in innumerable combinations, in the same

22 Gideon, "Art Means Reality," introduction to *Language of Vision* by Gyorgy Kepes (Chicago: Paul Theobald, 1944), 7.

23 Kepes, *Language of Vision* (1944), 23.

24 James J. Gibson, "The Information Available in Pictures," *Leonardo* 4 (1971): 27–35. Modern painters, as Gibson understood Kepes to have asserted, do more than inform the sensing subject through their pictures. Rather, artists reconfigure vision by developing a new visual grammar. Countering Kepes's symbol theory of pictures, Gibson defined a picture as "*A surface so treated that a delimited optic array to a point of observation is made available that contains the same kind of information that is found in ambient optic arrays of an ordinary environment*." (31) Therefore, pictorial quality is available through experience. Pictures are objects of the "phenomenal visual *world*." What is in the world is what is perceived. Depicting the world as one sees it was not, for Gibson, a matter of pictorial convention, like the syntactical conventions of language or grammar.

manner as he registered the order of letters that construct a word and the order of words that construct a sentence and so on—a structural syntax. In this sense, representation was less a matter of perceptual constancy, and thus one part of the phenomenal world. Rather, it was a matter of symbolic convention and its multifarious permutations.

In a letter to his publisher, Paul Theobald (11 February 1944), Kepes wrote that the suggested edits to *Language of Vision* were so extensive that he required a retyped manuscript.[25] There is no way of knowing who solicited the edits, and I can only speculate as to the actual extent of the suggested revisions. They were, if truth be told, substantial enough to warrant the labor and the expense of a revamped text (which Theobald begrudgingly approved). I am certain, however, that the analytic philosopher of language, Charles Morris, played a significant role in the book's rewritten form and its espousal of a symbolic theory of vision. In the first place, Kepes acknowledged Morris's contribution as a reader of *Language of Vision.* In the second place, the book's most coherent section was the chapter entitled "Towards a Dynamic Iconography," which drew exclusively from Morris's linguistic theories.[26] In the third place, once the edits were made and the manuscript was retyped, Kepes spent much of his time designing the book, rather than attending to its textual content.[27] He also was less then capable of adequately proofreading the final draft of *Language of Vision*. As Kepes expressed to Theobald, his English was too poor for him to embark on such a task with any proficiency.[28] I conclude from these three factors, if only hypothetically, that Kepes's involvement in the conceptualization and writing of *Language of Vision* was integral from the beginning. But, toward the final stages of the book's production, Morris's contribution, if not essential, was certainly significant.[29]

Morris constructed the core of his semiotics from Ludwig Wittgenstein's and Rudolf Carnap's theories of propositional logic. From Wittgenstein's *Tractus*, Morris forged a position that all propositions are the truth function of "elementary propositions," or whatever can be minimally asserted. He then combined this with Carnap's conception of elementary experience to create a formal semantic theory, whereby all meaningful propositions are reducible to propositions about experience. As an applied methodology, Morris's semiotics conceivably could explain the multitude of concepts integral to the production of culture.

In addition to Wittgenstein and Carnap, Morris drew on such diverse sources as Ernst Cassier, Edmund Husserl, G. H. Mead, and Charles Peirce. He developed a theory based on the pragmatic belief that signs play a vital role in the formation of human behavior and human culture. In "Science, Art and Technology," Morris proposed that a theory of signs assist in gaining "insight into the essentials of human culture." [30] Significantly, Morris defined

25 Letter from Kepes to Theobald, 6 October 1943, Paul Theobald Papers, Art Institute of Chicago, Chicago.

26 Recently, Howard Singerman addressed Kepes's influence on art education in the United States. Singerman remarked on the constructivist import of Kepes's book. Accordingly, vision *structures* the world, but vision is itself structured to a significant extent. Singerman attributed a "structural linguistics," similar to the Saussurian model, to Kepes's Bauhausian "language of vision." This association requires further explication, however, for there is ample proof to view the linguistic turn of the Bauhaus to be more in accord with the structural logic of logical positivism. See Singerman, *Art Subjects: Making Artists in the American University* (Berkeley: University of California Press, 1999), 78, 89. A study produced prior to Singerman tracks the developments and revolutions in art education from the Renaissance to the present. In this study, Kepes is only briefly mentioned, and his *Language of Vision* is ignored. See Carl Goldstein, *Teaching Art: Academies and Schools from Vasari to Albers* (Cambridge and New York: Cambridge University Press, 1996). Also, see S. David Deitcher, "Teaching the Late Modern Artist: From Mnemonics to the Technology of Gestalt" (Dissertation, The City University of New York, 1989).

27 Letter from Kepes to Theobald, 11 February 1944, Paul Theobald Papers, Art Institute of Chicago, Chicago.

28 Letter from Kepes to Theobald, 15 March 1944, Paul Theobald Papers, Art Institute of Chicago, Chicago.

29 See also Charles Morris, "Man-Cosmos Symbols" in *The New Landscape in Art and Science*, Gyorgy Kepes, ed. (Chicago: Paul Theobald and Co., 1956).

human culture as a "web of sign-sustained and sign-sustaining activities." [31] Objects that are produced as a result of these activities posses additional meaning once linked to additional objects. Morris asserted that

> The use of certain properties of things as clues to further properties, and the functioning of behavior of subsidiary spoken or written languages correlated both with human activities and the things upon which the activities are directed, are distinctive features of human activity. [32]

Thus, language, commonly used and expressing the primacy of experience, forms a "matrix" from which all further specialized discourses flourish. There are three specialized discourses according to Morris: scientific, artistic, and technological.[33] These primary forms of discourse interrelate to create secondary forms of discourse that have greater cultural implications than their primary sources. "All three primary forms of discourse," Morris wrote, "are simply the development of three basic functions found in everyday language, which permits making statements [science], presenting values [art], and controlling behavior [technics]." [34]

The laws of natural organization that Morris applied to discourses likewise were applied to visual signs by Kepes, but with a slight twist. According to Kepes, prior to the formation of a new vision, there was a necessary process of disintegration of conventional systems of meaning—organization. As examples of radically disintegrative practices, Kepes supplied the image / text experiments of Dada and the surrealist's dialectic of the conscious and the unconscious of surrealism. The mechanical conversions of surrealist automatic writing targeted the order of traditional modes of writing. The manifest disorganization of automatic writing, and its ungrammatical novelty, functioned as an affront to reader expectations. The intention, however, was to restore a new order via the shock of bizarre randomness which would result in a transformation of sorts, or what Kepes termed "reintegration." The process of reintegration was operative in aesthetic perception as the complex play of unifying all component parts of the new picture and its "connected tissue of references." An ongoing procedure of disintegration and integration fueled a dynamic iconography—an ever-evolving symbology and an advancement of the tripartite primary discourses.

Both Kepes and Morris assumed that the order of things necessarily crystalized into ever sharper and more coherent patterns of meaningfulness. *Language of Vision* naturalized order and meaning by giving both over to the mind exclusively. Within the constructed narrative of this final chapter of *Language of Vision*, Kepes effectively cut the eye from the body. Here a disembodied eye, the mind's eye, assembled the fragments of the world and performed the imminent transformations essential to the semiotic process. The

30 Charles W. Morris, "Science, Art, and Technology," *Kenyon Review* (Autumn 1939): 409–423. For a more philosophically technical version of these same points, see Charles W. Morris, "Esthetics and the Theory of Signs," *The Journal of Unified Science (Erkenntnis)* VIII (1939/40): 131-150. The main text, from which these two are derived, is Charles W. Morris, *Foundation of the Theory of Signs*, Rudolf Carnap, Otto Neurath, and Charles W. Morris, eds., Vol. 1, *International Encyclopedia of Unified Science* (Chicago: University of Chicago Press, 1938).

31 Morris, "Science, Art, and Technology," *Kenyon Review* (Autumn 1939): 409.

32 Ibid.

33 Ibid., 413–418.

34 Ibid.

implications were that only a mind, an intellect of the human kind, could achieve such a goal. And this mind, this disembodied mind's eye, was unencumbered, unfettered from the weight of the body and from the gravity of the earth. It raised itself above all else so that vision itself would be unencumbered—free.

V. "Keep Your Eyes Peeled"

In a letter to Kepes (18 August 1971), designer Henry Dreyfuss commented on the ongoing production of his "symbol sourcebook." Providing no great detail on the book's contents, Dreyfuss queried Kepes on a section entitled "Color Symbology." Dreyfuss was well aware of Kepes's interest in the semantic nature of color and how color-coding could be used to signify aspects of the world, such as a factory pipe painted red to denote that it contained hot water, for example.[35] Or, taking an example from Dreyfuss's book, red denotes temperature when applied to a graphic representation of a thermometer: Hot! In a follow-up letter, Dreyfuss lamented the lack of such examples, writing: "You would think color would be used more often this way, but I can find very little evidence of it."[36] Concerned that his book would remain incomplete on this point, he concluded his letter with, "Keep your eyes peeled." In other words, Dreyfuss hoped that Kepes would continue the designer's quest for similar instances of the concrete symbolic value of color.

Aside from the letters' contents, Dreyfuss's vernacular—"eyes peeled"—would have held a positive affinity for Kepes in both its literal and metaphorical senses. And this affinity also points to the underlying tension between the material and the metaphysical in *Language of Vision*. First, in the literal sense, "eyes peeled" would have taken on a clinical inflection for Kepes. As early as 1947, three years after the initial publication of *Language of Vision*, Kepes was in contact with the Dartmouth Eye Institute in Hanover, New Hampshire.[37] In the first of several exchanges of correspondence, Kepes received collateral material that related to a demonstration the author had apparently attended on "the origin and nature of visual sensations."[38] Of the eight attached documents, "Some Demonstrations Concerned with the Origin and Nature of Our Sensations (What We Experience): A Laboratory Manual" stands out. The Dartmouth paper elucidated the Institute's clinical demonstrations on the physical source of vision, literally peeling the eye so as to reveal its fibrous properties.

Second, in the metaphorical sense, "eyes peeled" would have connoted the vigilance or the alertness of verticality and the unencumbered line of sight that such a posture would have suggested to Kepes. Dreyfuss's colloquialism capitalized on a practical notion that one should strip away that which clouded vision, clearing all the debris that obscured the world. And clear-sightedness necessarily accompanied an upright posture, for to be on-the-look-out, to remain ever alert, would have meant to see from a somewhat

35 Letter from Henry Dreyfuss to Kepes, 18 August 1970, Gyorgy Kepes Papers, Archives of American Art, Washington, DC.

36 Letter from Dreyfuss to Kepes, 31 August 1970, Gyorgy Kepes Papers, Archives of American Art, Washington, DC.

37 Letter from Adelbert Ames, Jr. to Kepes, 4 April 1947, Gyorgy Kepes Papers, Archives of American Art, Washington, DC.

38 The Gyorgy Kepes Papers holds three letters from the Dartmouth Eye Institute. The second was dated 30 April 1947 and the third was dated 15 March 1948. Of the three, the first letter is specifically relevant to the concerns of this paper.

39 Letter from Panofsky to Kepes, 11 November 1958, Gyorgy Kepes Papers, Archives of American Art, Washington, DC. Panofsky wrote to inform Kepes that he could not contribute to the latter's special issue of *Daedalus.* Apparently, Panofsky was not adequately conversant with contemporary art. Writing parenthetically, he qualified, "The only contribution I could make would be, as I told you at the Cambridge dinner, a brief report on Betsy, the painting ape," implying that contemporary art was on par with art made by an ape.

40 After attending the 1957 conference of the American Federation of Art, H. W. Janson reported that a critic stated that he could not "distinguish Betsy's work from abstract expressionism, the dominant trend in present-day painting." See H. W. Janson, "After Betsy, What?" *Bulletin of the Atomic Scientists* XV: 2 (February 1959): 68.

41 I do not doubt that Panofsky took ape painting very seriously. The development of primate mark making is well documented. Nevertheless, animal behavioral scientists have yet to identify coherent images in ape drawings and/or paintings. For primate painting see Desmond Morris, *The Biology of Art: Study of the Picture-Making Behavior of the Great Apes and Its Relationship to Human Art* (London: Methuen, 1962) and Thierry Lenain, *Monkey Painting*, Caroline Beamish, trans. (London: Reaktion, 1997).

elevated vantage point. To do so would entail the attainment of a distinctly human-type posture.

Such an evolutionary confluence of opticality and verticality was made apparent in an exchange between Kepes and the eminent art historian, Erwin Panofsky. Sometime in the later half of the 1950s, Kepes and Panofsky attended a dinner in Cambridge, Massachusetts.[39] During the course of this event, Kepes and Panofsky discussed ape paintings. It seemed that Panofsky was concerned with similarities between Betsy, the painting ape's recent activities, and contemporary art practices.[40] Panofsky might have thought primate mark-making to be semiotic in structure, and that the marks were signs of a sort.[41] He may not have considered, however, marks made by primates as being representational in the semantic sense that paintings were representational (they might not be symbolic). If Panofsky considered ape paintings and contemporary art to have been analogous, then contemporary art's lack of semantic structure would have posed serious problems for the iconographer / iconologist. The dribbled and poured paint of a Jackson Pollock may very well have struck Panofsky as regressive, as sub-human, as ape-like. Crouching artists bent over puddles of paint did not square with the uprightness of a humanist tradition that most appealed to Panofsky, a tradition that, in part, equated bodily comportment with principles of self conduct.[42]

Nor would such a bodily posture befit Kepes's notion of artistic and social advancement. (His example of ink blots exemplified a turn away from naturalistic representations and toward the plasticity of thinking, of the mind as it were. I don't believe, however, that this example embodied a "proud and tragic consciousness...") As Kepes wrote, "Visual language thus must absorb the dynamic idioms of the visual imagery to mobilize the creative imagination for positive social action, and to direct it toward positive social goals." [43] Indeed, Kepes had hoped that the visual arts had developed beyond mere stooping and grubbing, transcending the ground plane. The artist's unseemly posture, his or her carriage oriented towards the earth, rendered him or her visually incapacitated.[44] Under these circumstances, the artist could not see what was before him or her, only what was below. Admittedly, Kepes linked primitive representational naiveté to an unfiltered view of the world. Void of the burden of Western pictorial convention, the primitive artist was connected to the world, rendering his art semiotically potent. While Kepes preferred the reduction of pictorial convention that resulted in a direct mode of communication, what he attributed to primitive picture making, he in no way condoned an affected primitivism in art but rather a refined directedness.[45] Most certainly, a perceived disorder of the contemporary art scene was contrary to what Kepes had proposed as art's natural course: That is, visual expression, predicated on a comprehension of the dynamic structure of visual imagery, was invaluable in readjusting

42 In the introduction to his *Meaning in the Visual Arts*, Panofsky recounts the final days of Immanuel Kant. The story goes that, when visited by his physician, Kant raised himself from his chair to greet the good doctor, refusing to retake his seat until the doctor had taken his. Once the doctor had acknowledged the philosopher's civility by taking his seat, Kant followed suit and said, "'The sense of humanity has not yet left me.'" For Panofsky, bodily comportment and humanism were the same, both connoting "man's proud and tragic consciousness of self-approved and self-imposed principles [...]." See Panofsky, "Introduction: The History of Art as a Humanistic Discipline" in *Meaning in the Visual Arts* (Chicago: The University of Chicago Press, 1982), 1. I would like to thank Aron Vinegar for bringing this passage to my attention.

43 Kepes, *Language and Vision* (Chicago: 1944), 14. Beginning in his early twenties, Kepes was a committed social activist. In 1928, he joined Munka, a Hungarian art and political action group. From all accounts, however, Kepes's radical political activities waned by the time he arrived in the United States in 1937, after moving first to Berlin and then London. He did, nonetheless, receive a citation from the U.S. State Department for wartime support activities. See Gyorgy Kepes Papers, Archives of American Art, Washington, DC.

44 The gestalt psychologist, Wolfgang Köhler, as part of the Prussian Academy Study of Science, conducted experiments on anthropoid apes on the Island of Tenerife. As a part of his assignment, Köhler studied gesture, language, and perception in the apes, determining their place on a developmental scale. The apes were subjected to a series of tests in which they would have to overcome a variety of obstacles to obtain food, usually bananas. Köhler observed that his apes, "Sultan" especially, showed signs of genuine intelligence and insight. See Wolfgang Köhler, *The Mentality of Apes*, Ella Winter, trans. (New York: Vintage Books, 1956 [1917]).

45 Kepes, *Language of Vision* (Chicago: 1944), 96–97.

human patterns of thought and action as a dynamic process towards progress. Kepes was optimistic on this point.

Optimism notwithstanding, not long after his Cambridge dinner, a disillusioned Kepes broached an alarming predicament in the arts. In his article, "Comments on Art," (1959) he wrote:

> The present human situation resembles that of a lost child. [...] We are incapable of absorbing the new landscape, with its wealth of new sensations; therefore, we cannot reinforce ourselves with the joys of light, color, and forms; the rhythm of sound and movement essential to healthy growth.[46]

The contemporary artist, like the lost child (and Betsy), was unable to meet Kepes's evolutionary demands. Art suffered from a crippling point-of-view.

Seeing the future as a "new landscape" suggested that Kepes based his linguistic theory of pictorial representation, his language of vision, on a natural history of vision: an evolution from primate activity to human activity and beyond where the horizon of progress was available to those beings who stood upright and looked straight-ahead-those who kept their eyes peeled.[47]

VI. Conclusion

To summarize, a new vision, as Kepes had it, depended on an active relationship between disparate items that were reconciled in the mind as image, a physio-mental syntax of sorts. Following Whitehead and Morris, Kepes located meaning in relations between distinct things, not in the things themselves. Furthermore, the integration of "meaningful signs," according to Kepes, was indicative of a natural human compulsion towards order and uprightness. All one had to do was to read a culture's accumulation of meaningful signs—mediating and reflecting human action—to apprehend the manifold of human activity. And Kepes located a bevy of meaningful signs—both pictorial and linguistic—in contemporary advertising and its attention-grabbing character.[48]

Kepes wrote, "If social conditions allow advertising to serve messages that are justified in the deepest and broadest social sense, advertising art could contribute effectively in preparing the way for a positive popular art, an art reaching everybody and understood by everyone." [49] For Kepes, the key to advertising's impact was its communicative immediacy. Advertising art was free from restriction, it did not feel the weight of art history, nor of institutional practice. As Kepes explained:

> Advertising art, unhandicapped by traditional consideration, was free to develop a visual presentation in which every figure is pictured in the perspective which gives the strongest emphasis to its connectedness in a meaning.[50]

46 Gyorgy Kepes, "Comments on Art" in *New Knowledge in Human Values*, Abraham H. Maslow, ed. (Chicago: Henry Regnery Company, 1959), 86–87.

47 The book that directly followed *Language of Vision, The New Landscape in Art and Science*, took Kepes's goal to the extreme by collecting a vast array of micro- and telephotographic images, the stark beauty of "Grain Boundary Migration in Arc-Melted Hafnium" for example. This "photomicrograph" is emblematic of Kepes's search for an idealized order. Science and advances in optics gave him the means to penetrate the filth and disarray of the world as he saw it. See *The New Landscape in Art and Science* (Chicago: Paul Theobald and Co., 1956).

A "positive popular art" was unschooled, primitive in its conception—in its directness—but not in its execution. As I stated earlier, in no way did Kepes mean to suggest that his "new structure order" was analogous to the regressive tendencies of an affected primitivism in art, hence "new." Indeed, Kepes' examples of advertising art were the very instantiation of technological sophistication in terms of image production. Photographic montage, image transparency, breadth of scale, line contrast, color saturation, and fidelity of reproduction were all put in the service of commerce. In drawing attention, the advanced technics of advertising art then were capable of engaging an audience on the level of visual experience, where, Kepes believed, meaning resided. Accordingly, visual experience was the key to effective communication because knowledge itself was built from the discrete units of what was gathered from the optical array.

Yet, a positive popular culture would have to come at a price. As Kepes sought to reveal the "structural laws" of an expanded sensory field's manifestation in experience, and to unveil its "social meaning," he inadvertently revealed the repressive nature of an evolved sensory field, a transition from the embodied eye to the disembodied eye. What was the social meaning of an expanded sensory field, a field dominated by vision? If advertising were the most advanced form of pictorial representation, the apex of human communication, then it would have to repress a great deal. Indeed, advertising showed its audience a horizon of possibilities through an accumulation of capital, or revenue-producing assets, that regulated perception. Those possibilities were predicated on what one theorist observed to be "interest incentives" based on personal welfare.[51] The underlying structure, however, was a logic of desire whereby advertising ritualized cultural assimilation. It offered images that capitalized on a human propensity for mimesis, for assimilating that which one desired but could never acquire.[52]

The ever-present, unattainable future that advertising presented to Kepes, however, was contrary to his belief in the primacy of visual experience and its connectedness to meaning. After all, the groundwork of post-war American advertising was to suspend direct experience, if for only a moment, thereby substituting it with a commodity form. The underlying logic in *Language of Vision*—an imminence of order, a world—finding cohesion rather than a cohesive world in-and-of-itself-confirmed the social meaning of an evolved sensory field dominated by vision. And desire born from economic ideology accommodated Kepes's naturalist approach to a social history that was analogous to a natural history of vision. It also exposed the metaphysics undergirding Kepes's so called positivism.

In "The Creative Discipline of Our Visual Environment" (1947), Kepes clarified the underlying bias of *Language of Vision* by summoning forth a "healthy vision" free from the toxic mess of the

48 In his "Attention and Modernity in the Nineteenth Century," Jonathan Crary remarked on a move away from a Kantian transcendental vision toward what he refers to as "attention." The shift from transcendental vision to attentive vision, or the philosophical notion of distraction replaced by a physiological notion of intense regard, marked the sensing subject's regulation and management. The attentive viewer was a construction, one that arose from a discourse on optics and vision. Crary's argument assumes that attention and sensory perception were constructed from discourse—from "texts and techniques" rather than from a hard-wired physiological capacity. Crary argues that the emergent industrial economy that produced products for consumer consumption was directly related to this epistemic shift. Attention was focused on those products that were for sale. By following Crary's line of argumentation, one could claim that Kepes's *Language of Vision* was yet another example of a text constructing vision—literally pointing to what it is that we are to see in the world and turning our attention toward consumer products for consumption. Admittedly, *Language of Vision* promoted a discourse on vision that was commensurate with a post-war industrial economy. Nevertheless, the question remains as to whether Kepes's text literally formed vision materially, or whether his text broadened the parameters of what was acknowledged as a way of seeing the world. And yes, that world was deluged with merchandise. See Jonathan Crary, "Attention and Modernity in the Nineteenth Century" in *Picturing Science Producing Art*, Caroline A. Jones and Peter Gallison, with Amy Slaton, eds. (New York and London: Routledge, 1998).

49 Kepes, *Language of Vision* (Chicago: 1944), 221.

50 Ibid., 98.

51 Walter Dill Scott, *The Psychology of Advertising* (New York: McBride, 1932), 43–53.

52 René Girard, "Mimetic Desire" in *Things Hidden Since the Foundation of the World* (Stanford: Stanford University Press, 1987), 294–298.

world, from the filth of the body. He referred to men who were not "fully" men due to distorted vision. He also denigrated the sensual body and its proximity to other bodies. Healthy vision required that the eye disengage from the body, to rise above the ground, and to dominate its surroundings. Kepes made this point explicit when he wrote, "A visual control of the environment, guided by [...] healthy vision would give man not only a healthier, sounder physical setting, but also what is as important, it would increase his stature." [53] I take Kepes to have meant "stature" in its literal sense: the height of a human body.

Such a gain in height, in vertical carriage, was not to be, however. Twelve years later in "Comments on Art" (1959) Kepes complained that the world still suffered from rapid decay. Industrial and technological progress had not supplied a nurturing environment for visual acumen nor social progress. Instead, Kepes saw a world that "shocks and numbs our sensibilities." [54] He continued, "... our gestures and facial expressions mount up to grotesque, formless aggregates lacking sincerity, scale, and cleanliness." He claimed that our physical comportment was deformed, and that we lacked "cleanliness" due to the body's stupefaction. Suffering a regression, we were getting closer to the ground. "Our distorted surroundings, by distorting us, have robbed us of the power to make our experience rich and coherent." [55] While optical adroitness entailed loss of visual static, of complexity, of contradiction, and of palimpsestic depth due to an accumulation of all unnecessary fragments, constructions of the world would forever be sullied, tainted by the brutishness of contemporary culture.

The wholeness that Kepes desired, the unrealized aggregate form, did not result in a positive social goal. In the final analysis, he was unable to reconcile the appearance of the world and the world as it exists materially. Kepes's rhetoric appealed more to hygiene than logic: idealized clarity, not realized clarity. His theory of visual representation, a language of vision, could not accommodate the possibility that the physiological fiber of sight—the way we see—remains stable and is not essentially contingent—as is what we see. Kepes's theory of vision fell into the gap that kept the way and the what of vision at some distance. I do not believe that Kepes claimed any great mystery; rather, he inadvertently underscored the fact that a strict theory that explains the way we see does not necessarily disclose the meaning of what we see. Kepes preferred the latter of the two; and his preference resulted in a symbolic world at the expense of a material world.

53 Gyorgy Kepes, "The Creative Discipline of Our Visual Environment," *College Art Journal* 7:1 (1947): 19.

54 Gyorgy Kepes, "Comments on Art" (1959), 90.

55 Ibid.

Color and Consumption

Stephen Eskilson

Early in 1928, the *Saturday Evening Post* published a short commentary entitled "The New Age of Color." This article reveled in the ubiquity of color in all facets of American design, from architecture to clothing.

> The effects of our chromatic revolution are everywhere apparent. One need not leave his own fireside to observe equally striking signs of the new invasion. Hangings, draperies, and floor coverings tell the same new story. The craze for colored glassware for table and parlor use has produced new hues and effects. Even the humble agateware of pantry and kitchen refuses to be denied a part in the general symphony of color. Motor cars are borrowing their hues from the waters of the Nile, from the sands of Arabia, the plumage of birds and the fire of gems.[1]

This article examines the different manifestations of this "chromatic revolution" which took place in the United States during the period 1914–1934, and which has been largely overlooked by scholars of the history of design. During this period, while artists sought to create new universal languages of abstraction via color, commodity sellers utilized colors as signifiers of progress, novelty, and affluence in a successful attempt to increase consumption. Through an explication of the use of color in both artistic and market-oriented endeavors, it will become apparent how these seemingly disparate practices thrived side by side. In terms of chronology, the artistic use of color generally precedes its commercial employment. However, the scenario is not a simple one of cause and effect; rather, throughout this period, a dialogue developed between the different color producers. While retailers benefited from the artistic aura surrounding color, artists also profited from the glamorous spectacles of consumption that the commercial world constructed.

Fortune magazine reported in 1934 that industrial designer Henry Dreyfuss "likes to design one show on Broadway every season because his clients like to see his name in theater programs."[2] The theater arts contributed to the visual code of color in two important ways. First, the theater provided a talent pool of people experienced in the manipulation of color. Stage designers such as Dreyfuss, Josef Urban, Norman Bel Geddes, Lee Simonson, and Robert Edmond Jones won lucrative contracts in the retailing industry throughout the 1920s based on their success in the theater. Second, the artistic aura surrounding the world of theater bestowed

1 "The New Age of Color," *The Saturday Evening Post* (January 21, 1928): 22.

2 "Both Fish and Fowl," *Fortune* (February 1934): 40–43, 88, 90, 94, 97–98.

an elevated status on the design and marketing of commodities, spurring consumption by lending a patina of glamour to products that shared the same visual language.

In order to understand the resonance of the new stagecraft in the United States during the period of 1912 to 1925, it is necessary to consider a brief history of its technological and ideological circumstances. In the 1880s, theater critics had deplored the unconvincing character of illusionistically painted backdrops, wings, and borders. Although many artists decried the emotional limitations of standard scenery in the late nineteenth century, *trompe l'oeil* illusionism remained the standard for set design until circa 1905 in Europe and 1915 in the United States.[3] The imprimatur of tradition, however, was insufficient to sustain conventions that were increasingly perceived as superannuated, and the early decades of the twentieth century saw new practices and new technologies rapidly become widespread in the theater arts. Many of these changes can be traced to the years between 1895 and 1905, when the publications and stage productions of Adolphe Appia and Edward Gordon Craig shifted the focus of European stagecraft towards expressionist lighting and three-dimensional settings. "Expressionist lighting" per Appia and Craig can be defined as colored light designed to enhance the emotional power of a performance. Using elaborate electromechanical equipment, designers sought to construct a "spiritual" environment that complemented the action on the stage.

Appia felt that opera could best be served by simple settings coupled with dramatic lighting effects. His *La Mise en Scène du Drame Wagnérien* (1895) and *La Musique et La Mise en Scène* (1898) outlined a stagecraft consisting of three-dimensional settings united by an environment of colored light.[4] Appia argued that light had a power of expression akin to that of music, able to represent and explore emotional depths. "Light is to the production what music is to the score: the expressive element in opposition to literal signs; and, like music, light can express only what belongs to 'the inner essence of all vision.'"[5] This "expressionist" definition of theater lighting became widely accepted in the decades following the publication of Appia's work.

The second initiator of expressionist lighting was the Englishman, Edward Gordon Craig. Craig staged many influential productions, published prolifically, and trained several young designers in accordance with his beliefs. His pamphlet, *The Art of the Theater* (1905, republished as a book in 1911), a book titled *The Theatre Advancing* (1919, published in the United States), and two magazines, *The Mask* (1914–19) and *Scene* (1923), all were important circulators of Craig's ideas.[6] Among his students was producer/director Sam Hume, who founded the Arts and Crafts Theater in Detroit, along with Sheldon Cheney, in 1916. Hume sponsored Cheney's *Theatre Arts Magazine* while, in 1914, Hume also curated an important exhibition of modern design in Boston that focused on

3 Kenneth Macgowan and William Melnitz, *The Living Stage: A History of the World Theater* (Englewood Cliffs, NJ: Prentice-Hall, 1955), 433 passim. Macgowan was an influential drama critic, editor, and producer; as well as a director, along with Jones and Eugene O'Neill, of the Provincetown Playhouse, a prominent "little theater."

4 Needless to say, the history of colored lighting in the theater does not begin with Appia. As early as the sixteenth century, Sebastiano Serlio was putting light sources behind glass containers of colored liquid to light his productions. Rather, the early twentieth century witnessed an explosion of interest in and use of color and colored light both inside and outside the theater.

5 Adolphe Appia, *Music and the Art of the Theater (La Musique et La Mise en Scène)* Robert Corrigan and Mary Dirks, trans. (Coral Gables, FL: Miami University Press, 1962 [1898]).

6 According to Simonson, because Appia's volumes were never translated into English [until 1960], Craig was able to "impose himself as a prophet on the English and American Theatre." Lee Simonson, *The Stage Is Set* (New York: Theater Arts Books, 1932), 353.

the work of Appia and Craig. While expressive light was an important element for Craig, reflecting his bias against illusionistic settings and flat illumination, it was only one element of his insistence on dramatic synthesis. However, his high profile in America (compared to Appia) caused many here to consider Craig to be the originator of expressionist lighting.

Another important popularizer of colored light in the performing arts was the American dancer Loie Fuller. As early as the 1890s, Fuller was saturating the stage with colored light as an integral part of her dances. "She began by using vertical shafts of light projected upwards from beneath the stage. In these narrow cones of light, the dancers whirled, twisting shreds of gauzy fabric, while the beam was rapidly altered in colour; and the effect was like that of a figure enshrouded in a silent and iridescent column of flame."[7] Popular commentary suggests that the effects were stunning. Furthermore, the titles of Fuller's dances, such as the *Fire Dance,* the *Rainbow,* and the *Radium Dance* (dedicated to Marie Curie), themselves evoke a compelling spectacle—Fuller whirling on the stage swathed in yards of fabric, immersed in an atmosphere of dynamic, colored light.

These design strategies rapidly found their way to the United States. The first show utilizing European techniques probably was Winthrop Ames's 1912 New York production of Max Reinhardt's pantomime *Sumurun,* which featured colorful orientalist settings. Following Josef Urban's arrival in America in 1913, and his subsequent opulent designs for the Boston Opera Company, a set of practices was consolidated in America as the "New Stagecraft," central to which were expressionist lighting effects. The writings of Appia and Craig had been published in American trade magazines as early as 1910, but Urban's presence accelerated the adoption of new techniques.

The new stagecraft was especially successful in the so-called little theaters—small companies which sought to distance themselves from the overwhelming commercialization of major Broadway productions.[8] Two of the most famous practitioners of the novel illumination, Lee Simonson and Norman Bel Geddes, first found work in the little theaters. Adaptations of their innovative techniques soon began to surface in Broadway theaters. By 1915, Robert Edmond Jones had designed colorful sets, lighting and costumes for *The Man Who Married a Dumb Wife,* produced in New York by James Barker. These settings often were admired for their ethereal effect. The colorful atmosphere was said to convey an emotional resonance which could not be obtained by perspectival techniques. Leading designers such as Simonson, Jones, Bel Geddes, Henry Dreyfuss, et al., held that there was more meaningful expression in the mystical aura of projected scenery. Discussing Simonson's design for *Back to Methusaleh,* drama critic Kenneth Macgowan and Jones asserted that "[t]he landscapes [of projected

7 Adrian Bernard Klein, *Coloured Light An Art Medium,* 3rd ed. (London: Technical Press, 1937), 179.

8 The little theaters, along with periodicals such as *Theatre Arts Magazine,* defined themselves in opposition to commercial theater. See "What We Stand For," *Theatre Arts Magazine* 1:4 (August 1917): 149.

color] were not defined like huge oil paintings in false perspective. They went into some new category which, for the moment, defeated our analysis.... Ordinary stage pretenses cannot stand beside the spiritual plastics produced by light."[9] Colored light was invested with a quasi-religious dimension, an other-worldly quality unavailable through traditional stagecraft. The theater, now more than ever, offered access to a magical realm of peace and harmony, a mystical utopia of colored light.

Technological advances facilitated the new aesthetic. Electric border lights were first used in the European theater around 1910, while incandescent lights began to be positioned on the fronts of balconies in 1912. The invention of more powerful incandescent lights in 1914, combined with the new technology of colored gels, provided stage designers with more economical and subtle means of producing colored light environments.[10]

For theater artists, color was an emotional language not penetrated by ideology. It also was a communal force, one which could engage an audience in a profound emotional/spiritual experience. This mystical realm which the theater invoked through colored light also was important to the work of many American visual artists, in that color was widely perceived to signify a "higher" realm of feeling. Color was the predominant element in the popular work of the synchromist painters and the artists of "projected color." The close alliance between the arts of the theater and colorists in the visual arts was enhanced both by personal connections as well as by a shared aesthetic.

Between 1914 and 16, the synchromist artists Morgan Russell and Stanton Macdonald-Wright displayed a series of color-saturated abstractions in New York City. Apart from the obvious formal similarities between their art and the new stagecraft, the two owed a more obvious debt to the theater world, for it was the set designer Lee Simonson who first introduced them to one another.[11] Soon after having met, Russell and MacDonald-Wright dedicated themselves to a painting style grounded in colorism. In 1912, Russell coined the term "synchromism" to describe this body of work, meaning literally "with color." After successful exhibitions in Munich and Paris in 1913, the synchromists' work was sent to the United States, where it had a considerable impact not only on other American artists, but on the popular consciousness as well. "'Synchromist' Art Now Assails the Eye, Large Splashes of Color Found" crowed one New York City newspaper.[12]

Two years later, Russell and MacDonald-Wright attained their greatest American success at the *Forum Exhibition of Modern American Painters* at New York's Anderson Galleries. Organized by Macdonald-Wright's brother, the critic Willard Huntington Wright, the *Forum Exhibition* presented synchromism as an "art of pure color," eclipsing the colorism of Parisian modernists. Willard Wright also published two books on the history of art, *Modern Painting: Its*

9 Kenneth Macgowan and Robert Edmond Jones, *Continental Stagecraft* (New York: Harcourt Brace and Company, 1922), 76.

10 Dozens of new technologies facilitated the employment of color in the United States outside the theater. Synthetic lacquers, phenolic resins, spray-colored bulbs, floodlights, electro-mechanical switching systems, and gas-tube lighting all were introduced during this period.

11 Gail Levin, *Synchromism and American Color Abstraction 1910–1925* Exh. Cat. (New York: G. Braziller, 1978), 14. The Synchromists' interest in color was already engaged at this time, when Russell and Macdonald-Wright both attended the color-theory classes of Canadian artist Ernest Percyval Tudor-Hart.

12 *New York Press,* cited in Levin, 29.

Tendency and Meaning [1915] and *The Future of Painting* [1923]. In the first book, Wright concluded that synchromism was the logical end of modernist painting, the apotheosis of the easel picture. "Since the art of painting is the art of color, the synchromists depended entirely on primary pigment for the complete expression of formal composition. Thus was brought about the final purification of painting." [13]

The synchromist artists and their supporters argued publicly that color had a spiritual, uplifting resonance akin to symphonic music. "Mankind has, until now, tried to satisfy its need for the highest spiritual exaltation only in music. Only tones have been able to grip us and transport us to the highest realms.... Yet color is just as capable as music of providing us with the highest ecstasies and delights." [14] It was this sense of color as having a quasi-spiritual, even utopian, dimension that made it attractive to industrial designers, architects, and advertisers.

Willard Wright's second art primer, *The Future of Painting,* asserted that the future for the visual arts lay in the realm of projected light. "Already the future of the art of color is evident. The medium of the new art will be light: color in its purest, most intense form." [15] In this popular book, Wright predicted that the art of colored light would have an almost hypnotic effect on its viewers. "The art of color…is a highly intensified emotional stimulant… There is no escaping the effects of this art, once contact with it has been established. It is distracting and absorbing, and, when successfully conceived and executed, fixes the attention and produces a positive and poignant reaction—both intellectual and emotional." [16] In fact, this art of "projected color" already was being practiced across the United States. Artists including Van Deering Perrine, G.A. Shook, Mary Hallock-Greenwalt, Claude Bragdon, Thomas Wilfred, and Matthew Luckiesh all sought to make an art of "projected color."

The first large-scale performance using colored light as an art form occurred when Alexander Scriabin's tone-poem *Prometheus: Poem of Fire* was performed in New York City's Carnegie Hall in 1915 by the Russian Symphony Society.[17] Scriabin, a subscriber to theosophical beliefs, had relied upon a strict interpretation of aural / visual synaesthesia, equating the tone C with red, D with yellow, E with blue, A with green, etc.[18] The Theosophical Society originally had been established in New York City by Madame Blavatsky and Henry Olcott in 1875. Theosophists exalted mystical experiences, occult phenomena, and esoteric doctrine in their pursuit of spiritual fulfillment. Among their tenets was the belief that a special relationship existed between colors and emotional / spiritual states. Indeed, in her book *Thought-Forms,* theosophist leader Annie Besant went so far as to assert that mental states were directly translatable into the color spectrum.[19] Clearly, the work of the theosophists helped to popularize in the United States the idea

13 Willard Huntington Wright, *Modern Painting: Its Tendency and Meaning* (New York: John Day Company, 1914), 331.

14 Levin, 129.

15 Willard Huntington Wright, *The Future of Painting* (New York: B.W. Huebsch, Inc., 1923), 50.

16 Wright, *The Future of Painting,* 30.

17 An attempt at providing a colored-light accompaniment at the premiere in Moscow (1911) was unsuccessful because the equipment failed.

18 For a detailed study of *Prometheus,* see James Baker's article "*Prometheus* in America: The Significance of the World Premiere of Scriabin's *Poem of Fire* as Color-Music in New York, March 20, 1915" in Kermit Champa, ed., *Over Here: The First Exile* (Providence, RI: Brown University, 1989), 90–112. Baker contends that "the color-organ part is derived from the basic pitch structure of the work; it provides, in effect, a sort of fundamental-bass analysis of the composition."

19 Annie Besant and C.W. Leadbetter, *Thought-Forms* (London: Theosophical Publishing Society, 1905).

that color had transcendent, spiritual qualities.

At Carnegie Hall, the mobile color portion of Scriabin's *Prometheus* was projected on a small (eight- by ten-foot) screen constructed of layers of gauze. A projection machine, the "chromola," had been devised for this performance by engineers at New York's Edison Laboratories. At the concert, a sense of depth was obtained by projecting different colors onto different layers of the screen. Critics reported that the projected color portion of the performance was striking, although inadequately related to the music. The music, alas, did not fare as well. "To harmonize with such a score the colors thrown on the screen should therefore be equally hideous, whereas they are really beautiful." [20]

Scriabin's work achieved a brief moment of fame, but the most successful artist of colored light in the United States undoubtedly was Thomas Wilfred (1889–1968). In the 1920s, his "Lumia" compositions were praised by art critics and performed throughout the country. Wilfred, an acquaintance of Simonson and Jones, spent a lifetime refining his instruments and elaborating his beliefs in an art based on the manipulation of colored light. After his first public performance at the Neighborhood Playhouse in New York City on January 10, 1922, Wilfred's popularity soared and he toured continuously with his "clavilux" projector through 1933. The clavilux consisted of one or more powerful light projectors with variable focal lengths directing their beams through a carefully devised assortment of prisms, colored gels, and slides mounted on electric rotation devices. Wilfred's recitals of the 1920s often drew audiences in the thousands and received considerable acclaim from such prominent critics as Deems Taylor and Kenneth Macgowan. A typical performance consisted of a short speech outlining the aesthetic philosophy behind Lumia, followed by a presentation of six or eight pieces, each lasting from five to ten minutes. The pieces, such as *Triangular Etude* (1924) or *Study in Rising Forms* (1926), explored themes of movement—"unfolding," "advancing," "rising," etc. Wilfred also designed a number of architectural projects which would utilize Lumia, and while his works in this area were never commissioned, color became a dominant element for many architects of the 1920s.

Inspired partly by the color-atmosphere of the other arts, America's architects strove to produce exciting environments of color and colored light. These spaces were of the utmost importance in creating dazzling backdrops for consumption. Using brilliant color as signifiers of novelty, status, and success, architects and interior designers enlivened America's cityscapes with dramas of abstract beauty. "Terra cotta for the color age—The modern demand for permanent beauty in buildings is readily obtained through the use of COLOR." Advertising like this, which touted the colorful effects of building materials, became ubiquitous in the trade periodicals of the 1920s. In addition to terra cotta, other cladding materials such as brick and granite, inspired their manufacturers to

20 "Untitled," *The Nation* (March 25, 1915).

similar rhetorical excesses. Likewise, the producers of ceramic tile, steel partitions, colored concrete floors, etc., trumpeted the wondrous effects created by colorful interiors.

In the 1920s, there was enough variety of color choice available in brick, terra cotta, and other synthetic materials such as vitrolite and alate that color became the key to many building designs. One of the most prominent polychrome buildings of this era was Ely Kahn's Park Avenue Building (New York City) of 1928. Kahn had spent years field-testing the tonal values of brick and terra cotta, finally deciding upon an ornamental scheme consisting of magenta red, black, ochre, and blue/turquoise. These colors were then applied systematically in an attempt to integrate them with the general forms and decorative details of the structure.[21] Ralph Walker designed several more colored buildings on the East Coast. His most famous was New York's Western Union Building (1928), which was constructed of nineteen(!) shades of brick, rose colored at the base and passing through the spectrum to a pinkish orange near the top. The color of the terra cotta for Raymond Hood's McGraw-Hill Building (1931) was carefully controlled by the architect, who was obsessed by the idea of creating a balanced color harmony. "The blue-green glazed surface of the terra cotta responds readily to the changing sky colors. Under a bright blue sky, the color is correspondingly bright and blue. In the light of dawn, it picks up opalescent tints that change radiance with the rising of the sun.... There seems to be some relationship between the blue-green color and the many sky colors, resulting in its color always being a harmonious complement." [22]

Meanwhile, in Los Angeles, Claude Beelman was responsible for two stunning colored exteriors. The Eastern Columbus Building (1930) sported blue and green terra cotta cladding, with gold ornament highlighting the windows, entrances, and cornice. His Banker's Building, also completed in 1930, was clad in a turquoise hue.

Polychrome architecture often was supplemented by colorful lighting at night. While color had been an important part of floodlighting as early as 1915 at the *Panama Pacific Exposition*, it was not widespread until the early 1920s. In the 1910s, it was generally too expensive to use theatrical lighting outdoors. Glass slides, gels, and naturally colored glass lamps required a great deal of maintenance and were costly to replace. However, in 1922, the invention of the sprayed color lamp allowed for more economical colored light spectacles.

The years 1924 to 1933 saw numerous examples of color floodlighting, sometimes kinetic, throughout the United States. Irwin S. Chanin, owner of the Chanin Construction Company, compared the lighting of his New York City tower to the effects created by stage designers. The Chanin building was illuminated in 1929 with a system that was capable of producing two-hundred and twelve differ-

21 Leon Solon, "The Park Avenue Building, New York City," *The Architectural Record* 63, April 1928, 289–297.

22 Arthur North, "But . . . Is It Architecture?" *American Architect* 141: 2603 (January 1932): 28–31.

23 *New York Times* (January 14, 1929): 42.

ent decorative schemes.[23] Glen W. Parrish's John H. McClatchey Building (Philadelphia, 1929) featured an elaborate mobile color system. The three lower stories were brilliantly lit with static color spotlights. The fourth story, however, featured a crown of mobile lighting that produced thirty color changes every ten minutes. The system consisted of six distinct floodlighting systems, each in a different color. In Los Angeles, the 241-foot Atlantic-Richfield Oil Building (1929) employed almost every method of color and light spectacle available. The structure was faced with gold and black panels which were floodlit at night with three-hundred and eighty two projectors. Spotlights colored with blue and gold accents (the company colors) in the window arches enhanced the polychrome symphony. Finally, the 125-foot tower atop the main building displayed a four-sided colored sign, and was capped with a powerful searchlight.[24]

The apotheosis of colorful architecture probably was reached in the buildings at Chicago's *Century of Progress* exposition (1933–34). This world's fair, designed by a team of prominent architects with a color scheme by theater artist Josef Urban, was visited by almost fifty million patrons during its two-year run. The exteriors of Urban's polychrome architecture were enhanced by an enormous concentration of artificial light, drawing 3,000 kilowatts of current, and using 150,000 incandescent lamps, as well as miles of neon and mercury vapor tubes. Scattered around the exposition were forty-one three-kilowatt searchlights, 3,200 floodlights, and 277 underwater floodlight projectors, totaling twenty-one billion candlepower.[25] By the late 1920s, color and colored-light environments had become ubiquitous in American public spaces. They could be experienced in the theater, the art gallery, on the streets of major cities, and at performances of the popular clavilux and its siblings. Nowhere, however, was color more prominent than in the visions of American consumers.

In the 1920s, American merchandisers vastly increased their deployment of color. Retailers, advertisers, and designers used this visual code to spur the consumption of commodities. The most high-profile industry in the United States in the late 1920s was the automobile industry. It was there that color was first introduced to consumers on a large scale.[26] Technologically, the most important development facilitating the widespread introduction of color into consumer goods was the invention by DuPont in 1923 of the nitrocellulose lacquer called by its trade name "Duco." In coordination with General Motors, Duco was used first on GM's 1924 "True Blue" Oakland.[27] (Before the introduction of the Oakland, color had been available only in the luxury market.) More important, Duco was quick-drying, cutting almost four weeks off the time it took to complete a car; autos which had previously required two to four weeks to paint could now be completed in a single shift. In 1925, nitrocellulose lacquers were made available to the entire automobile

24 For more on this topic, see Timothy Rub, "Lighting up the Town: Architectural Illumination in the Jazz Age," *Architectural Record* (August 1986): 73–77.

25 Untitled press release from *A Century of Progress* Division of Publications dated September 9, 1933. Chicago Historical Society. *A Century of Progress Collection*.

26 David Gartman. "Harley Earl and the Art and Color Section: The Birth of Styling at General Motors," *Design Issues* 10: 2 (Summer 1994): 3-26 (reprinted in *Design History: An Anthology,* Dennis Doordan, ed. (Cambridge, MA: MIT Press, 1995).

27 During the 1920s, the DuPont Corporation owned more than twenty percent of the common stock of General Motors Corporation, explaining GM's early access to this important new color technology. See DuPont de Nemours & Co., *Annual Report 1925* (Wilmington, DE: 1925).

28 The *Saturday Evening Post* article "The New Age of Color" (January 21, 1928): 22 also paid homage to the inventors of lacquers who had made the new age possible. Duco also was utilized to refinish used cars during the late 1920s.

industry and, by 1927, they were used for a variety of consumer goods including kitchen appliances.[28] Between 1927 and 1930, the new car market faltered although the consumption of lacquer doubled, as color became a dominant visual code of retailing.

Alfred Sloan, in his autobiography *My Years with General Motors,* described the effects of the introduction of lacquers which made possible "the modern age of color and styling." [29] Sloan, General Motor's Chairman in the 1930s, recalled that colored lacquer quickly became the fundamental design tool of GM's Art and Color Section. At GM, the late 1920s saw styling become a scientifically managed part of the production process. By 1927, styling had become, in Sloan's view, at least as important a part of the corporation's business as engineering. The engineering of useful automobiles, the precept which had, until then, dominated the automobile industry, was soon eclipsed by the engineering of consumption.[30]

1927 was a turning point in terms of the use of color in the automobile industry. In that year, production was stopped on the Ford Model T, the car of which Henry Ford reportedly had said, "One could have it in any color so long as it was black." Ford finally heeded the desires of his customers who "were no longer content…to roar slowly uphill with a weary left foot jammed against the low-speed pedal while robin's-egg blue Chevrolets swept past in second." [31] In 1927, the Ford company began production of its first car available in color, the Model A. Ford's unprecedented two-million-dollar advertising campaign saturated the print media. "The minute you see the picture of the new Ford, you will be delighted with its low, smart lines and the artistic color combinations. There, you will say, is a truly modern car." [32]

This "chromatic revolution" was amply documented in most popular magazines of the period. It was especially prevalent in advertisements, which often were the only four-color pages in otherwise black and white periodicals.[33] Specialty magazines, and certainly those which specialized in consumer-goods industries, were replete with references to the new age of color. For example, a perusal of *Home Building* (a midwestern contractor's magazine) for the years 1927 to 1928 finds a plethora of color-focused advertisements. Industries such as the Maple Flooring Manufacturers Association ("The new color enchantment in hard maple floors"), Cyclone Safety Shingles ("Colored roofs add to beauty"), Face Brick ("Endless blends of everlasting color"), Logan-Long Roofs ("Color! What a wonderful range the Logan-Long line offers!"), and the Crane Company ("A tiny bathroom, or one as big as a double bedroom; both are given beauty by the wizardry of color.") predicated their advertisements on the desirability of color in one's surroundings.[34] However, the most significant discussion of the commercial uses of color occurred in the pages of magazines geared toward businessmen.

29 Alfred P. Sloan, Jr., *My Years With General Motors* (Garden City, NY: Doubleday, ilc., 1964).

30 Sloan, 264.

31 Frederick Allen, *Only Yesterday An Informal History of the Nineteen Twenties* (New York: Harper & Brothers, 1931), 162.

32 Quoted in Allen Churchill, *The Year the World Went Mad* (New York: Thomas Y. Crowell Co., 1960), 281. Churchill records that more than one million people came to see the Model A on the day of its debut in New York City alone. More than 2,000 newspapers had carried full-page advertisements in the days preceding the car's introduction to the public on December 2, 1927.

33 For a discussion of the introduction of color into print ads, movies, and television, see Neil Harris, "Color and Media Some Comparisons and Speculations," *Cultural Excursions Marketing Appetites and Cultural Tastes in Modern America* (Chicago: The University of Chicago Press, 1990), 318–336.

34 Advertisements from *Home Building* in their respective order: June 1928: 49; June 1928: 3; June 1927: 65; November 1928: and back cover; August 1928: 64.

Fortune magazine, published by Time Incorporated, made its first appearance on newsstands in February 1930. Its advertisements sought to capitalize on the contemporary fascination with color—a fascination which, of course, those same advertisements were themselves producing. Early issues ran full-page advertisements for Hercules Powder Company, a maker of nitrocellulose lacquers ("It is no longer enough to produce merchandise that is well made, wears well, is useful"),[35] and General Electric's National Lamp Works ("The University of Light"),[36] two important purveyors of color and light. As a complement to these advertisements, the very first issue featured a long article titled "Color in Industry," which discussed the ubiquitous use of color in consumer goods.[37]

"Color in Industry" detailed the fact that an overwhelming shift recently had occurred in Americans' and American businesses' attitudes towards color. "For during the past few years, a great pail has up-ended itself over the American scene, has splashed our household goods and gods with a rich, warm stream of flat, bright color." The article at first focused on the use of color in domestic spaces, comparing the home of 1925 with the home of 1928. According to *Fortune*, the earlier home had been filled with natural wood stains, and black, "or some dull, dark color allied to blackness" pots and appliances. The home of 1928, however, was a veritable symphony of color. "Here so utilitarian an object as a sink was purchased from a color range of T'ang Red, Orchid of Vincennes, Royal Copenhagen Blue, Ivoire de Medici, St. Porchaire Brown, Rose du Barry, Ionian Black, Clair de Lune Blue, Ming Green, and Meissen White." [38] While the ascription of unrelieved drabness to homes before 1925 is an obvious exaggeration (as color had clearly played a role in home decoration for centuries), it is true that the middle 1920s saw an explosion in the use of color for interior fixtures (especially in the bathroom), kitchen appliances, and floor coverings. In 1928, the Richardson & Boynton Company even declared that "Color Enters the Cellar" in the form of a bright blue boiler.[39]

The body of the article in *Fortune* detailed many of the new introductions of color in products. The author listed several product packages which had been colorfully redesigned in the late 1920s, and had secured "gratifying sales increases." Lifebuoy Soap, Bokar Coffee, Kotex, and Packer's Shampoo all had begun to use colored packaging to secure larger shares of the consumer marketplace.[40] In 1928, Macy's introduced the Red Star iron, which sold tremendously on the basis of its red molded plastic handle. The late 1920s also saw the introduction of dyed petroleum products (gasoline), such as red Socony Special and Pure Oil's blue motor oil. Not only automobiles and their associated products, but trains (New York's Blue Comet, Chicago's Red Bird), Pullman cars, and planes were employing new color schemes. Fortune quoted Pullman executive James Keeley: "Color is becoming more and more of a selling urge." [41]

35 *Fortune* (February 1930): 2.

36 *Fortune* (February 1930): 29.

37 "Color in Industry," *Fortune* (February 1930): 85–94.

38 "Color in Industry," 85. The kitchen came in for more than its share of colored products. "Take the same item, a gas range for instance, make one in the old style with black handles on the oven doors and gas cocks, with the stove proper in either black or white enamel. Take the same stove and have it enameled with one of the pastel shades, have the oven handles and gas cocks made of colored casein . . . and see the results on the sales of the two stoves." From "Color in Electric Iron Handles," *Plastics and Molded Products* 4:7 (July 1928): 398.

39 *House Beautiful* (January 1928), cited in Roland Marchand, *Advertising the American Dream: Making Way for Modernity 1920-1940* (Berkeley: University of California Press, 1985), 126. Marchand includes a discussion of the color explosion on pages 120– 27.

40 "Color in Industry," 93.

41 "Color in Industry," 87.

"Why all the color? What is the limit, if any?" These questions led off a 1930 article in *Advertising Age.* The article reported, predictably, that advertising art directors used color for its emotional appeal. "It can be used like music to achieve a particular reaction." The consensus was that colorful print ads were particularly effective in advertising when they were used to depict colored products to the consumer.[42] This was the case for Sherwin-Williams, a paint company which, via colored ads, exhorted consumers to repaint their homes according to the seasons—warm colors for the winter and cool ones for the summer months.[43]

"Today, color is the modern note everywhere. We have special color effects in bathrooms, kitchens, cooking utensils, house furnishings, and even at night some of us climb into bed between colored sheets."[44] Interior decorators often expounded on the emotional effects of colored rooms during this period. Florence Cockerham suggested that a housewife could "radiate her own personality in her kitchen" through appropriate color selection. Similar claims were made by bathroom-design companies, which attempted to promote color as a hallmark of individuality. Mosaic Tiles crowed, "First of all, *color and individuality.*"[45] The kitchen and bathroom were the focus of manufacturers' attention because the introduction of color could be promoted in connection with the purchase of new appliances and fixtures. Consequently, these rooms were the most frequently redesigned part of the average middle-class home.

During the 1920s, women's make-up, which previously had been promoted as discreet and imperceptible, blossomed with bright swaths of color. Martin Battersby has noted that, as late as 1919, colored beauty products were still not widely advertised, a situation which was soon to change.[46] Around 1920, colorful rouge and lipstick came into vogue. Soon, *Ladies Home Journal* began to include advertising for lipsticks that reassured the consumer: "It's comforting to know that the alluring note of scarlet will stay with you for hours."[47] A new emphasis on the cosmetic adornment of women's faces gave rise to a rainbow arsenal of products that complemented the brilliant hues of jewelry and clothes.

The investment of mass-produced goods with social and artistic status was the job of the professional designer. In the United States, many top designers were culled from the ranks of prominent theater artists, and the profession soon included Norman Bel Geddes, Robert Edmond Jones, Lee Simonson, Josef Urban and Henry Dreyfuss. The most famous designers were given total control over the design of products, and amassed large individual fortunes. As early as 1931, for example, Bel Geddes was able to command fifty-thousand-dollar advances on royalties. Considering that some products saw sales gains of more than seven-hundred percent after being visually recreated, the potential profit was enormous.

42 "Color Strikes Deep in People's Minds," *Advertising Age* 1: 23 (June 1930): 3.

43 This advertisement anticipated Josef Urban's "color geography" at the Chicago's Century of Progress exposition, where he planned for warm colors on the south sides of structures, and cool colors on the north sides.

44 F.J. Cadenas, "Colorama Lighting in the Ballroom of the St. George Hotel, Brooklyn, NY," *Transactions of the Illuminating Engineering Society* 25:3 (March 1930): 282–91.

45 Florence Cockerham, "Color Refreshes the Kitchen," *Home Building* (August 1928): 26-27. The Mosaic Tile advertisement can be found in *The Architectural Record* 64:4 (October 1928): 36.

46 Martin Battersby, *The Decorative Twenties* (New York: Whitney Library of Design, 1988 [1969]), 137.

47 *Ladies Home Journal* (June 1922): 133.

Some of the industrial designers' most important work was the redesign of the packaging of retail goods. Reflecting a measure of artistic elitism, this function was, in fact, called "packaging," not "industrial design," but was still avoided if possible by the top designers. During the 1920s, many brands reconfigured their product packaging in an effort to increase consumption. "Slowly, quietly, unobtrusively, the package has revolutionized modern merchandising. It has changed the buying habits of a nation." [48] One of the most important elements of a new package was color. Wheatsworth Biscuits Company, Comet Rice, Liggett's Candy, and Adjust-Lite Lamps were just a few of the many companies which repackaged their products in the 1920s using new and brighter colors. Business consultants advocated the purchase of color wheels so that advertisers and marketers would be able to choose the best tones for each product. The deployment of color in packaging was further supported by academic psychologists, several of whom developed a large literature devoted to the psychological effects, including attention values and emotional responses, of certain colors and color combinations for business use.[49]

One final area of design was the construction of shop window displays. This "new art of commercial display" was deployed to create appropriately dramatic settings for merchandise. "Beautiful exhibits of merchandise are on view…having usually a conventional setting formed by an architectural background or simply a painted screen, against which the rich colors and textures of the goods blend in a glowing pattern of artificial light. They are like scenes from a theater." [50] Thus, theater designers employed their talents to create controlled environments of colored light to develop exciting scenes-starring products.[51] These "scenes from a theater" utilized colored light combined with colorful costumes (packaging) to present a seemingly attainable world of unlimited pleasure.

The new employment of color coincided with an increasing focus on consumption among retailers. An article in the advertising journal *Printer's Ink* termed this trend the "Dawn of the Distribution Age 1922–29." [52] In the aftermath of World War I, thousands of back orders for construction machinery, railroad equipment, and a variety of retail goods including automobiles had been quickly filled by an industrial establishment still geared for war. Productive capacity, spurred by new machine tools and the rationalization of labor promoted by Frederick Taylor and Henry Ford, had expanded tremendously over the preceding few decades. The fundamental demands of American society for useful goods could be easily met, and industry turned its attention to increasing the consumption of goods.

Color played a key role in this shift in the United States' economy toward the dominance of consumption. Henceforth, products would be marketed more and more on the basis of their supposed intangibles, the aura which an effective marketing

48 Richard Franken and Carroll Larrabee, *Packages That Sell* (New York: Harper & Brothers Publishers, 1928), 1.

49 Franken and Larrabee, 58–73. Franken himself was a "Lecturer on the Psychology of Advertising" at New York University.

50 John Taylor Boyd, Jr., "The Art of Commercial Display," *The Architectural Record* (January 1928): 59–66.

51 William Leach, *Land of Desire Merchants, Power, and the Rise of a New American Culture* (New York: Pantheon Books, 1993).

52 "Dawn of the Distribution Age 1922–29," *Printer's Ink* 184: 4 (July 1938): 320–26.

campaign lent to a given object. A 1928 article in the trade magazine *Plastics and Molded Products* pointed out that "[t]oday the public demands color in the articles it purchases. This applies not only to objects in which one would ordinarily expect color, but also to articles that would appear to have only a utilitarian purpose." [53] The onset of the color age represented a new and more effective cathecting of desire on to commodities. Jean Baudrillard theorized the situation this way: "'Free to be oneself' in fact means: free to project one's desires onto produced goods.... The goal is to allow the drives that were previously blocked by mental determinants (taboo, superego, and guilt) to crystallize on objects, concrete determinants where the explosive force of desire is annulled and the ritual repressive function of social organization is materialized." [54]

Deeming it important to an understanding of the relationship between objects and the utilization of color, Baudrillard attempted to define consumption apart from the material act of purchase.

> *In order to become an object of consumption, the object must become sign;* that is, in some way it must become external to a relation that it now only signifies, a-signed *arbitrarily* and non-coherently to this concrete relation, yet obtaining its coherence, and consequently its meaning, from an abstract and systematic relation to all other object-signs. It is in this way that it becomes "personalized," and enters in the series, etc.: it is never consumed in its materiality, but in its difference.[55]

This aspect of the system of "sign value" was especially operative in the use of color—a single object achieved its status in part from its association with colorful artistic spectacles. This juxtaposition was a supremely effective marketing tool because it invoked neutral discourses, outside the space of the commodity, via color.

53 "Color in Electric Iron Handles," *Plastics and Molded Products* 4:7 (July 1928): 398. This issue of *Plastics and Molded Products* also contains advertisements for manufacturers of colored plastics. "Color" screamed the red full-page ad for Karolith Corporation (362). A few pages away, an article trumpeted the benefits ("From the standpoint of color, it is a revelation.") of molded plastics (397).

54 Jean Baudrillard, *The System of Objects* [1968], Mark Poster, ed. and trans. *Jean Baudrillard Selected Writings* (Stanford: Stanford University Press, 1988), 13. Baudrillard is quoting from an American book, *The Strategy of Desire,* by Ernest Dichter (Garden City, NY: Doubleday, 1960).

55 Baudrillard in Poster, 22.

Product Development and Changing Cultural Landscapes—Is Our Future in "Snowboarding"?

Tanja Kotro and Mika Pantzar

Introduction

Thomas Alva Edison, "the Wizard of Menlo Park," was famous for his inventing talents. Today, he is increasingly well-known for his lack of cultural sensitivity in inventing the "entertainment industry." [1] Edison was ill prepared to imagine and create an industry of entertainment. He lost fortunes both in the record player business and the movie business. Edison's prior experience was in sophisticated production technology and products' use strictly for business. Therefore, for a long time, he believed that his phonograph would mainly fit the expanding markets for business machines such as typewriters and telephones.[2]

As Edison and his colleagues contemplated putting the new phonograph on the market, they used the sewing machine and typewriter business as their model.[3] Instructors were particularly important in introducing new technologies to the general public. As Edison noted: "Even so simple an instrument as an improved flatiron involves a certain amount of explanation by an 'expert' before it can be intelligently introduced into domestic use." [4]

In the entertainment business, the old virtues of work and sacrifice were attacked by a consumer culture of leisure and indulgence. Edison failed to recognize this cultural shift one hundred years ago. In this article, we maintain that both the successes and failures of companies in the third millennium might be understood in terms of the innovators' ways of representing the end-users and the products they use. Current digital dreams originate from the seeds of telegraph and telephone technology.[5] However, today it is clearer than ever that business-to-business models are inapplicable as digital technology is entering the lives of ordinary people.

In Edison's time, user representations were predominated by the adult masculine heroes of intellectually oriented business ("organization men"). Our educated guess is that, in the future, it is likely that young, androgynous heroes of adventure are replacing these well-organized businessmen. We use the term "snowboard kids" to refer to this new consumer ideal which is characterized by freedom, self-realization, and risk. In particular, we would argue that the self-experienced knowledge and ideals of business leaders and innovators, as well as the implicit user representations hidden

1 Bernard W. Carlsson, "Artifacts and Frames of Meaning: Thomas A. Edison, His Managers, and the Cultural Construction of Motion Pictures" in *Shaping Technology/Building Society: Studies in Sociotechnical Change*, Wiebe Bijker and John Law, eds. (Cambridge, MA: MIT Press, 1992).

2 Paul Israel, *Edison, A Life of Invention* (New York: John Wiley & Sons, 1998), 277–278.

3 Ibid., 287.

4 Ibid., 287.

5 Donald A. Norman, *Things That Make Us Smart: Defending Human Attributes in the Age of Machine* (Reading, PA: Addison-Wesley, 1993).

in pictures and images of, say, snowboard kids, are very important in reflecting—and possibly furthering—a more general change in culture.

Models and ideas travel from one "product milieu"[6] and consumer group to another. Products that, at first glance, seem to have nothing to do with each other are related at least in the concept generation phase. Edison viewed the future phonograph through the "lenses" of sewing machines and typewriters. Again, in the 1990s, the mobile phone industry imported its mental models from the car and watch industry (Nokia). At the same time, the developments in outdoor lifestyle products were very carefully monitored by the watch industry-and vice versa (Nike, Suunto). With "digital convergence," Sony's consumer electronics took its stimulation and allies increasingly from areas such as the cultural industries (Sony / CBS Records / Columbia Pictures), sports (Walkman), computers (Playstation), medicine (hearing aids), and professional instruments (camcorders).

However, we suggest that these interactions have a more general significance. We want to emphasize the role of mediators—persons, images and surrounding products—introducing new cultural landscapes into product development. By the "cultural landscape" of a product, we mean the totality of cultural interpretations and meanings that are related to a specific product.[7] These processes tend to stabilize new consumer images and product representations. When mediators such as consultants or media persons move a cultural landscape (through speech, text, and images) from one industry to another, they simultaneously simplify the existing representations. The following case stories may provide some food for thought.

We chose three empirical cases—Suunto, Nokia, and Sony—which complement each other. The first of these, Suunto, currently is in its early stages of expansion into new product categories. The data on this company are primarily derived from interviews made in 1999–2001 (T. Kotro). Nokia, on the other hand, has a longer experience in international brand making. Our observations are based on interviews and the other author's analysis of various product development processes during 1995–2001 (M. Pantzar). Secondary data were taken from a number of Finnish academic projects related to the company.[8] The data on Sony—the most well-known of the three—are based mainly on secondary material.[9] Some interviews (to wipe out possible errors) were made at the company's Finnish branch office. The three cases complement each other in an interesting way. They are similar in their exceptionally obvious shift from technology drivenness to market orientation. And, in spite of their many differences, these firms increasingly have become models for imitation and benchmarking.[10]

6 Victor Margolin, "The Product Milieu and Social Action" in *Discovering Design: Explorations in Design Studies,* Richard Buchanan and Victor Margolin, eds. (Chicago and London: The University Press of Chicago, 1995).

7 The concept of cultural landscape of a product resembles Victor Margolin's idea of product milieu: "...to represent the aggregate of objects, activities, services, and that fills the lifeworld." (Margolin, "The Product Milieu," 1995, 122). Margolin uses the concept in an article that tends to identify the user as a collaborator with the designer. A thorough theoretical discussion about representing consumers can be found in: Stuart Hall, ed., *Representation. Cultural Representations and Signifying Practices* (London: Sage, 1997); Barbara Stern, ed., *Representing Consumers: Voices, Views, and Visions* (London: Routledge, 1998). We use the term "representation" in two senses: first, to represent something is to describe it., and second, "to represent also means to symbolize, stand for, to be a specimen of, or to substitute for; as in the sentence, 'In Christianity, the cross represents the suffering and crucifixion of Christ.' " (Hall, *Representation:*1997, 16).

8 For a more complete set of data, see A. Ainamo and M. Pantzar, "Design for the Information Society: Learning from the Nokia Experience," *The Design Journal* 3/2 (2000): 15–26.

9 Paul Du Gay, Stuart Hall, Linda Janes, Hugh Mackay, and Keith Negus, *Doing Cultural Studies: The Story of Sony Walkman* (London: Sage, Open University, 1997); Paul Kunkel, *Digital Dreams: The Work of the Sony Design Center* (New York: Universe Publishing, 1999); Sony Corporation *Genryu. Sony's 50 Years* (Sony Corporation, Japan, 1996).

10 See, e.g., Bernd H. Schmitt, *Experiential Marketing* (New York: Free Press, 1999).

Figure 1
Suunto Advizor wrist computer was released in August 1999. It was the first wrist computer in the product line with heart rate monitor, which made it a success among sports people.
(Source: Suunto 1999. Suunto 2000. Suunto is registered trademark of Amer Group Plc).

Suunto: From Technical Know-how to Maximum Pleasure

"Suunto's Wrist-top Computers offer the outdoorsman all features necessary to get maximum pleasure out of the outdoor experience." [11]

Until recently, the Finnish corporation Suunto was known mainly for field compasses and diving instruments. It is the world's biggest manufacturer of field compasses and a leading manufacturer of diving instrumentation.

In 1996, Suunto began to develop a new product category: a watch-size computer with altimeter, barometer, compass, and watch for demanding outdoor use. At first, the new product development process was driven by the company's know-how in making small equipment with numerous technical details and functions, gained through the manufacture of compasses and diving instruments.

Soon, however, the problems of emerging lifestyles arose, together with the more technical considerations. Today, Suunto's diving computers are market leaders, acclaimed by professionals and coveted by amateurs. As managing director, Dan W. Colliander points out,

> Our largest product in the USA in terms of turnover is our top-of-the-range titanium dive computer, which costs $1,400. Before we joined the market, the average price for the dive computer was $250.... Many find it important to be not just divers, but titanium divers. Market growth is constrained only by a lack of components.[12]

Thus, in the final years of the 1990s, the product development process was converted quite rapidly from a technical-driven intention into a market-driven project. The meanings connected to the product became more and more important. The most significant of these, it turned out, had to do with the product environment of watches, on the one hand, and the needs and values of outdoor culture and the human being challenging him / herself in outdoor life and adventure. The image of the product became as important as its technical performance. Also, more than ten per cent of the product development cost was the design of the product.

At the same time, as Suunto was developing the outdoor computer, the sports gear manufacturer, Nike, launched its "Triax" collection of digital watches with an exceptional, diagonal form. An effective marketing campaign was initiated, and the Triax attracted a lot of attention at the Salt Lake City outdoor retail fair of 1997 and in trendy magazines. Even though the digital sports watch and the multifunctional computer for outdoor use were not considered to fall into the same product category, Suunto's management and marketing people noticed that a new market, the market for fash-

11 www/suunto.fi/wristop.

12 "Suunto Blazes a Trail Towards New Market," *Bluewings*, March, 2001: 66–68.

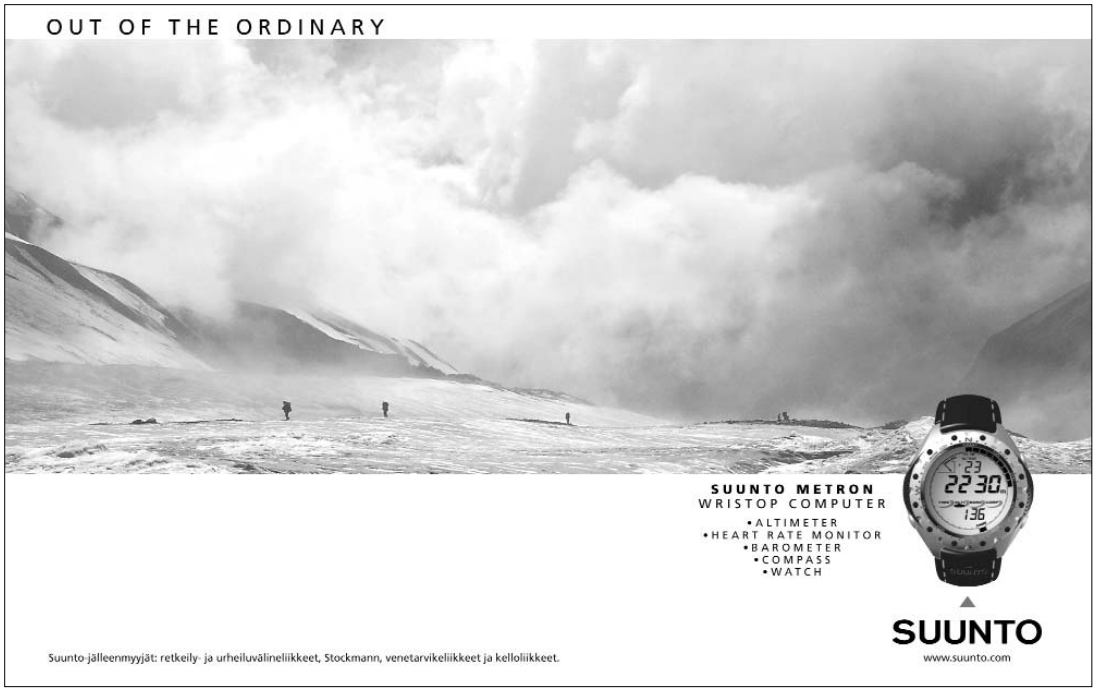

Figure 2

Metron is the latest model with heart rate monitor. Because of its aluminium casing, this model is widely used not only with sports clothes but also with suit. (Source: Suunto 2000. Suunto 2000. Suunto is registered trademark of Amer Group Plc).

ionable, comparatively expensive watches, was emerging among Western consumers-also for Suunto's new product. Influenced by the launch of Nike's Triax, the design concept of Suunto wrist-top computers was shifted to a more fashionable direction. The first outdoor computer, "Vector," was launched in 1998. In the following year, Suunto's Vector wrist-top computer received an award in the Pro Finnish Design competition for its innovative combination of technology, design and user friendliness.

The specific desirability of Suunto wrist-top computers is related to the context of adventure sports. In the U.S., where outdoor culture is not merely a hobby but more a lifestyle, this means that the product environment includes such things as clothes with special features for difficult weather conditions, and unique devices such as knives and tiny, powerful flashlights. The outdoor lifestyle is covered by strong brands such as North Face, and manifested in movies such as *Vertical Limit* (released in the U.S. in December, 2000), in which a group of mountain climbers falls into a gap on K2, the second tallest mountain in the world. Suunto, for its part, has created a strong brand by appealing to the market through professional climbers—for example, a Finnish mountain climber who has climbed many of the 8000-meter summits of the world, including K2. During his expeditions, this climber tested the wrist-top computers, and presented his feedback to Suunto's research and development people. Together with the test results, his appearance in the media gives visibility and credibility to the product. Recent advertisements of the outdoor wrist-top computer product line carry

images of cliffs and climbers, bringing Suunto closer to the current fashion trend also in watches, clothes, mountain bikes, and rucksacks at a more general level.

Let us next look at another example of transforming cultural landscapes—Nokia.

The Nokia Phenomenon: From Technical Devices Towards Fashionable Items [13]

In a crisis situation, companies typically seek to redefine their goals as well as their products. At the beginning of the 1990s, the Finnish company, Nokia, was facing a deep financial crisis. Under Jorma Ollila, the new CEO (hired from Citibank in 1984, and made President of Nokia in 1992), Nokia began shredding its television and computer divisions to evade almost imminent bankruptcy, and focused on mobile phones. Ollila voiced two slogans for a new business policy: "benefit-orientation," and "telecom-orientation, focus, global, value-added."

Nokia began to distance itself from the dominance of technical issues and the image of a sophisticated, and thus "demanding," technology. The new market-driven strategy was legitimized by the crisis situation. In 1991, Nokia hired a young 3M marketing executive, Anssi Vanjoki, to identify the marketing principles in rapidly growing industries, and make Nokia a household name. Through his background at 3M, Vanjoki had learned the art and science of continuous innovation. [14] After joining the Nokia team, Vanjoki studied the histories of companies that had developed successful brands—not only 3M, but also Daimler-Benz, Philip Morris, and Nike.

Anssi Vanjoki and the Nokia management team realized that the time needed to create a "megabrand" had to be measured in decades rather than days, weeks, months, or years.[15] To speed up the process, there was a need to transform Nokia's policy of multiple brands into a monolithic one-brand policy. This insight of his would remain unchanged, even though the market evolved much faster than anticipated and the products sold in excess of expectations.

In 1993, Nokia introduced its Mobile Phone 2100 series, for which the sales target had been set at 400,000—it sold 20 million.[16] One reason why the sales forecast failed was the fact that (especially with what is now the classic 2110 model) Nokia stumbled upon a new market segment. The company realized that mobile phones were diffusing extremely fast into the lives of "ordinary people." Consumers were using the phones for different ends than business users. For example, things such as fun and fashion were important attributes of the consumer experience.

The success and the insights gained with the 2100 made this series "the blueprint for how to get things done" [17] for Nokia. In 1994, Nokia's designers gained a critical lead over Ericsson and Motorola by introducing styling and fashion in their products.

13 This section rests on the ongoing research: Ainamo and Pantzar, Nokia—The Surprising Success of Textbook Wisdom, (2001) submitted *International Journal of Marketing*.

14 Stefan Thomke and Ashok Nimgade, Innovation at 3M Corporation: Harvard Business School Cases 9-699-012, 1998.

15 c.f., David A. Aaker, *Building Strong Brands* (New York: Free Press, 1996); Jack Trout, *Differentiate or Die: Survival in Our Era of Killer Competition* (New York: John Wiley & Sons, 2000).

16 "NOKIA's Secret Code," *Fortune* May 1, 2000: 31–38.

17 Ibid.

Figure 3
Model 2110 has been one of the most successful product in Nokia's history. Still today it represents the basic model of mobile phones.
(Source: Nokia, 1995. Nokia is registered trademark of Nokia Corporation).

Nokia allowed its customers to "customize" their mobile phones with accessories such as removable and exchangeable color "skins." Rather than paying attention only to price and function, Nokia's designers experimented with ways to insert new meanings into Nokia's existing products. Jorma Ollila introduced a new management philosophy: "Leadership in the most attractive business segments."

By the mid-1990s, Nokia people had realized that the miniaturization of the mobile phone did not suffice any longer. There was an evident need for more detailed product segmentation and new concepts related to the mobile phone such as business, classic, fashion, and "My first Nokia." Corporate-level scenario projects focused on novel consumer groups and user contexts. Contextual design was used, for instance, to take into account the diverse information challenges of everyday life. Through an ongoing organizational learning process, the people responsible for future scanning carefully studied two industries in particular: the automotive and the watch industries.

New product representations—e.g., fashion goods, cultural goods, and experience goods—and new cultural landscapes were introduced to the Nokia R&D and marketing people, who shared these views with each other. Future views converged as a result of numerous meetings and workshops. In 1998, a set of scenarios was presented to the top corporate administration. The slogan "A mobile information society" was one manifestation of this profound developmental process.

Nokia started the purposeful promotion of its mobile phones in order to build symbolic value and to win over the hearts of consumers. Nokia was among the first companies to visualize third-generation mobile terminals in 1997. The 3D pictures made by Nokia Design were distributed very quickly all over the world through various magazines and publications. Media coverage strengthened the symbolic dimension in Nokia's interaction with its customers and other interest groups, elevated its cultural status, and raised the value of its brand. Nokia now is the undisputed market leader in the mobile phone business, making it globally the fifth most valued brand across industries.[18] From 1999 onwards, Nokia began to present itself as the "world's leading *design house* for mobile communication." Accordingly, it launched its model 8210 during the 1999 Paris fashion week at the thirtieth anniversary celebration of Kenzo design. Its latest models are advertised in fashion journals including *Vogue*. We will address the logic of the fashion house promotion later. But first let us take another example of product transformation: Sony.

Sony: From Mechanical Devices to Digital Dreams

Sony experienced a severe crisis at the end of the 1980s. In 1988, Sony's designers agreed that something was not right: "We were supposed to be enjoying our work. We wanted to do great work, but lost our spirit. We were tired, for sure." [19] Sony was threatened by a worldwide economic decline and heavy competition from companies copying ideas that Sony had originally generated—e.g., the Walkman. The Walkman, when introduced in July 1979, was the first "lifestyle product," well before the concept had even been born.[20] Technological evolution also seemed to be slowing down, or at least development in the field of digital computer technology was much faster than in consumer electronics.

The people at the Sony Design Center recognized that their work "no longer lived up to the Sony ideal." This made them break from their normal routine during the winter of 1988–1989 to spend several weeks creating a series of concepts code-named Spirit: "... these concepts are not only profound in themselves, they contain the genetic code on which most of Sony's current designs are based, providing seeds that would root in the early 1990s and reach full flower in today's product line." [21] The giant corporation took its conceptual stimulation at that time from a variety of sources: "Im-

18 According to one estimate, its brand value is US $38,500 million. The brand values of Motorola (US $4,400 million) and Ericsson (US $7,800 million), its main rivals, lag far behind. For more information on the brand valuations of Nokia, Motorola, and Ericsson, see "The World's Most Valuable Brands 2000: Interbrand's Annual Survey" [www.interbrand.com/league_chart.html], September 2000. According to the same source, the values of the three brands are closely related to the total market capitalizations of the three companies. Nokia's total market capitalization is US$ 239,800 million, Motorola's is US$ 62,500 million, and Ericsson's is US$ 165,700 million.

19 Kunkel, *Digital Dreams*, 17.

20 Du Gay, et al., *Doing Cultural Studies*; and Kunkel, *Digital Dreams*.

21 Kunkel, *Digital Dreams*, 17.

ages of French restaurants, high-priced leather goods, Mercedes-Benz cars, and English country houses were photographed for the portfolio that the Design Center later created to showcase the work. The motto was: 'to appeal not only to the factory but also to humanity.' Here we see the genetic blueprint on which all later Sony designs are based." [22] Indeed—it was the genetic blueprint.

It is evident that cross-fertilization in the engineering phase is different than that in the design phase. Sony's published documents emphasize two major influences which guided the engineers: professional use (e.g., camcorders) and health technology (e.g., early headphones taking their ideas from hearing instruments and high-tech prosthetic devices). Sony designers today appear to take their starting point from various lifestyle and fashion products. Even more interesting and important, the designers see themselves as the "ultimate consumers:"

> We can often make educated guesses that result in products that remain ahead of the curve and, thus, pull the market in our direction.[23]

Tetsu Kateoka, who gave shape to the Sports Walkman and Discman at the end of the 1990s, shared the hobby of snowboarding with the younger generation. This influenced the ways in which intuition worked behind Sony's new products:

> The original inspiration was sports but, as I designed them, I found myself appealing to a younger audience that wasn't interested in the old sports clichés. The users I was trying to reach belonged to a new tribe. They loved skateboards and snowboards.... They span all socio-economic groups, include boys, girls and everything in between, speak their own language and have style to match. As a result, they relate to each other in ways that outsiders didn't understand.[24]

"Digital convergence," "creativity," (go and create) and "dreaming" dominate Sony's vocabulary in the new millennium. *Sony Style* magazine tells us about the digital dream:

> We help dreamers dream. Sony is a company devoted to the celebration of life. We create things for every kind of imagination.... We're here to pursue infinite possibilities. We allow the brightest minds to interact freely so the unexpected can emerge.[25]

From the company's point of view, the making of a market for new products is as important as is technical inventiveness. This is the message Akio Morita, one of Sony's founders, has delivered in several connections concerning the success of Sony.

One of the factors shared by the above three companies was their ability to "culturally reinvent" the products and consumers

22 Ibid., 17.

23 Ibid., 136.

24 Ibid., 153.

25 *Sony Style* Spring, 2000: 3–4.

they focused on. Their company slogans and advertising were gradually changing from technology-oriented goals toward the rhetorics of benefits, segmenting, and brands. Making a luxury item seems to be one of their ultimate goals. However, the meanings and substance of these luxury products vary. At the beginning of the product life cycle, the preferred attributes are different than towards the end of the cycle.

Cultural Reinvention of a Product

The above cases speak for the necessity of continuous product renewal. In the course of a product's life cycle, the original motivation behind buying the product changes. Quite generally, the product life cycles of technological devices seem to follow a domestication metamorphosis: e.g., from "toys" to "instruments," from "luxuries" to "necessities," from "pleasure" to "comfort," or from "sensation" to "routine." [26] The motives and needs behind buying and using technology are transformed in use. Products either become self-evident—and thus "invisible"—elements of everyday life, or they disappear from the context of consumption.

A reinvention of the product is needed to start the metamorphosis anew, for example, from a useful tool to an entertaining toy. This is exactly what General Motors did to cars in the 1920s.[27] In the 1990s, Nokia succeeded in transforming the mobile phone, which emphasized utilitarian user motives, to an object of pleasure and feelings. Reinventing and redefining the product brought the excitement and the "snob effect" back. Technical details and price sensitiveness, in particular, withdrew into the background.

In Sony's context, the phenomenon could be seen in the changing balance between engineering and design: "Just as engineering overshadows design in the morning of a product's life, at the end of the day the design is king." [28] At the end of a product life cycle, it is imagery, fashion, symbolism, and storytelling that become more apparent than technology:

> Visual fireworks, eye-candy designs, humor, functional gymnastic, and sophistication bordering on absurdity are all possible when a product nears the end of its life cycle.[29]

For instance, the first phase of the Sony voice recorder, the reel-to-reel period, was engineering-driven. The company focused on perfecting the mechanism and providing the best possible sound. The goal of the second, design-driven phase was to create an icon (model TC-50). And finally, "the third phase of design evolution involves giving the icon a statement ... a range of images that are infused with narrative, lifestyle references, and the strongest pull a design can exert: pure desire." [30] Pure desire! Or pure design?

Pure desire, we argue, requires an articulation of the corresponding needs and user ideals: "The Nokia 2110 has become an icon, a symbol for all cell phones." [31] One might claim that high-tech

26 Mika Pantzar, "Domestication of Everyday Life Technology: Dynamic Views on the Social Histories of Artifacts," *Design Issues* 13:3 (1997) Autumn: 52–65; Mika Pantzar, Tulevaisuuden kotiarkisten tarpeiden keksimisestä (*Inventing the Needs For the Future Home—On the History of Future Needs,* in Finnish) (Helsinki: Otava, 2000).

27 Pantzar, Ainamo, 2000.

28 Kunkel, *Digital Dreams*, 28.

29 Ibid., 33.

30 Kunkel, *Digital Dreams*, 35.

31 Nokia 2110 advertising campaign, 1995.

companies are truly approaching the fashion industry. Media coverage is becoming more and more important. Formerly, Suunto used to be known for field compasses and diving instruments, but mainly among retailers. It was not a well-known brand among ordinary consumers. Launching the wrist-top computer product line improved its visibility in lifestyle magazines, and increased its familiarity among the trendsetter consumers interested in design items.

The same happened, although on a different scale, in the mid-1990s when Nokia mobile phones increasingly began to appear in a new light in newspapers and magazines, as well as on TV and on the Web. Wide media coverage reified Nokia phones as cultural artifacts. Ever since its surprise hit with the 2100 series, Nokia has actively sought to "medialize" [32] its products by using visualization and media exposure to build its brand value.

Towards the end of the 1990s, both Sony and Nokia started to introduce themselves as design / fashion houses. Sony established the *Sony Style* magazine to "help people dream." Nokia's head designer goes on to say:

> We at Nokia do not follow trends. We try to set them. Being at forefront means that you really have to be in tune with what's happening in fashion, architecture, etc." [33]

But what does the ideal of a design / fashion house imply in practice? (We will come back later to the more general consequences.) But both Sony's and Nokia's published documents—Websites, advertising, press releases, etc.—emphasize the fact that digital technology does not develop as a one-way process from the designer's desk into the hands of the consumer. Instead, these documents indicate that interacting with potential users and co-creating a use for the product are central elements in the invention process—not merely the final end. Influencing and interaction thus are essential in the creation of high-tech fashion.[34] The Nokia Club for the users of the phone, for instance, serves both of these functions.

Certainly, there are many routes along which the influence of general trends and fashions travel. One reason for the similarities found in quite different products discussed here may be that companies tend to benchmark their products against same success stories. Turkka Keinonen, a designer in Nokia's usability group, describes very openly (and boldly) the way in which concept generation takes place in the company:

> Copying of ideas is a method rarely discussed in design literature. It is not considered very honorable and sportsmanlike...In the 'Condition' project, however, [solutions made by other designers / Kotro & Pantzar] were carefully and systematically studied.... In the project, several other products were bought and tested: portable CD and cassette players, their remote controls, radios worn around the neck

32 Juhani Salovaara, "The Forces Behind Design," *Muoto* 1:25–26 (2000).

33 Frank Nuovo, 'Design: Frank Nuovo,' www.nokia.com/phones/8850/frank.html February 10, 2000.

34 Ainamo and Pantzar, 2001.

> or wrist... heart rate monitors, radiophones, hearing protectors, goggles, meters for swimming, pocket knives, key rings, watches, etc. Compared to design based purely on user needs, there is one undefeatable advantage in copying of ideas. Ideas already are expressed in the language of solutions, as opposed to user needs, which are abstract and have to be translated into design solutions—a task that is anything but simple.[35]

Suunto's wrist-top computer is a luxury article in two senses. If used where it is designed to be used, in difficult conditions in adventure sports, it is a luxury because the hobby, in itself, is expensive and therefore exclusionary, requiring travel, free time, and costly equipment. If used in everyday life, for which it is not primarily designed, it is comparable with watches, but the price of the product makes it a luxury compared to ordinary digital watches. These categories also are seen in magazines: Suunto wrist-top computers, mainly the Vector, are presented either together with items such as snowboarding clothes, other compasses and altimeters, backpacks, knives, and sailing equipment, or with expensive watches and award-winning designs. Without highlighting the functional details, the product environment and reference is, therefore, one of expensive watches, often used as symbols of style and status. These wrist-top computers are made for "challengers" and "forerunners."[36]

At Suunto, the cultural landscape for the high-tech computer was found not only in computing or outdoor sports, but also in watches. Digital sports watches are mainly made by large companies manufacturing a wide range of fashionable sports equipment, from running shoes to backpacks. Even in watches, there are several categories that have to be understood to place a wrist-top computer among them. Obviously, fitness products, digital sports watches, jewel-like watches, and wrist-top computers all have different cultural landscapes.

The purpose of fitness products such as heart rate monitors to is help people improve their condition, and these products carry the image of health and comfort rather than of risk and adventure. It is not only simple technical details, product features, or design principles which are transmitted by these products. We can imagine that they contain whole philosophies of life to be exported or imported. In spring 2001, Suunto was taken as an example of Finnish internationalization and branding in *Bluewings,* Finnair's magazine for business travelers. The view given of the function of Suunto's products is interesting:

> As the world... becomes more globalized and mobilized, people have more of a need and desire for data on their environment at each moment, even in everyday life.[37]

35 Turkka Keinonen, "Off-line Wearability as a Design Driver," (in Finnish) in *How to Design Usability*, T. Keinonen, ed., (in Finnish) (University of Art and Design Helsinki, B61, Helsinki, 2000), 201.

36 *Suunto News*, 1999-2000, outdoor edition.

37 *Bluewings*, 2001: 67.

In the words of Suunto's managing director: "Knowledge increases control and a feeling of security in an ever-changing situation." [38] What is notable is the fact that it is not only environmental pressures but also the evolving perspective of self-control that generates market potential: "In the States today, people love competing to see who can ski most in a day—vertically, that is, going down the slope and back up again. Skiers have noticed that Suunto's Altimax wrist-top computer, originally designed for climbers, is exactly the instrument everyone needs to record proof of their own achievement." [39] Changing the cultural landscape of the product promotes new kinds of consumers, too. One might talk about self-fulfilling user representations and prophecies. Reality follows representations.[40]

What could be learned from the observations made above? First, the user representations hidden in, say, advertising clichés and images of pioneer consumers are, by no means, "innocent." Whenever a company invents a new good, it simultaneously constructs a consumer—as well as constrains him or her. This future consumer is represented, for example, in image boards, statistical graphs, journal articles, and images, both explicitly and implicitly. The representations necessarily originate from somewhere: from the product's history, from market research, and from the cultural landscapes in which the members of the product development team live. Second, these representations tend to move from one place to another through different carriers, or mediators. Third, it appears that companies such as Suunto, Nokia, and Sony probably are paving the way for a more general cultural shift in a direction in which the characteristic heroes are taken more and more from youth culture and from images of ultimate survivors.[41] The lives of businessmen seem to be held less often as the ideal. Thus, the fashion houses of technology evidently are approaching the realm of the cultural industries. Let us now focus on some general, although still very preliminary, conclusions that can be drawn from the above observations.

Discussion

User Representations Are Not Innocent

Dunne argues that, in user-friendly design, we as the users adopt the roles actually created by the human factors specialists of large corporations. User-friendliness has helped to naturalize the electronic objects and also the values they embody.[42]

Future consumers, of course, exist only in the imagination. Company people recognize that, "if you ask the public what they think they will need, you will always be behind in this world. You will never catch up unless you think one to ten years in advance, and create a market for the items you think the public will accept at that time." [43] Suunto's wrist-top computer design consultant expresses this same idea:

38 Ibid., 67.

39 Ibid., 67.

40 Mika Pantzar, "Consumption as Work, Play and Art-Representation of Consumer in Future Scenarios," *Design Issues* 16:3 (2000) Fall, 1–20.

41 Most technology documents of today could still be characterized as old-fashioned technological determinism and a lack of user orientation, e.g., Motorola documents: "Bluetooth Makes Our Vision a Reality" (http:www.motorola.com/bluetooth/vision/vision.html), "Find Out How Technology Will Change Your Life!" (http:www.sx2.net/wwow/mya_flash.html) [April 5, 2000].

42 Anthony Dunne, *Hertzian Tales: Electronic Products, Aesthetic Experience, and Critical Design* (London: Royal College of Art, Computer Related Design, Research Studio, 1999), 30.

43 One of the founders of Sony Corporation, according to Kunkel, *Digital Dreams*, 14. The latest market-oriented views avoid, with good reason, giving too much weight to current consumers at the cost of future consumers, as is typical of purely consumer-led thinking. See, e.g., Pierre, James Hulbert, and Leyland Pitt, "To Serve or Create? Strategic Orientations Toward Customer and Innovation," *California Management Review* 42:1 (1999): 37–58; Stanley Slater and John Narver, "Customer-led and Market-oriented: Let's Not Confuse the Two," *Strategic Management Journal* 19 (1998): 1001–06.

> It is difficult to go out there and ask how things should be. Take a thousand people and ask what they feel the next Opel Astra model should be like. If you ask it that way, it does not work, they do not know (unprinted interview).

According to a senior manager at Sony, the greatest successes of Sony's Design Center have come from products for which there was no proven demand. A classic example is the Walkman that many people greeted with skepticism when the idea was floated in 1979.[44]

Clearly, when a novel product is being imaged and planned, there is no such thing as a group of future consumers, only fictional ones. However, when imaging a future product, one can hardly avoid thinking up a user and a context of use for the new product. The consumer and user context are represented—either explicitly or implicitly—by an image, a sort of cultural landscape.

Madeleine Akrich has made a useful distinction between implicit and explicit techniques of representing the user.[45] Textbooks dealing with innovation focus mainly on explicit techniques, such as systematic market surveys, consumer testing, and feedback on experience. According to Akrich, in reality, it is the implicit techniques that dominate.[46] First, it is typical for one to represent the future consumer based on self-experience. Another related possibility is to count on the expertise of other specialists. And third, one can study the history of related products, and learn from the similarities and differences.[47]

At Sony, for example, the designers themselves claim to be the "ultimate consumers." At Suunto, the design consultant of the wrist-top computer product line is a rock climber—although by sheer coincidence, as he himself explains. Many of the Suunto personnel have outdoor sports as their hobby: sailing, snowboarding, diving, and triathlon, to name a few. What we argue here is that personal experience in a certain field and a feel for its culture can form an important basis both for creating and conceiving the right consumer image, and for successful product development. This is because personal experience in a field not only helps to understand the cognitive elements of the cultural landscape in question, but also develops intuitiveness and sensitivity towards that field, its values, and its product environment.

The product development process almost without exception starts with a market analysis and an analysis of the competing products. As in the case of Nokia mentioned above, other similar examples from the past sometimes are examined. What is not so widely recognized is that different mediators play an important role in the course of product development.

Magazines, music videos, and movies can play an important role as a stage for goods, and as a source of inspiration and meeting-place for designers, journalists, advertisers, and readers. These ac-

44 Kunkel, *Digital Dreams*, 15.

45 Madeleine Akrich, "User Representations: Practices, Methods, and Sociology." in *Managing Technology in Society: The Approach of Constructive Technology Assessment*, " Arie Rip, Thomas Misa, and Johan Schot, eds. (London: Pinter Publisher, 1995).

46 Richard Ohmann has found skeptical statements related to the use of explicit techniques, especially consumer surveys: research is but one tool and a very limited one, research for the most part is useless and based on self-fulfilling prophecies, and it is the "agreed-upon fiction of our industry" [Richard Ohmann, "Knowing/Creating Wants" in *Making & Selling Culture*, Richard Ohmann, ed. (Hanover: Wesleyan University Press, 1996)].

47 A fourth implicit technique is to use metaphors: e.g., users are a simple, adaptive part of machinery. According to one study, this is exactly the way most Finnish computer system people see the end user.

tors have one thing in common: every one of them follows the latest developments, the newest trends. What is "up-to-date" is created in the pages of magazines when these actors speak to each other, create, and exchange their worlds.[48]

Mediators—High Tech Enters Fashion

We suggest that an important part of the designers' and users' collaboration takes place as an interaction between different mediators, research institutes, consultants, the media and the user representations created by the product development team. In a company context, the view of a product's end-users and its cultural landscape, as we call it, also is based to a great extent on mediators such as magazines, exhibitions, TV, movies, and research institutes, as well as on random discussions with friends and colleagues. This transits high-tech products toward becoming cultural goods themselves. This can be clearly seen in movies including *The Matrix*, *Charlie's Angels*, or *The Saint*, where Nokia phones act as an icon of a new era. We believe that a great deal of research is needed in this area, and we realize that our project is only a modest start.

When, in Suunto's case, the idea of the wrist-top computer product line was conceived, there was no clear intention of making a fashionable product for the consumer market. The question was more about reaching new areas—climbing, mountain biking, and snowboarding—making use of the knowledge to manufacture small-sized technical devices for use under demanding conditions. The resources for a new product development process thus arose from the facilities and technical know-how for making watch-size equipment with an electronic compass, altimeter, barometer, and watch. The existing markets were studied by interviewing retailers, experts, end-users, and test groups, which was formed from adventure sports enthusiasts from Europe and the U.S. Very similar stories might be told about the R&D projects at Sony and Nokia. To become a fashion house, a company should learn to simultaneously manage the market and sense it. This argument follows the logic—or should we say illogic—of fashion itself: the act of simultaneous following and creating.[49]

A fashion house certainly has to deal with many different and probably contradicting phenomena. Right timing is one of the most important parameters. According to an article published in the *Harvard Business Review*, we are witnessing a period of "time pacing." [50] The rhythm of business is no longer dictated by events and inventions, but by the logic of fashion cycles. What is needed is "promiseware" and tools for continuous interaction with the alternating rhythm of such trends.[51]

It is not by chance that many companies such as Intel or Philips, for example, are actively involved in the debate about our future: "So to stay in rhythm, Intel must create 'New Uses and New Users'—which is, in fact, the company's slogan for keeping the

48 Tanja Kotro, "Media and Mediators in the Product Development Process," paper presented in *Media Usage and the Transformations of Everyday Experience* seminar, University of Turku, 31.11.2000. Available at http://www.uiah.fi/~tkotro/.

49 Gilles Lipovetsky, *The Empire of Fashion. Dressing Modern Democracy* (Princeton: Princeton University Press, 1994); and Georg Simmel, *Muodin Filosofia (The Philosophy of Fashion),* (Helsinki: Odessa, 1986). Originally published as *Die Mode* in 1905.

50 Kathleen Eisenhardt and Shona Brown, "Time Pacing: Competing in Markets That Won't Stand Still," *Harvard Business Review* , March-April, (1998): 59–69.

51 Ruby Dholakia, Norbert Mundorf, and Nikhilesh Dholakia, *New Infotainment Technologies in the Home. Demand-Side Perspectives* (Mahwah, New Jersey: LEA, Publishers, 1996); Pantzar, "Consumption as Work, Play, and Art"; Solveig, Wikström, "The Customer as Co-producer," *European Journal of Marketing* 30:4 (1996): 6–19.

market in sync with its own pace." [52] In a film on design futures, Philips people say: "We know there is no need for any of this [i.e., new products, Kotro & Pantzar]. Our job is now to create the need, so that we have the reason to make the products—and sell them." [53]

If anything, the logic of fashion implies cross-fertilization between very different cultural landscapes. Companies need interpretative flexibility and cultural understanding today more than ever. Trends and concepts travel from one industry to another. Think, for instance, of transparent materials: Nike had transparent airbags in training shoes in the late 1980s, Apple launched the eMac, Philips and Rowenta and many others made household appliances with transparent parts, transparent tableware and clothes came, as did transparent architecture, houses with window-walls, etc.[54] Nokia introduced transparent covers to mobile phones in spring 2001.

How are fashion and high-tech appliances actually linked? What follows from that link? And what kind of implications for product planning follow from the seemingly strong position of extreme-sports professionals both in piloting and in branding the products?

Our preliminary analysis suggests that different cultural landscapes find their way into R&D through various mediators (e.g. consultants) in speech, text, images and objects. Their references often are taken from lifestyle magazines, television series, movies, and advertisements, which embody fashion, the "what is in the air," into product development. This can be either intuitive or an explicit strategy of product and brand creation.

For high-tech appliances, however, fashion is a problematic strategy, because the rhythm of fashion is better suited for the traditional fashion business (e.g., clothing) than for high tech, which is based on demanding research and development. Fashion leads to the need for constant product renewal, but mainly at the level of product image. Thus, even though the images of extreme-sports professionals are becoming more and more important, this is happening only at the level of images. Nobody is seriously suggesting nor believes that, by using a certain high-tech appliance, one will become a pro in extreme sports. However, an essential part of the pleasure of a product comes from playing with the image—as long as it is fun. Another question is what will follow if the images and daydream representations of the users are embodied not only to branding but also into actual product development, and mixed with function and usability. Snowboarding as an image serves dreaming perfectly, but it also easily becomes a restricting model for the user.

52 Eisenhardt and Brown, "Time Pacing," 65.

53 Peter Butenschon, "Design, Youth, Consumption," ICSID Information March, 1998.

54 Transparency has been an exceptionally long-lasting and efficient trend, with its crossing of product categories. Another crossing trend has been the diagonal form which has found expression, for example, in Nike's "Triax" watch product line, Sony's md-player (remote control), and rucksacks with only one strap.

Preliminary Conclusions

The most successful high-tech companies succeed in continuously reinventing their products. We would suggest that there are, indeed, many reasons behind these processes of cultural redefinitions and borrowings. Two typical cases are evident in our data: first, changes that were forced and facilitated by an economic crisis (Nokia and Sony) at the company level and, second by changes in the product life cycle. In addition, we argue that one might witness a genuine shift in the practices of consumer electronics and digital appliances. By manifestations such as "A Leading Fashion House in Mobile Communication," companies are, in fact, describing the narrowing gap between high-tech goods and the cultural industry.[55]

In a well-known article, Paul Hirsch[56] defined cultural goods as "'nonmaterial' goods directed at a public of consumers for whom they generally serve an aesthetic or expressive, rather than a clearly utilitarian, function." The unpredictability of market reactions, the extensive risk sharing and the outsourcing of numerous players in production, marketing, promotion, and distribution; and, finally, the focus on symbols and images seem to dominate the sphere of cultural products. Our article suggests that these attributes increasingly characterize high-tech goods as well. Companies such as Sony, Nokia, and Suunto, at least, have met these new challenges.

The designer's profession as an interpreter of cultural landscapes is expanding, because designers are taking part not only in the design process of new products, but also of concepts and corporate strategies.[57] The mediators plays a key role is in this process of traversing cultural landscapes. One could refer to them as "obligatory passage points,"[58] since it is through the product development team, the designers, and the marketing people that the outside world enters the company. We noted that mediators, when they move a cultural landscape from one industry to another, simultaneously reify the existing representations. Snowboarding is this kind of a powerful simplification—it represents a free and self- realizing consumer with an impressive manner. Snowboarding as simplification works as a representation for new consumers, even with different kinds of products and companies. Nokia, Sony, and Suunto all are connected to the brave new consumer rather than the worn-out conception of a businessman.

What we have argued here is that the self-experienced knowledge of designers and marketing people has an important role in product development. Together with such knowledge, the cultural landscapes that influence the meaning of an object are assembled during the development process through various mediators. The users, even in user-centered design, actually are mere representations of users, ensembles of the cultural images, values, and visions that are part of the product. Following these images and visions, we will all be snowboard kids, at least for a day.

55 Today, more than ever, business literature claims that firms should sell fun, fashion, and excitement, instead of selling products or services. See, e.g., Rolf Jensen, *The Dream Society* (New York: McGraw-Hill, 1999); and Joseph Pine II and James Gilmore, *The Experience Economy* (Boston: Harvard Business School Press; Schmitt, 1999). Accordingly, the focus in technology research also is increasingly dealing with cultural representations of individual users and households (e.g., Dholakia, *New Infotainment Technologies in the Home. Demand-Side Perspectives* ; Arie Rip, Thomas Misa, and Johan Schot, *Managing Technology in Society. The Approach of Constructive Technology Assessment* (London: Pinter Publishers, 1995). We are told that future technology is shaped by visions Auguste Tepper, "Controlling Technology by Shaping Visions," *Policy Sciences*, 29 (1996): 29–44, co-dreaming, Pantzar, *Inventing the Needs for Future Home—On the History of Future Needs* (in Finnish) and "Consumption as Work, Play, and Art—Representation of Consumer in Future Scenarios"); and expectation management, Carl Shapiro and Hal Varian, *Information Rules: A Strategic Guide to the Network Economy* (Cambridge, MA: Harvard Business School Press, 1999). Even though the trend towards experience goods, in our view, is exaggerated and does not sufficiently differentiate various consumer groups, the cases of Suunto, Nokia, and Sony, to the extent that they are discussed here, are apparently associated with the experience economy.

56 Paul Hirsch, "Processing Fads and Fashions: An Organization-Set Analysis of Cultural Industry Systems," *American Journal of Sociology* 77:4 (1972): 639–59.

57 Ezio Manzini, "The Company as a Cultural Operator," *ICSID News* 5 (1992) August: 1-2; Juhani Salovaara, "In Search of a Direction for Emerging Research in Industrial Design," *ICSID News* 4 (August, 1999): 6-7.

58 Bruno Latour, *Science in Action. How to Follow Scientists and Engineers Through Society* (Cambridge, MA: Harvard University Press, 1987).

Between Word and Deed: The ICOGRADA Design Education Manifesto, Seoul 2000

Sharon Helmer Poggenpohl
Sang-Soo Ahn

Manifesto Basics

A manifesto is a particular form of communication predicated on three beliefs: that a change has occurred or some new insight has altered understanding of a situation; that a human agency can change circumstances into something more desirable; and that the timing is advantageous for both the manifesto and the change it seeks. It is a public statement rather than a private one.

Exactly what is included under the classification manifesto is open to debate. Corporations and nonprofits have their mission statements, governments and foundations have their policy agendas, and political parties have their platform—all these might be considered particular forms of the manifesto. On occasion, a less formal organization creates a manifesto. What marks all these documents is a common purpose—to focus attention on a new agenda arising from a recognition of changed circumstances, to publicly announce a desired change in human behavior and institutional configuration, and to exhort interested and influential people to not only endorse the manifesto, but bring about through their own agendas the changes the manifesto prescribes. A successful manifesto is a call to action that stimulates and coordinates agency.

Agency is defined as the capacity, condition, or state of acting or exerting power. It is about what we can individually or collectively accomplish to alter a state of affairs. Designers are increasingly understanding their role as mediators of culture. What is less certain is whether they understand their possibilities as active agents, consciously supporting substantive change in which they have a voice or, in contrast, they understand their role more as technicians who create instruments for others who set and control the agenda. The writing and acceptance of a manifesto signals a proactive attitude. It indicates that the participants are aware that, through their agency, they can effect change.

Style often is the most memorable attribute of the manifesto. By nature, it must rise above the usual din of communications. It must stir the soul—this is a strongly rhetorical form. “Rhetoric engages in messy human communications that encompass the interpretation of events, alternative actions and ethics, opposing values,

or dramatic retellings that hinge on the presenter or the source of the information rather than in truth."[1] Where rhetorical communications originate, and who or what group presents them, is of significance. The prescriptive form their statements make is calculated. The manifesto cannot be vague in its call for change, or it is too easily ignored. Its statements must be somewhat audacious and strong. Besides being interpretive and, in some sense, partisan, it is a difficult form to manage in the overwrought media communication age in which we live. Another difficulty is to overcome the cynicism that attends its reception. Often associated with utopian ideals or avant-garde experiments, a manifesto more often than not is received with skepticism. But manifestos, regardless of their reception, are memorable. Some manifestos are memorable for their powerful use of language: "We hold these truths to be self-evident, that all men are created equal."[2] Some are memorable for their visual appearance. Striking the right balance of connection with the past and articulation of an attainable vision of the future is critical to the manifesto. Some avant-garde manifesto writers, such as the Futurist Filippo Tommaso Marinetti, shunned the past entirely and stridently pushed a vision of the future of art. The first Futurist Manifesto was published in 1909.

> As a theorist and polemicist, Marinetti is at his best in what he himself called the "art of writing manifestos." At the end of the nineteenth and the beginning of the twentieth century, the "manifesto" was already a favorite form, used as a witty but peaceful medium for expressing literary ideas. With Marinetti it becomes a symbolic, paradoxical, incandescent and terroristic medium.[3]

A description of the romanticism and politics that inspired the Futurist Manifesto can be found in *Futurismo & Futurismi.*[4] The fascist connection, awareness of new scientific theories and the early penetration of technology into everyday life mark the manifesto. Marinetti followed the first manifesto with another in 1913 that he referred to as his "Technical Manifesto of Futurist Literature." In this manifesto, he becomes more detailed in expressing the goals and content of Futurist writing. In the section that deals with syntax (Words-in-Freedom), he becomes prescriptive about words, symbols, rhythm, and typography.

Timing, as mentioned previously, also is critical in the reception of a manifesto. If it is too early, a sufficient number of people will not know or have experience of what the manifesto claims as a necessary change. If it is too late, the news, the change to which it points, is commonplace and is ignored. History attends to the manifesto, whether it is the benchmark of 1517 with Martin Luther's protest against the sale of indulgences, marked by the posting of his 95 theses on the church door in Wittenberg, resulting in beginning the Reformation in Germany, or the Declaration of Independence of

1 For a larger discussion of rhetoric and its role in communication and design, see Sharon Poggenpohl, "Doubly Damned: Rhetorical and Visual," *Visible Language* 32.3 (1998): 203.

2 From the Declaration of Independence, 1776.

3 Pontus Hulten, *Futurismo & Futurismi* (Milan: Gruppo Editoriale Fabbri, 1986), 512.

4 Ibid., 512-519.

1776, resulting in the American separation from Britain, or the Communist Manifesto of 1848. A recent visit to the Web, in which the author performed a search for "manifestos," yielded 20,856.[5] The manifesto form flourishes, aided by new technology. (This is a relationship that will be explored in more detail later.)

Marking Change: Two Manifestos

A look at two manifestos demonstrate the relationship between the call to a new agenda and a prescriptive change.

> *Fluxus*
> An interesting, extended art event with a brief series of manifestos from the mid-twentieth century is Fluxus. The first manifesto (Dusseldorf, 1963) plays off dictionary definitions with contemporary prescriptive comments regarding art praxis. In contrast, the second manifesto (New York, 1965) takes a dialectical approach comparing "art" with "fluxus art-amusement."
>
> *Art*
> To justify the artist's professional, parasitic, and elite status in society,
> he must demonstrate artist's indispensibility and exclusiveness,
> he must demonstrate the dependability of audience upon him,
> he must demonstrate that no one but the artist can do art.
>
> Therefore, art must appear to be complex, pretentious, profound, serious, intellectual, inspired, skillful, significant, theatrical, It must appear to be valuable as commodity, so as to provide the artist with an income.
>
> To raise its value (artist's income and patron's profit), art is made to appear rare, limited in quantity and therefore obtainable and accessible only to the social elite and institutions.

[in contrast]

> *Fluxus Art-Amusement*
> To establish the artist's nonprofessional status in society,
> he must demonstrate the artist's dispensibility and inclusiveness,
> he must demonstrate the self-sufficiency of the audience,
> he must demonstrate that anything can be art and anyone can do it.

5 The author searched the Web with Lycos on September 20, 2000, and obtained this result.

> Therefore, art-amusement must be simple, amusing, unpretentious, concerned with insignificances, require no skill or countless rehearsals, and have no commodity or institutional value.
>
> The value of art-amusement must be lowered by making it unlimited, massproduced, obtainable by all and eventually pro-duced by all.[6]
>
> Fluxus art-amusement is the rear guard without any pretention or urge to participate in the competition of 'one-upmanship' with the avant-garde. It strives for the monostructural and nontheatrical qualities of a simple natural event, a game or a gag. It is the fusion of Spike Jones, Vaudeville, gag, children's games and Duchamp.[7]

The next Fluxus manifesto in 1966 took a more formal approach and cited: where, what, who, why, and how was fluxus. This manifesto was under greater visual control in all caps, and spaced out with hyphens between entries. Among the artists listed were: Christo, Alison Knowles, George Maciunas, Yoko Ono, Diter Rot, Ben Vautier, Emmet O. Williams, and La Monte Young.[8]

This is an example of a progression of manifestos working toward refining an emerging message and trying to get it right.

During the developmental period of Fluxus (1962-1963), the focus was on the collective movement of the idea as opposed to individual identities of artists. A letter from George Maciunas to Ben Vautier expresses this ideal:

> ...I notice with disappointment your GROWING MEGALOMANIA. Why not try Zen method—Curb & eliminate your ego entirely. (if you can) don't sign anything—don't attribute anything to yourself-depersonalize yourself! that's in true Fluxus collective spirit. De-europanize yourself! No one can succeed to do this here either. (although in Japan they can) ...[9]

Fluxus owes a debt to Dada, an avant-garde art movement from the early part of the twentieth century. Some historians relate dada to Fluxus as its historical precedent.[10] Tristan Tzara:

> Dada is a state of mind. That is why it transforms itself according to races and events. Dada applies itself to everything, and yet it is nothing, it is the point where the yes and the no and all the opposites meet, not solemnly in the castles of human philosophies, but very simply at the street corners, like dogs and grasshoppers.[11]

6 Jon Hendricks, *Fluxus Codex* (New York: Harry N. Abrams, 1988), 26.

7 Ibid.

8 Ibid., 31.

9 Ibid., 133.

10 For a historical positioning of Fluxus in the context of other twentieth century art movements, see Estara Milman, "Historical Precedents, Trans-historical Strategies, and the Myth of Democratization," *Visible Language* 26. 1/2 (1992): 17-34.

11 Ibid., 29.

Fluxus was "overtly concerned with the need to reposition art experience within the domain of the common man and woman ..."[12] Like design, Fluxus had a strong commitment to everyday experience.

One of its proponents, George Maciunas, wanted to keep the idea of the international collectivity vital and avoid rivalry such as existed between the French and German Dadaists. He proposed a manifesto that sometimes is printed and referred to as a *Fluxus Manifesto.*

> But nobody was willing to sign the thing. We did not want to confine tomorrow's possibilities by what we thought today. That manifesto is, then, Maciunas' manifesto, not a manifesto of Fluxus.[13]

Here the problem of reception is clearly stated. Whether the reluctance to sign was a result of the still formative nature of the movement, or whether it was an artifact of ego, or whether a sufficient collective understanding and focus for the idea was not achieved, is impossible to tell.

One member of Fluxus, Ken Friedman, has written about the myths surrounding the "movement" and its manifestos. He resists calling Fluxus an art movement because of its lack of cohesion. And the documents (manifestos) largely produced by Maciunas, may not have been intended for endorsement at all, but as provocations in a dialectical process.[14]

A Humanist Manifesto

Tied to the millennium, another manifesto, the *Humanist Manifesto 2000,* calls for a planetary humanism. It is inspired by the eighteenth-century Enlightenment ideals of science, reason, democracy, education, and humanist values.

> The Planetary Humanism that this manifesto presents is *post*-postmodernist in its outlook. It draws on the best values of modernity, yet it seeks to transcend the negativity of postmodernism and it looks forward to the information age now dawning and all that this portends for the future of mankind.[15]

As a planetary document it crosses social, political, and economic boundaries. Regarding moral conduct, it believes that basic, moral principles are common to virtually all civilizations. "People of different sociocultural backgrounds do in fact apply similar general moral principles, though specific moral judgments may differ because of differing conditions. The challenge for societies thus is to emphasize our similarities, not our differences."[16]

The manifesto carefully concludes with a statement concerning those who endorse the document—that they accept its main principles but may not agree with every provision in it. Further, that

12 Ibid., 18.

13 Stephen C. Foster, "Historical Design and Social Purpose, A Note on the Relationship of Fluxus to Modernism," *Visible Language* 26. 1/2 (1992) 38.

14 Ken Friedman and James Lewes, "Fluxus: Global Community, Human Dimensions," *Visible Language* 26.1/2 (1992)155-179.

15 Paul Kurtz, The second workshop consisted of Sang-Soo Ahn, Hong-Ik University (South Korea); Frank Barral, former director and current faculty of Escola de Superior de Desenho Industrial, Rio de Janeiro State University (Brazil); Sharon Poggenpohl, Institute of Design, Illinois Institute of Technology (United States); and Jan van Toorn, former head of the Jan van Eyck Academy (The Netherlands). *Humanist Manifesto 2000, A Call for a New Planetary Humanism* (Amherst, NY: Prometheus Books, 2000), 23.

16 Ibid., 30.

the manifesto is intended to contribute to constructive dialogue and is an invitation to those of different traditions to join "in working for a better world in the planetary society that is now emerging."[17] Signatories from all over the world—academics, authors, philosophers, activists, Nobel laureates, astronomers, religious leaders, and more endorse the manifesto.

With these two brief examples demonstrating some of the issues inherent in the manifesto form, we turn to the ICOGRADA Design Education Manifesto.

The ICOGRADA Design Education Manifesto

Background

While many notable manifestos are the work of a single individual as a representative of some group whether self-anointed or elected, the origin of this manifesto is quite different—it was a collaboration among an international group of designers. The participants represented: Brazil, China, Germany, India, South Korea, the Netherlands, South Africa, and the United States. The collaborative nature of this undertaking was significant since the participants came with different experiences of the world—geographically, politically, economically, culturally, and socially. With particular personal experiences in design and education colored by their access to technology, media, the nature of their clients and / or students, the traditions and associations in which design was commonly related—all of these and more marked their differences. The complexity of their representation—as world citizen, representative of some country, member of some professional group, faculty of some university, teacher of particular courses, designer with particular expertise, human-being with certain religious, humanistic, political, social affinities—created a rich and diverse discourse.

Professor Sang-Soo Ahn convened two workshops in Seoul in March and June of 2000. The first workshop established the sense of change in design context and definition, and explored its impact on design education. The second workshop greatly benefited from the original workshop's achievement and developed the language, structure, and tone of the document. Each workshop consisted of a mixed international team of participants fluent in English.[18] Because globalism has been, and continues to be, highlighted in all dimensions of social, cultural, and political life from the local through many levels to the international, issues of economic stability, cultural universalism or uniqueness, access to technology and distribution systems, as well as fundamental questions concerning what defines the aspirations and ethics of design education and practice—the particular context in which design operates-were open to

17 Ibid., 64.

18 The first workshop consisted of Sang-Soo Ahn, Hong-Ik University (South Korea); Gui Bonsiepe, University of Applied Sciences, Cologne (Germany), Dan Boyarski, Carnegie Mellon University (United States); Esther Liu, Hong Kong Polytechnic University (China), Marian Sauthoff, University of Pretoria (South Africa); and Kirti Trivedi, Industrial Design Centre, IIT, Bombay (India).

discussion.[19] Aware of differences in development and cultural orientation, the participants sought the common ground. This was a practical decision since the particularities derived from specific cultural/economic conditions, while interesting, would not lend themselves to a focused and fairly brief manifesto document.

Issues

From the start, there was different understandings of the form of a manifesto. And the content was complicated by being viewed through different cultural filters. Nevertheless, the participants, in a spirit of friendship and understanding, worked collaboratively to create the document at the conclusion of this article. Frank Barral summarizes the apprehensions of the group in his statement:

The 20th century saw a lot of manifestos. I'm wary of them. They tend to be exclusive rather than inclusive—not exactly the expression of a reflexive humbleness. Some people take so seriously the ideas of the manifesto that they don't perceive that people and times are what they are and that manifestos will be at best guide lines, not inflexible laws.[20]

Regarding both the manifesto and cultural differences, Gui Bonsiepe observed:

> What I have learned from the very instructive meeting in Seoul where we drafted the first version, is that in Asian culture it seems not to be considered polite to state publicly divergencies. I admit my lack of deeper knowledge of Asian culture and philosophy, but I got the impression that manifesto-writing is rooted in western intellectual tradition that starts from contradictions; whereas in Asian culture, people tend more to look for convergencies and to search for harmony.[21]

This difference between Eastern and Western cultures was fundamental in our discussions. The notion of harmony proved difficult for Western participants. Reflecting on my own experience as an American who has taught many design courses with various mixtures of Eastern and Western students over many years, I observe that Western students value individuality and freedom to an extreme, while Eastern students value community and social obligation. This difference in emphasis is, I suspect, at the core of the problem with harmony. The West decries its lack of community, yet often appears unwilling to compromise individual positions in order to gain a more extensive community agreement or good. Orientation to competition or collaboration also color this cultural divide.

19 Three of the manifesto participants, Sang-Soo Ahn, Frank Barral, and Sharon Poggenpohl, previously participated in an ICOGRADA congress in Uruguay that explored the ideas of globalization and regionalization in graphic design education. See Anne Bush and Sharon Poggenpohl, editors. "Globalización y regionalización en la enseñanza del diseño gráfico" (Globalization and Regionalization in Graphic Design Education), *Congresso Icograda ADG Uruguay,* 1998.

20 Correspondence with Frank Barral, September 2, 2000.

21 Correspondence with Gui Bonsiepe, August 25, 2000.

The second workshop did get into a serious discussion over this very issue. Jan van Toorn recalls:

> We had a rather long argument within our group, as you know, about the now last paragraph of the manifesto. In Frank Barral's and my view this section about "Oullim, the great harmony" is in conflict with the wittingly dialectic character of the manifesto. Frank called the promise of harmony, as a metaphysical notion, a belief. In my opinion it is an ideological position that denies the forces and contradictions we have to struggle with as practical intellectuals. We should not give up our dreams, but we have to realize them in reality.[22]

With regard to timing, there was little disagreement. The changes the twentieth century wrought make a manifesto critical now, if only to dramatize the change. Marian Sauthoff noted:

> ... contemporary graphic design is marked by transition, fluidity, complexity and convergence ...the impact of digital information technology ... the importance of research and self-reflection ... sustainability and accountability ... the shift from teacher-centered to learner-centered education.[23]

To this Jan van Toorn would add:

> Design has been entirely incorporated in the radical transformation of social, economic, and cultural life through the advertising and image-design of transnational corporations, culture industry and politics.[24]

To which Gui Bonsiepe would add that it is time to bury all claims of cultural hegemony.

With the exception of the friendly argument regarding "harmony," both workshops had surprisingly good agreement about basic concepts, and the resulting discussion revolved around emphasis and wording rather than deeper disagreement. The participants all gave up some ideas that were important to their own context of experience: Gui Bonsiepe gave up explicit mention of the audio dimension of communication that now is increasingly important to designers; he would also have liked to go deeper into the term usability. Marian Sauthoff would have liked a better name than visual communication design. I would have liked a cautionary statement regarding technology, and a deeper statement regarding human-centered as opposed to market-centered design. Dan Boyarski also wanted a strong human-centered attitude so that the emphasis was on solving problems that touched people's lives rather than on strict formal values. Our decision-making was marked by a conscious and clear negotiation of issues which we proposed and then listened to comment in support or denial of the idea. The search was for consensus.

22 Correspondence with Jan van Toorn, August 29, 2000.

23 Correspondence with Marian Sauthoff, September 15, 2000.

24 Correspondence with Jan van Toorn, August 29, 2000.

The focus on commonground was questioned by Kirti Trivedi, who was reluctant to submerge the rich and real differences among cultures. Admittedly, a homogeneous common ground could appear bland and eminently forgettable, yet dialogue and appreciation of difference can be respectfully initiated when shared ideas and events provide a reason for engagement. Common ground provides a kind of social and cultural glue.

The Document

The final document has four parts. The opening states the need for a new term for graphic design, and why this is needed. This is substantiated in the second section, with the mention of factual change in the design environment. The third section states a new definition for the role of visual communication designer. Only the fourth and final section dealing with changes in design education, is written prescriptively. That change has occurred is addressed in the first two parts, while the second two parts propose a remedy that will better address the changed circumstances.

The language and tone were carefully considered. The language is plain in recognition of its final translation into many other languages, and also with respect to the international team of writers, for many of whom English is a second language. The tone is not strident, it is perhaps even somewhat quiet for a manifesto.

ICOGRADA Design Education Manifesto

Graphic Designer

The term "graphic design" has been technologically undermined. A better term is visual communication design. Visual communication design has become more and more a profession that integrates idioms and approaches of several disciplines in a multi-layered and in-depth visual competence. Boundaries between disciplines are becoming more fluid. Nevertheless, designers need to recognize professional limitations.

Many Changes Have Occurred

Developments in media technology and the information economy have profoundly affected visual communication design practice and education. New challenges confront the designer. The variety and complexity of design issues has expanded. The resulting challenge is the need for a more advanced ecological balance between human beings and their socio-cultural and natural environment.

Designer

A visual communication designer is a professional:

- Who contributes to shaping the visual landscape of culture.
- Who focuses on the generation of meaning for a community of users, not only interpreting their interest but offering conservative and innovative solutions as appropriate.

- Who collaboratively solves problems and explores possibilities through the systematic practice of criticism.
- Who is an expert that conceptualizes and articulates ideas into tangible experiences.
- Whose approach is grounded in a symbiotic conduct that respects the diversity of environmental and cultural contexts without overemphasizing difference, but by recognizing common ground.
- Who carries an individual responsibility for ethics to avoid harm and takes into account the consequences of design action to humanity, nature, technology, and cultural facts.

Future of Design Education

The new design program includes the following dimensions: image, text, movement, time, sound, and interactivity. Design education should focus on a critical mentality combined with tools to communicate. It should nurture a self-reflective attitude and ability. The new program should foster strategies and methods for communication and collaboration.

Theory and design history should be an integral part of design education. Design research should increase the production of design knowledge in order to enhance design performance through understanding cognition and emotion; as well as physical, social, and cultural factors. More than ever, design education must prepare students for change. To this end, it must move from being teaching-centered to a learning-centered environment which enables students to experiment and to develop their own potential in and beyond academic programs. Thus, the role of a design educator shifts from that of only knowledge provider to that of a person who inspires and facilitates orientation for a more substantial practice.

The power to think the future "near or far" should be an integral part of visual communication design. A new concept in design promises to tune nature, humanity, and technology, and to harmonize east and west, north and south, as well as past, present, and future in a dynamic equilibrium. This is the essence of *Oullim,* the great harmony.

Distribution and Reception

The ICOGRADA manifesto was presented to the Congress in Seoul at the close of its meeting in October, 2000. Translated into ten languages, the worldwide distribution of this document is critical to achieving coordination and support for human agency. The ease with which we communicate via email and the web makes the previously formidable problem of "reach" easy. Translation and appropriate typography also benefit from computer applications and extend reception of the document into many previously unreachable corners of the world. While the manifesto can be put into circulation, what also is desired is comment and reaction. Just

as the *Humanist Manifesto* mentioned earlier invited dialogue, the sponsors and collaborators on this manifesto desire a similar response. Rather than putting a message into a bottle and setting it adrift on the electronic sea of communications—even in an array of languages and typographies—this needs an action response. The measure of the manifestos success will be taken over time—in discussion and argument in the short-term, and through educational program change in the long-term.

Which issues the manifesto raises will find easy acceptance or difficult compromise will emerge over time. The manifesto team recognizes that the context of application will vary. The document will be interpreted according to local situations. Was the timing right after all? Is ICOGRADA a credible origin for such a document? Are the prescriptive statements too heavy-handed? Is the common ground rooted in a shared reality? Can recipients of the manifesto overcome their cynicism or egos long enough to endorse a community effort? These questions remain unanswerable at this time.

This manifesto emerged from international collaboration and a search for the common ground. The idea and reality of building human community is based on shared interests and reality. Our contact internationally is easier than ever. We can maintain dialogue and share best practices though we are a world away; we can support each other's agency as we design a humane, desirable future. Occasionally, there is a need to summarize a change in the state of affairs and to offer some idea of adjustment or remedy for the new circumstances—this is the nature of the manifesto presented here.

Between word and deed—the manifesto and its actionable results—from the manifesto (the noun) to making manifest (the verb), we all are party to the outcome.

The Language of Reflective Practice in Art and Design

Fiona J. Doloughan

"Design takes the results of past production as the resource for new shaping, and for remaking. Design sets aside past agendas, and treats them and their products as resources in setting an agenda of future aims, and in assembling means and resources for implementing that. The social and political task and effect of the designer is fundamentally different from that of the critic." (Kress)

"Design is as much an expression of feeling as an articulation of reason; it is an art as well as a science, a process and a product, an assertion of disorder, and a display of order." (Margolin)

Introduction and Theoretical Context

In the introduction to *Design Discourse*, Victor Margolin points to "design's broad role in society" [1] and argues for the need to "make a place for design discourse within the larger debates about social theory, notably those that center on the transition from an industrial to a postindustrial society, and from a modern to a postmodern culture." [2] Yet in spite of the insights and provocations of postmodernism and poststructuralism which would have us re-examine some of the premises of modernism and structuralism, ways of thinking about and attitudes towards language and the acquisition of knowledge in many institutions of higher education today have remained defiantly rooted in notions of realism, empiricism, and a belief in the scientific method. This is reflected in the conventionalized forms of communication which continue to be privileged by the academy, and which are grounded in an outmoded and increasingly contested notion of representation. For students of art and design faced with, in many instances, the requirement to communicate in (conventionalized) written text, arguments and ideas which they feel already have been adequately expressed in a different material form or medium, the issues surrounding the representation of cultural values can be particularly acute. In this paper, I shall reflect on the "tensions, resistances, and alternatives" [3] underlying and framing academic writing practices and preferences in art and design, and suggest that the notion of design itself, which incorporates both the process of designing as well as the (newly) designed product of that process,[4] is a useful analytical tool for examing the problematics of re-presentation.

1 Victor Margolin, ed., *Design Discourse* (Chicago and London: University of Chicago Press, 1989), 6.

2 Ibid., 7.

3 Ibid., 265.

4 See, in particular, Donald Schön, *The Reflective Practitioner* (Aldershot: Athena, 1995) and Gunther Kress, "Design and Transformation" in Bill Cope and Mary Kalantzis, eds., *Multiliteracies* (London: Routledge, 2000).

The structuralist legacy to the academy, a framing of ideas and arguments in terms of binary oppositions, dies hard. Thus, critical debates have centered on distinctions between process and product; form and content; "creativity" and "rationality"; argument and narrative; and "scientific" and "humanistic" traditions. Yet there also is evidence that some, at least, of these oppositions are being interrogated, if not entirely dismantled, in certain quarters.[5] For example, Christopher Frayling,[6] having presented popular images of artists and designers as well as of scientists, both real and fictional, challenges the assumption that research and scientific enquiry are absent from the artistic domain. Indeed, he takes issue with a range of (mis)representations and (mis)constructions: those of the expressive and intuitive artist; the boffin and the style-obsessed designer; and the notion of the research scientist whose subjectivity, unlike that of the artist, never comes into play.

Moreover, as Frayling points out,[7] "critical rationalism, which relies on making everything explicit, by revealing the methods of one's logic and justifying one's conclusions, and which has at the heart of its enterprise a belief in clarity, has been under considerable theoretical attack in the last 10–15 years." He goes on to argue that there always has been a cognitive as well as an expressive tradition in art, and suggests that "(d)oing science is much more like doing design" [8] than one might care to admit, despite all the post-rationalizing about science. Furthermore, he contends that research like writing, doing science, designing, and creating art are all practices which can be situated in a social, technical, and cultural context.

Assumptions of scientific objectivity versus creative individualism are also critically examined by the UK Council for Graduate Education,[9] which states that "It is no longer possible to polarize subjects as conforming—or not—to the 'scientific method'". A continuum from scientific research to creative practice would better reflect the realities of a situation in which differences already exist between the sciences and the humanities, for example, and between qualitative and quantitative research methods. It recognizes, nevertheless, the need to differentiate between "the presentation of works for a doctorate and for an exhibition;" [10] the assumption being that works presented in an academic context require textual elucidation and critical (self-)reflection on the part of the researcher, as well as validation from the examiner who must be satisfied that the candidate has displayed "an understanding of the ways the practice is related to theory, in relation to the specific work being undertaken." [11] Likewise, Frayling distinguishes between research *into* art, research *through* art, and research for art,[12] the first two categories reflecting the traditional roles of research and academically-oriented, practice-based study, while the third category emphasizes the role of maker, rather than researcher, and seems to dispense with the need to explicitly relate artistic product to the process of research. In other

5 Indeed, the essays in *Design Discourse* collectively address the philosophical debate between modernists and post-modernists about the nature of reality and construct design as a "central human activity," 8.

6 Christopher Frayling, "Research in Art and Design" in *Royal College of Art Research Papers* 1 (London: RCA, 1993): 1–5.

7 Ibid., 3.

8 Ibid., 4.

9 UK Council for Graduate Education, *Practice-based Doctorates in the Creative and Performing Arts and Design* (Coventry: Dialhouse Printers, 1997).

10 Ibid., 21.

11 Ibid., 22.

12 Christopher Frayling, "Research in Art and Design."

words, what both the UK Council for Graduate Education and Frayling ultimately agree on is the fact that, at the core of the academic enterprise, is a search for knowledge within a reflective and systematic framework. This knowledge may take different forms and have different applications, but the task of the academic researcher and practitioner (as opposed to the creator of art) is to communicate the results of a process of enquiry, whether this enquiry be purely theoretical or whether it can be seen to have practical applications.

Yet the idea that the distinguishing feature of research practice in academic contexts is the ability to communicate the results of a process of enquiry is not as unproblematic as it might superficially appear, since we first have to establish what is meant by communication. In theory, if not in practice, communication can take many different forms: we can communicate through gesture and dance, and through visual and acoustic representations, as well as through written messages. However, as we have seen, what seems to underlie academic notions of communication and which acts as a kind of guarantor of acceptability is, ultimately, the printed text, which records in written form an analytical and critical process which is thereby objectified and subject(ed) to interrogation and critique.

While I would not wish to collapse entirely categories and distinctions which serve a particular (and perhaps necessary) purpose, I would, nevertheless, like to draw attention to the privileged position held by verbal over visual and other modes of communication in the academy, and to point out, following Gunther Kress,[13] the implications of such a (seemingly natural) position:

> At the moment, our theories of meaning (hence our dominant theories of cognition) are entirely shaped by and derived from theories founded on the assumption of the dominance of language. Meaning is, in fact, identified with "meaning in language." This constitutes a major impediment to an understanding of the semiotic potentials of, among other modes, the visual and its role in cognition, representation, and communication." [14]

Kress is a member of the New London Group, which began life in September 1994 when a number of friends and colleagues from universities in Britain, Australia, and the U.S. got together for a week in New London, New Hampshire to discuss issues revolving around literacy and pedagogy in a changing and increasingly global and multicultural world. He adopted the notion of design, which he saw as being appropriate for an era in which the privileging of the written over other modes of communication, such as the visual, could no longer be taken for granted. Kress believes that design points to a dynamic and transformative use of representational resources in the designer's interest. Indeed, he sees design as the "essential textual and pedagogic / political goal for periods charac-

13 Gunther Kress, "Design and Transformation," 153–161.

14 Ibid., 159.

15 Ibid., 160.

terized by intense and far-reaching change." [15] While design as a metaphor for planning, organizing, and bringing to term a project realized within a set of evolving parameters certainly is not a new concept,[16] its re-activation and investment by Kress and others seem to offer a potential resolution of the critical tensions surrounding the philosophical debate between modernists and postmodernists insofar as it appears to take account of the multimodal nature of communication in the modern world, while respecting the specificity, or what Kress calls the "different potentials," [17] of the various semiotic modes. By recognizing the complex of interests (personal, cognitive, affective, and social) which informs the process of meaning-making, it permits discussion of the creative process in relation to notions of cognition. Conversely, it underscores the cultural context and subjective motivations of much scientific enquiry. As Kress puts it: "Design is…about the best, the most apt representation of my interest; and about the best means of deploying available resources in a complex ensemble." [18]

It is within such a framework that I wish to reflect on the problems and possibilities of research in an academic context in the creative arts.[19] Clearly, in the area of art and design, the visual is likely to play an important role, whether the MPhil or Ph.D. be "by thesis" or "by project." [20] The emphasis, however, is likely to be on verbal / textual communication in the case of the MPhil or Ph.D. "by thesis," while studio-based practical work will constitute a major element in the case of the MPhil or Ph.D. "by project." Yet even here there is a requirement for a written element as well as the provision of documentary evidence of reflective practice. Such documentary evidence may include visual as well as verbal or textual illustrations.

Problems and Possibilities in the Creative Arts

The problem of the relationship between the visual and the verbal; between printed text, illustrative drawing, and / or (relatively) independent artifacts; obviously raises itself here. How does one, in the case of an MPhil or Ph.D. "by project," demonstrate a "clear structural and intellectual link" [21] between two aspects of a work deemed to be "visibly interdependent"? [22] At one level we are dealing here with a problematic which holds for all research projects, that is the relationship between data and analysis of data, and between the creation of an experimental situation and commentary on the processes and results of enquiry. We might enquire further how graphic or visual representations of data relate to other textual interpretations. Yet, from another perspective, these apparently analogous situations miss the point if we posit, following Kress,[23] different semiotic potentials of different modes of communication.

Viewed from this perspective, the notion that the visual can easily be rendered in written form or that the textual can simply be translated into diagrammatic form becomes more problematic. To

16 Donald Schön, *The Reflective Practitioner.*

17 Gunther Kress, "Design and Transformation," 157.

18 Ibid., 158.

19 It was within the context of a series of seminars on research methods that I was invited to the RCA to contribute some workshops on the research process and writing in academic contexts.

20 Students at the Royal College of Art are able to pursue research at the masters or doctoral levels by one of two main routes: they may either embark on an MPhil or Ph.D. "by thesis" or in the studio-based disciplines "by project." The difference between these routes is principally one of scope and of focus.

21 *RCA Research Degree Student Handbook 1999–2000,* 11.

22 Ibid., 11.

23 Gunther Kress, "Multimodality." in Bill Cope and Mary Kalantzis, eds., *Multiliteracies* (London: Routledge, 2000).

put it provocatively: imagine wordsmiths being required to paint their meaning or convey, through music, the gist of their argument? In other words, the privileging (to varying degrees) of the written mode of communication has serious and challenging consequences not just for students of art and design, but for researchers in general. How are coherent arguments to be constructed and clear links to be made in a multi-modal environment? What is to count as evidence in the context of studio-based work, given the privileging of what Clive Dilnot [24] calls linguistic status over archeological status? Indeed, just what status is to be granted to objects and artifacts independent of their linguistic and rhetorical realizations? For as Richard Buchanan[25] points out, arguments may be "presented in things rather than words"; ideas may be presented "in a manipulation of the materials and processes of nature" [26] rather than in language.

Perhaps one way forward is offered by the notion of reflective practice or what Donald Schön calls "design as a conversation with the materials of a situation." [27] Like Kress's notion of design, which exploits both the process of designing and the (newly created) product of design, Schön's account foregrounds the dynamics of a process which entails the realization of a product. At the same time, it acknowledges the necessary interrelationship of (pre-existing) materiality and subjectivity as they interact in a dynamic and motivated context. Language, in this view, is seen as a means of articulating (and thereby) transforming a given situation through a process of reflective action. Schön sees no necessary split between drawing (doing) and talking (reflecting on doing) which, for him, are "parallel ways of designing, and together make up...the *language of designing."* [28]

The Language of Reflective Practice

The 1999 Turner Prize,[29] awarded at the Tate Gallery on November 30 during a live broadcast on Channel 4, included pre-recorded short films profiling the short-listed candidates and introducing their work. The artists who collaborated on the production of the films commented on their projects and talked about what they were trying to achieve. Given that the purpose of the Turner Prize is to "promote the display and discussion of contemporary art," [30] there is nothing unusual about this. Yet it does help to challenge assumptions about inspired but inarticulate artists unaware of the multiple contexts shaping and informing their work. What was striking about this group of artists was their ability to construct a critical and creative (multimodal) account of their work for a general audience. Arguably, then, the Turner Prize has helped to dispel myths about creative genius and inspired activity, and has aided the promotion of notions of reflective (and transformative) practice. The conversations of the short-listed artists with the materials of their situations clearly demonstrated an understanding of design-as-knowledge.

24 Clive Dilnot, "The State of Design History, Part II: Problems and Possibilities" in Victor Margolin, ed., *Design Discourse* (Chicago and London: University of Chicago Press, 1989), 140.

25 Richard Buchanan, "Declaration by Design: Rhetoric, Argument, and Demonstration in Design Practice" in Victor Margolin, ed., *Design Discourse* (Chicago and London: University of Chicago Press, 1989), 91–104.

26 Ibid., 94.

27 Donald Schön, *The Reflective Practitioner*, 78.

28 Ibid., 80.

29 The Turner Prize is awarded annually by a jury in Britain to British artists under 50 years of age for an outstanding exhibition or other presentation of their work in the preceding 12 months.

30 Nicholas Serota, Foreword to *The Turner Prize 1999* (London: Tate Gallery Publishing Ltd., 1999).

Yet the kind of language needed to articulate complex, multimodal ideas and their realization is not necessarily going to be the same as for other kinds of research activity. Buchanan writes: "It is surprising to realize how far we are led into figurative language to express the persuasiveness of lines." [31] It may be that the "self-evident empiricism" [32] of the scientific method is not so self-evident after all, and that we need to show greater tolerance of a language which seeks to render what Kress calls "the processes of synaethesia, the transduction of meaning from one semiotic mode to another semiotic mode, an activity constantly performed by the brain." [33]

While the critical rationalist may feel uneasy with a language that appears to lack clarity, resists easy categorization, and insists on mixing modes, it may be argued that "thinking things differently" [34] requires a different kind of language, one capable of new conceptualizations and multimodal inflections. If we are to avoid the conclusion that objects speak for themselves and what artists produce requires no further commentary, and if we are to encourage the possibility of the "transduction of meaning," [35] then we must be open to a language that reflects "the interaction of 'modes of thought' and conceptions of the significance and meaning of the phenomena we explore." [36] Such a language is likely to be multilayered and metaphorical, metaphysical and qualitative, rather than transparent and one-dimensional. It will not seek to exclude the personal and the affective from the cognitive and the social but to acknowledge changes which "arise as a result of the interested actions of individuals." [37] Thus, Buchanan [38] can talk about rhetoric and design as architectonic arts, while Steve McQueen is able to articulate his interest in *Deadpan* and other works as being an obsession with holding or prolonging the moment. To understand McQueen, we need to "loosen our grip on the distancing effect of academic discourse and replace it with a more...*embodied* response to things." [39] In other words, it may be that the language of art and design is necessarily poetic, and that to write about metaphysical concepts and reflective practices requires a new kind of discourse, one which runs the gamut of technological innovation and rhetorical presentation, and can integrate the discursive, the pictorial, the persuasive, and the instrumental.

In order to determine the extent to which some of these assertions—that the language of the creative arts is necessarily metaphoric, multi-layered, and qualitative, and that the rendering of multi-modal projects requires access to a range of meaning-making resources—I shall turn to a small sample of written material produced by a group of postgraduate students of art and design. For the purposes of this paper, I shall concentrate on elements salient to the foregoing discussion rather than on lexico-grammatical, generic, or methodological issues.

31 Richard Buchanan, "Declaration by Design: Rhetoric, Argument, and Demonstration in Design Practice," 104.

32 Clive Dilnot, "The State of Design History, Part II: Problems and Possibilities," 239.

33 Gunther Kress, "Design and Transformation," 159.

34 Steve Baker, "Thinking Things Differently" in *Things* 3 (London: V+A/RCA, 1995), 70–77.

35 Gunther Kress, "Design and Transformation," 159.

36 Clive Dilnot, "The State of Design History, Part II: Problems and Possibilities," 241.

37 Gunther Kress, "Design and Transformation," 155.

38 Richard Buchanan, "Declaration by Design: Rhetoric, Argument, and Demonstration in Design Practice," 108.

39 Steve Baker, "Thinking Things Differently," 74.

Design as Transformation

While the areas of investigation covered by the five students whose abstracts I examined are, in many ways, very different, ranging from risk assessment in the heritage hospitality business to concerns with the visual language of medicine, there appears, at the same time, to be points of contact and features common to an otherwise diverse set of projects. It would be unwise to make too many claims on the basis of a small sample of papers produced by students still in the early stages of their research. However, the written products provide evidence of modes of thought and presentational styles which may be considered representative articulations of complex, multi-modal projects. Several student projects were specifically concerned, for example, with relationships between media and the cultural, cognitive, and communicative effects of presentation in different modes.

One student, interested in the ritual power and effects of medicine, was keen to examine "photographic and video reconstructions of medical practices" which would "begin to reveal elements of a visual language which often is unacknowledged." She went on to suggest that the power and effects of medicine are not only related to beliefs in "science mediated through scientific thought and language" but that "performative language" as well as "visual symbolism and codes" are also involved in the social construction of medical roles and practices. Underlying such a project seems to be a concern with the relationships between text, image, and context, as well as with modes of communication (the visual, the performative, and the discursive) and the (powerful) effects of particular sets of practices.

This concern with the process of meaning-making and how discursive and interpretive practices shape perceptions and understanding seemed to be at the root of a number of projects. Another "theme" was the relationship between materiality and apperception. For example, one project involved an examination of the voice of the artist, voice being used in this context to refer both to the acoustic and material properties of voice, its qualities and modulations, and to the manner in which the voice of the artist is received and interpreted by particular audiences within society, more specifically in relation to other voices such as the voice of authority, the critical voice, and the voice of the people. Here again, we are concerned with the extent to which different material features and contexts impact upon cognitive and interpretive practices. In particular, the student appeared to be interested in the constitutive effect of particular material bases, and how they interact with and inform cultural and cognitive practices.

Yet another student expressed an interest in exploring what he called "organic connections between musical and visual disciplines." As a reflective practitioner involved in a collaborative project between musicians of the Guildhall School and visual artists of

the School of Communications at the RCA, he was interested in investigating the possibility of finding "a shared artistic language which has *resonance* (my emphasis) with wide-ranging audiences" and to explore "*new landscapes* (my emphasis) in music, art, and performance" (the MAP-making project). What surfaces very clearly here is the reliance on metaphorical uses of language and the transference of terms from one domain to another. This both reflects and is constitutive of a project concerned with cross-arts and cross-cultural work, and creates for the reader a sense of synaesthesia. As with the student for whom the concept of voice was ambivalent and multi-faceted, this student was concerned both with the "distinctive identities" of the acoustic and visual dimensions while, at the same time, recognizing their potential compatibility and mutability. He referred to the need to explore "the delicate balance between visual and acoustic [modes], identifying at what point one becomes subservient to the other..." Like the student concerned with the possibilities of the visual language of medicine, he was interested in revealing the potential of a collaboration between the "seemingly different cultures of art and design with the performing arts...." The transformative and creative potential of yet another medium, that of new technology within the arts, was of particular concern to another student who saw the development of computer applications and of rapid prototyping as (potentially) creating the conditions for a reunification of the "manual with the mental world."

In all of the above, we can detect a particular response to the context of reflective practice. The research process and, consequently, the language or languages used to articulate that process is necessarily qualitative, dynamic, and reflexive (though to varying degrees) in each case. We are not dealing with fixed or stable entities, but with fluid and dynamic conceptions and interactions. The objects of study are multi-modal and have heteronomous rather than strictly autonomous modes of existence. For this reason, I would suggest, it is necessary to use language creatively rather than instrumentally, and to foreground notions of design and transformation rather than notions of analysis and critique (Kress[40]). This is not to deny the need for theoretical and professional rigor, but to invite discussion and reconsideration of the creative as well as critical potentials of language and of art, indeed of the language of art. As John Wood,[41] in a recent article in *THES*, puts it: "Scholastic knowledge tends to emphasize 'knowing that,' whereas design requires more 'knowing how'". In the interest of reflective and transformative practice, it is perhaps best to combine different, but not necessarily mutually exclusive, modes of communication through the language of design.

40 Gunther Kress, "Design and Transformation," 160–1.

41 John Wood, "Dreams, Dogs, Design" in *THES* (February 18, 2000).

Reyner Banham: Signs and Designs in the Time Without Style

Vincent Michael

Reyner Banham's *Theory and Design In The First Machine Age* of 1960 was the first revisionist history of modernism, written at a time when the style had become broadly accepted. Banham was a student of Sir Nikolaus Pevsner, whose 1936 *Pioneers of the Modern Movement* may be considered the original narrative of architectural modernism. Pevsner's text was as much advocacy as history, an argument for a new style symbolizing a new age of industrial mechanization, while Banham's book exposed a gaping logical flaw in that argument and, in the process, developed a new understanding of modernism not as a style but as a way of thinking about design. It offered a theoretical vocabulary that allowed architectural history to go beyond style to encompass the subtleties of technological evolution.

Although Banham already was an accomplished critic, his first book, based on his dissertation under Pevsner, reveals some traits of his mentor including a focus on the relationship between modern art and architecture, and a view of certain movements—such as Art Nouveau—as art-historical "dead-ends." But he departs from Pevsner in the way he looks at art, producing not only a very different history, but a new critical framework that anticipated the technology of interactivity of the twenty-first century.

On its face, *Theory and Design* is a rejection of Pevsner and his *Zeitgeist,* just as the facade of the Villa Savoye rejects nineteenth century design. But Banham showed us the picturesque Victorian composition underneath Le Corbusier's facade, and similarly, we can see behind his own Pop aesthetic an architectural historian extremely adept at chronicling the spirit of his age. Banham built on the work of Pevsner, and where he departed from it he did so to uncover the potential of modernism in the later twentieth century. By looking at his methodology, narrative strategy, and perceptual outlook, we can see the value of *Theory and Design* as both a link to the past and a new set of theoretical tools for the future.

Methodology: Texts, Not Forms

Pevsner began his book with the comic spectacle of architect Gilbert Scott deciding between Gothic and Renaissance facades for a new government building, thus indicting the "academic" architect, whose facility with historical styles ignores the new formal possibilities of industrial engineering. In direct contrast, Banham starts by

looking at how architectural design was taught in the academy. He opens *Theory and Design* with the French academic architectural theories of Charles Blanc (formalist), Antoine Guadet (functionalist), and Auguste Choisy (rationalist). These set the tone and touchstone for the entire book, which becomes an exposition of various aspects of these theories. Pevsner is highlighting difference, while Banham is exploring "a design philosophy that was common to academics and moderns alike."[1]

The most significant methodological break between Banham and Pevsner is evident in Banham's title—*Theory and Design in the First Machine Age.* Banham is concerned not simply with the designs of modernism, but with the theory—and the theory comes first. His narrative is largely constructed around significant texts, and only brings in works of architecture and design to supplement the main story.

Banham gives more energy and rhetorical weight to Loos's famed treatise *Ornament und Verbrechen* (*Ornament and Crime*) than to his buildings. Likewise, his two chapters on Le Corbusier include several buildings, but are epistemologically organized around the Swiss architect's theories as expressed in *L'Esprit Nouveau and Vers Une Architecture.* The latter book is very closely analyzed, in conjunction with Le Corbusier's actual built works, in order to place him within the narrative that began with Guadet and Choisy. Buildings supplement the theories espoused in books and articles. Banham's history is organized around rhetoric, not built reality. It is not a history of architecture so much as it is a history of ideas about design.

This is why Banham "rescued" Futurism and de Stijl from the shadows of architectural history. While the architectural output of these movements was minimal, their theoretical production, especially in the latter case, was profuse. Banham's investigation of De Stijl quotes the movement's magazine at length, and he grows animated when analyzing a letter or text:

> Mondriaan opened the first paragraph of the first article in the first issue of *de Stijl* with the assertion "The life of contemporary cultivated man is turning gradually away from nature; it becomes more and more an a-b-s-t-r-a-c-t life," and practically every word in this simple-seeming statement is loaded with accessory meanings. The confrontation of *abstract* to *nature* is vital to the whole argument.[2]

One of the key figures in Banham's narrative—Antonio Sant'Elia—built nothing, but his *Messaggio*—a 1914 text that later was reworked by Marinetti into *The Manifesto of Futurist Architecture*—is quoted in its entirety in a detailed exegesis that has a significance equal to or exceeding the architect's visionary renderings.[3] Banham labors to uncover the sources of Sant'Elia's rhetoric, and

1 Reyner Banham, *Theory and Design in the First Machine Age,* (London: The Architectural Press, 1960), 20.

2 Ibid., 150.

3 Ibid., p. 127. Banham claims that "no buildings designed under his own name appear to survive with any certainty." Randall J, Van Vynckt, ed., *The International Dictionary of Architects and Architecture* (Detroit: St. James Press, 1993) credits Sant'Elia with a 1911 Villa in the style of Klimt, a 1913 cubist tomb, and two building decorations prior to his death. Attilio and Giuseppe Terragni built a 1933 war monument based on Sant'Elia's sketches.

only analyzes the drawings later as the visual expression of that rhetoric. Sant'Elia is important because he anticipates not the forms but the ideas of Gropius and Le Corbusier. Again, Banham is at his most animated in dealing with text:

> This kind of revaluation of older bodies of ideas, accepting much of what they had to say as true, but recasting them in new frames of reference that often completely altered their meaning, was to become the common ground of mainstream ideas in the Twenties....[4]

Similarly, Banham's treatment of the Bauhaus begins with a search for an outline of the school's *Vorkurs*, followed by a detailed intertextual analysis of documents from Gropius and other Bauhaus masters. Passages from these documents are then categorized by Banham as reflecting the influence of Futurism, cubism, or de Stijl, and he meticulously traces the influences of one set of ideas on another in order to lay out the correct chronology of the Modern Movement. His assessment of the Bauhaus is presented in these terms:

> Much of its historical interest lies in the manner in which it reflects the changing aspect of German architectural thought in the Twenties, though its ultimate historical significance will always lie in the effect it had on international architectural thought in the Thirties and Forties.[5]

Banham's focus is not architecture but architectural *thought*. In this regard, his history of Modernism is a history of ideas, while Pevsner's is a history of forms. Banham is analyzing the theory of modernism, and since theory most often is found verbally, texts become more important. They provide the structure for Banham's story, and while buildings and designs have significance, it matters little to him whether they are built or not, only that they fit his *argument*. Garnier's *Cité Industrielle*, Sant'Elia's *Città Nuova*, and Le Corbusier's *Plan Voisin* and *Ville Radieuse* are the dominant expressions not only of modernist city planning but, to a large extent, of modernist architecture as well. And they were never constructed, nor even fully designed. They are visual expressions of theoretical ideas and, as such, they play a major role in Banham's narrative.

Texts resound through Banham's oeuvre. *The New Brutalism* begins with the chapters "In the beginning was the phrase" and "Polemic before Kruschev," and sets out a social and political context for the ideology of the New Brutalism before launching into a discussion of the buildings. Not only is the construct Pevsnerian, but Banham introduces a sort of ideological determinism in framing his argument:

> Even if the New Brutalism as such did not really exist in December 1953, the situation which made it necessary did exist, a situation which needs to be examined in order to

4 Reyner Banham, *Theory and Design*, 130.

5 Ibid., 277.

understand how it was that a Swedish phrase dropped into an English context should become a slogan with worldwide echoes.[6]

Theory and theoretical designs were extremely important for the Modern Movement. These manifestoes, journals, books, and utopian visions had an impact. Banham not only chronicles the certain influences where one artist or designer reacted to an earlier thought or design, but also spends no little energy deducing influences where they *likely* existed. Thus, in *Theory and Design* we learn that Erich Mendelsohn's 1919 exhibit at Cassirer's gallery in Berlin caused T.H. Wijdeveld to invite him to lecture in Amsterdam; that only J. J. P. Oud's broad definition of cubism allows one to see a cubist influence on architecture; that Marinetti brought Sant'Elia to the attention of *de Stijl;* and that Le Corbusier's "hammering of the importance of the plan" reflects the likely influence of Guadet and the presentation traditions of the *Ecole de Beaux-Arts.*[7]

The Futurist Manifesto and Werkbund Exhibition of 1914, the Bauhaus of 1919, the *Weissenhofsiedlung* of 1927, and the foundation of CIAM a year later—each had a distinct political and ideological flavor. Even contemporary histories of modernism put great weight on theory—not only architectural theory but also social theory and theoretical designs that were never built-such as Tatlin's tower—yet continue to inspire.

Paradoxically, Banham later lauded Hitchcock and Johnson's *International Style* for being "the first book of propaganda for modern architecture which contains no visionary projects or renderings of uncompleted works."[8] Just as the European modernists were astounded not simply by Frank Lloyd Wright's designs but by the fact that he was able to *actually build* so much by 1910, Banham was impressed by Hitchcock and Johnson's assemblage of an architectural history based solely on executed works. But he does not let go of his ideology. This ideology "drove the style in Europe" and without it the movement is incomprehensible to Banham.[9]

Why does this aficionado of things American—this lover of Pop and Las Vegas long before they were intellectually fashionable—hang on to a European frame of mind that even Walter Gropius lamented as being so tied to theory as to inhibit practice?[10] He does so for three reasons. First, he needs the European predilection for theory and ideology to structure his narrative. Second, he uses this theoretical emphasis to shift the focus from form to symbol. His third reason for focusing on theory is to expose a logical flaw that paralyzed modernism, and prevented it from transcending issues of style.

6 Reyner Banham, *The New Brutalism, Ethic or Aesthetic* (Stuttgart: Karl Krämer Verlag, 1966), 10.

7 Reyner Banham, *Theory and Design,*. The examples cited are from 167, 153, 155, and 225, respectively.

8 Reyner Banham, "Actual Monuments," from Mary Banham, et al, *A Critic Writes: Essays by Reyner Banham* (Berkeley: University of California Press, 1996), 284. The essay originally appeared in *Art In America* 76 (October 1988).

9 Reyner Banham, *Theory and Design,*130.

10 Walter Gropius, *The Scope of Total Architecture* (New York: Collier Books, 1962). In his introduction of 1953, he states: "When I came to the USA in 1937, I enjoyed the tendency among Americans to go straight to the practical test of every newborn idea, instead of snipping off every new shoot by excessive and premature debate over its possible value, a bad habit that frustrates so many efforts in Europe."

Primacy as Agency in Constructing a Historical Narrative

Banham's narrative structure in *Theory and Design* bears a close resemblance to that of his predecessors. As much as Banham desires to surpass his mentor in *Theory and Design,* he is a student of Pevsner, and has not completely given up the *Zeitgeist*. Pevsner was defining modernism in *Pioneers* and Banham was consciously investigating its theory. Their narrative methods were quite similar. Both were concerned with innovators—who was "first." For example, Banham assures us that Mart Stam invented the tubular steel chair, edging out the nearly contemporary completion of one by Mies. He recognizes that "it soon appeared almost an anonymous, automatic creation of the *Zeitgeist,* like Choisy's flying buttress."[11] This passage reveals Banham's concept of historical agency, at least in his concern with the history of design and ideas about design.

> It (a text by de Marle claiming the chair as a collective invention) could only have appeared plausible at a time when it was general practice to suppress or ignore the actions that generate history (such as Stam's invention of the integrated chair) and make history the generator of the actions....[12]

On the surface, Banham is challenging the notion of the *Zeitgeist* as a motor force in history, although a closer look at this section of *Theory and Design* shows him incorporating elements of the *Zeitgeist* method:

> This spirit of the times in the plastic arts was largely the creation of an interaction of Cubist forms and Futurist ideas, as was *de Stijl,* as were most of the movements it encountered or allied itself to. Much of *de Stijl's* importance lay in its being first in the field with an organized body of ideas, a magazine, and an energetic impresario.[13]

It is important to Banham—as it was to Pevsner and Giedion—who was first to invent or espouse or design something. By establishing a primary action or invention, all subsequent actions are more likely to have been influenced by the primary one. Firsts are elevated to a more significant role in the narrative, and later actions, even if more popular and widespread (like Mies's chair), are lowered in estimation or seen as derivative.

Primacy also ensures that the human actors remain in the story, which is of even greater value to the creation of a strong narrative. By establishing a primary action or invention, the actor or inventor maintains control of the narrative, as has been the case since Vasari's *Lives.* Banham, like Pevsner, is writing a history with a series of heroes—*Pioneers's* subtitle was *From William Morris to Walter Gropius,* and Banham later wrote the hero-laden *Age of the Masters.*[14] While Pevsner and his generation saw those heroes as limited or influenced by the *Zeitgeist,* theirs was still a very human

11 Reyner Banham, *Theory and Design,* 198.

12 Ibid., 199.

13 Ibid.

14 Reyner Banham, *Age of the Masters: A Personal View of Modern Architecture* (New York: Harper & Row, 1962), 1975.

and, therefore, compelling narrative. And one might argue that an older, more superstitious generation was more comfortable with a sense of destiny or *deus ex machina* as an agent of history than the self-absorbed, self-reliant generations emerging after World War II. Banham was in the latter group and, for him, individuals are even more important.

In 1966, Banham opined that:

> History has not been shaped solely by deep social groundswells, inexorable economic forces, new sources of power or improved means of communication. It has also been decisively shaped by unforeseeable individuals (Lenin, Gandhi, Martin Luther King—but also Christian Dior, Elvis Presley, and Jackson Pollock) whose power to utter the right word and turn the necessary gesture has made great trends conscious and comprehensible, and defined the forms in which history, and their contemporaries, could recognize the drift of events.[15]

While Banham prefers individuals as the motive forces of history, he clearly sees ideas and forms as influential. *De Stijl* occupies the role of "the true founders of that enlightened Machine Aesthetic that inspired the best work of the twenties."[16] The difference between Pevsner and Banham is that, for Pevsner, the *Zeitgeist* lends an air of inevitability to the narrative, whereas, with Banham, we see stifled possibilities, missed chances, and the force of personality giving us one result when many were historically possible.

Today, we see limitations to primacy. The Altair was the first personal computer, but what was its historic impact in light of the Apple and IBM PC? Or, even more to the point, what is the impact of the personal computer as *objet* in relation to the impact of Microsoft's interactive software? People still sell Mies chairs and Breuer chairs—not so with the design by Stam. Banham is playing an old historical game—one that rewards the scholar with fame if not fortune—by looking for primacy. But if this is a weakness in *Theory and Design,* it is one that Banham remedied later, notably in his 1969 history of building systems, *The Architecture of the Well-Tempered Environment,* in which he ventured beyond traditional sources, and thus beyond the emphasis on primacy:

> ...the art of writing and expounding the history of architecture has been allowed—by default and academic inertia—to become narrowed to the point where almost its only interest outside the derivation of styles is haggling over the primacy of inventions in the field of structures. Of these two alternatives, the study of stylistic derivations now predominates to such an extent that the great bulk of historical research is little more than medieval disputation on the number of influences that can balance upon the point of a pinnacle.[17]

15 Reyner Banham, "The Last Formgiver" in *Design by Choice* (London: Academy Editions, 1981), 42, originally appeared in *Architectural Review* (August 1966).

16 Reyner Banham, *Theory and Design,*153.

17 Reyner Banham, *The Architecture of the Well-Tempered Environment,* (Chicago: The University of Chicago Press; London: The Architectural Press, 1969), 12–13.

Banham here recognizes the limitations of primacy on a field so tied up with the economic and culture predispositions of the user, and rejects the "platonic absolute" found in Sigfried Giedion's *Mechanization Takes Command,* which emphasizes "legal primacy of invention." [18] Banham's investigation of building systems reinforced his ideas about interactivity, since system designers work in a sort of feedback loop with system users.

But even *The Well-Tempered Environment* did not abandon the human agent so much as broaden architectural history to include engineers, systems and appliance designers, and to extend the understanding of primacy to include the subtleties of marketing and distribution. As Banham notes: "In the practical arts like building, it is not so much the original brainwave that matters as much as the availability of workable hardware, capable of being order ex-catalog, delivered to the site, and installed in the structure." [19]

Symbolic Content

Theory and Design is a narrative of the fast-paced, ideologically charged and quickly changing milieu of architecture and design between 1910 and 1930. This was an era when theorists derided ornament, sought temporary architecture, and co-opted every image of technological newness they could find, from the aeroplane and motor car to the ball bearing and radio. What Banham did was expose the nineteenth century academic logic underlying the fashion of architectural modernism. *Theory and Design* telegraphed a critique of architectural ideology that underlies Banham's subsequent work, a view that architecture must go beyond forms to incorporate systems—those elements of design which are interactive between designer and user.

Herein lies the second reason for Banham's emphasis on theory, one that takes him further from his dissertation advisor. He was shifting the focus of art historical research from form to symbol. Pevsner and Giedion had so concentrated on the physical attributes of this new modern style—albeit as an expression of the modern, mechanized world—that it lost its theory and thus its ideology. By 1960, the excesses of modernism were apparent as this new academic style defined postwar corporate culture, stripped of its socialistic symbolism. Banham found that the reason for this loss lay in the modernist's own emphasis on form as opposed to content.

Certainly, art historians who spoke of the *Zeitgeist* valued the symbolism of forms, which represented the social, cultural, and economic world. And there was much in Giedion and Pevsner about engineering and materials and structure. But these writers did not prize content—that was Banham's innovation. As summed up by Nigel Whiteley, Banham's view was "that the emphasis in design criticism should not be the modernist one of an appreciation of abstract and disinterested form, but an examination of meaningful content." [20] And that examination of content was not made from the

18 Ibid., 15ff. Banham is openly frustrated with Giedion's *Mechanization Takes Command,* calling it a "shallow and unconsidered" study.

19 Ibid., 15.

20 Nigel Whiteley, "Olympus and the Marketplace: Reyner Banham and Design Criticism" *Design Issues,* 13.2 (Summer 1997): 33.

moral position that imbues the language of Pevsner and Giedion, but from the essentially amoral, even hedonistic position of an enthusiastic consumer. The language of high art is deliberately gone by 1966:

> Architecture, that staid queen-mother of the arts, is no longer courted by plush glossies and cool scientific journals, alone but is having her skirt blown up and her bodice unzipped by irregular newcomers which are—typically—rhetorical, with-it, moralistic, misspelled, improvisatory, anti-smooth, funny-format, cliquey, and art-oriented but stoned out of their minds with scientific visions of alternative architecture that would be perfectly possible tomorrow if only the Universe (and especially the Law of Gravity) were differently organized.[21]

As hard as it is to disregard the form of this rhetoric, its content flows clearly out of *Theory and Design*. It is about theory and texts—new, with-it, wild texts and designs that always aren't about buildings. Banham was chronicling "the erupting of underground architectural protest magazines" and in the middle of his rant you hear again and again the call for "relevance."[22] The meaning—the content—of the architecture is what is most important to him. When Banham talks about "An architecture relevant to the whole scene that's going" he has, in one sense, found another way of saying "the spirit of the age," only it is ascertained not by a Pevsnerian judgment on formal qualities but by a Banhamian take on content. At another level, he has started to deconstruct the one-way *Zeitgeist* of art history and replace it with the social and interactive approach of nascent design history.

What Banham did over the course of his career was to add a new level of understanding to Pevsner's art historical tradition, one that reflected the experiential and ephemeral nature of popular culture. In looking at design, Banham focused on "use" and "symbolic expression," much as Pevsner and Giedion did. But, as Nigel Whiteley has shown, Banham invested these modernist terms with a new sensibility.[23]

> Use was a decidedly human aspect of design, not just a quasi-ergonomic one in which an object's "nature"—by which modernist designers tended to mean the graspability of a handle or pourability of a spout, for example—helped shape well-proportioned and handsome form. Whereas, for Banham, even as early as 1951, "aesthetic value is not inherent in any object, but in its human usage..."—a thoroughly post-modern claim.[24]

21 Reyner Banham, "Zoom Wave Hits Architecture" in *Design by Choice* (London: Academy Editions, 1981), 64, originally in *New Society* (3 March 1966).

22 Ibid.

23 Nigel Whiteley, "Olympus and the Marketplace."

24 Ibid., 26. The Banham quote is cited from "The Shape of Everything,"*Art News and Review* (November 28, 1953): 3.

In another essay, Whiteley offers up a "third machine age," which Banham obliquely defined in later writings. In this age, "The emphasis shifts from 'hardware' to 'software,' from *things* to situations and events." [25] Banham the critic reveled in the ephemera of Pop because it was *interactive*—because the consumer also was a participant, and use helped determine design—perhaps to the point of excluding any concept of an artistic absolute. As Gillian Naylor has observed: "To bowdlerize Baudelaire, he is the historian / proselytizer / champion of 'the transient, the fleeting, and the contingent' in modern life." [26]

Banham grew up loving American culture, and devouring cheap westerns, science fiction, and television. These inspired the lively critical articles he wrote from the 1950s through the 1980s. In 1968, he trumpeted the virtues of the "software" of the camp film *Barbarella* in opposition to the "yech...*hardware*" of the overly serious film *2001: A Space Odyssey*. [27] *Barbarella* was not only ephemeral, it was experiential in both form and content, and even better, it was art-historical because it was derivative from earlier ephemera, a third-generation comic book translated back and forth from American. "Both *Barbarella* in its original French cartoon-strip form, and *Archigram's* plug-in city project are half-jokey European intellectual derivatives from basic U.S. pulp S.F." [28] The serious, high-culture outlook of art history is gleefully disregarded by Banham, but the methods are not. Concerns of form and style are still there—he has simply added a populist, consumerist and, ultimately, *interactive* approach to form and style. He not only allowed, but indeed reified, ephemera as he sought to define a discourse of design for the throwaway economy of the post-World War II West. Reyner Banham saw purely symbolic forms as *useful* for purely symbolic social actions—something the need-based rationalists of the First Machine Age would not or could not admit.[29]

Modernist Storytelling

With this understanding of Banham's method of assembling evidence and constructing a narrative, the next question is where the story in *Theory and Design* leads us and why Banham is telling it. And this brings us to the third and final reason for his reliance on theory. Banham is focusing on the theoretical basis of modernism because he senses a flaw in its construction, a fundamental logical error. In the 1950s, he was faced with the question: How did a movement with such a body of theory become just another style? By tracing the development of that theory, Banham identified a split inheritance that was never resolved—the tension between rationalism and composition.

The split is seen most clearly in the theories and designs of Le Corbusier, who adopted the theoretical braggadocio of Futurism while following the compositional tenets of Academicism. This left him, in Banham's view, a prisoner of style, if also a genius of style as

25 Nigel Whiteley, "Design and the Theory of Four Machine Ages" in *Desire, Designum, Design: Proceedings of the Fourth European Academy of Design Conference* (Aveiro, Portugal: Universidade de Aveiro, 2001), 360.

26 Gillan Naylor, "Theory and Design: The Banham Factor," *Journal of Design History* 10:3 (1997): 245.

27 Reyner Banham, "The Triumph of Software" in *Design by Choice* (London: Academy Editions, 1981), 136. Originally appeared in *New Society* (October 31, 1968).

28 Ibid.

29 Nigel Whiteley, "Olympus and the Marketplace," 29.

Banham willingly admits when confronted with the sheer formal beauty of the Villa Savoye. But this formal beauty is neither functional nor rational. At Savoye, Banham finds that the windows run without regard to internal function:

> The feeling of the arrangement of parts within a predetermined frame is heightened by the continuous and unvaried window strip—the ultimate *fenêtre en longeur*—that runs right round this floor, irrespective of the needs of the rooms or open spaces behind it.[30]

Similarly, he finds the curves in the grid plan more picturesque than rational:

> Not only are these curves, on plan, like the shapes to be found in his [Le Corbusier's] *Peintures Puristes*, but their modeling, seen in raking sunlight, has the same delicate and insubstantial air as that of the bottles and glasses in his paintings, and the effect of these curved forms, standing on a square slab raised on legs is like nothing so much as a still life arranged on a table.[31]

Other theorists and designers also reveal this flawed inheritance. Gropius sought not rational and functional design without style, but "forms symbolizing the world." Banham allows ultra-engineer R. Buckminster Fuller to call the modernists to the carpet on their supposed devotion to Rationalism:

> The "International Style" brought to America by the Bauhaus innovators, demonstrated fashion—inoculation without necessity of knowledge of the scientific fundamentals of structural mechanics and chemistry.[32]

Banham then delivers the *coup de grace* in a most Pevsnerian manner by comparing the design of Fuller's Dymaxion car to Gropius's hopelessly Edwardian car body for Adler. The Fuller design is a complete liberation from style occasioned by a focus on engineering, while Gropius's is a competent form but hidebound in style and concept. Banham then finally reveals where modernism failed itself: by abandoning the concepts of Futurism and falling back on its other, academic tradition.

> ...the theory and aesthetics of the International Style were evolved between Futurism and Academicism, but their perfection was only achieved by drawing away from Futurism and drawing nearer to the Academic tradition, whether derived from Blanc or Guadet, and by justifying this tendency by Rationalist and Determinist theories of a pre-Futurist type.... In cutting themselves off from the philosophical aspects of Futurism, though hoping to retain its prestige as Machine Age art, theorists and designers of the waning Twenties cut themselves off not only from their

30 Reyner Banham, *Theory and Design*, 325.

31 Ibid.

32 Ibid., 327.

33 Ibid.

> own historical beginnings, but also from their foothold in the world of technology.[33]

While one might argue with the true weight of Futurism as modernism's "historical beginnings," one cannot dispute that Banham exposed the movement's Achilles heel: a pretense to scientific rationalism that is more concerned with form and appearance than with technology. Le Corbusier trumpeted the "mystique of mathematics" in *Vers Une Architecture* but, as Banham notes, mathematics was "the only important part of scientific and technological methodology that was not new."[34] In 1961, Jane Jacobs would take this critique a step further in *The Death and Life of Great American Cities,* her attack on modernist urban planning. Scientific thought has three phases, notes Jacobs, the first—from the Enlightenment to 1900—dealing with two-variable problems. The second phase, marked by physics and social statistics, deals with problems of disorganized complexity. The third phase, after 1930, is the biological and genetic phase that can deal with problems of organized complexity. Modernists tried to use the first and second methods to deal with cities, which are clearly, in her view (and Lewis Mumford's) *organic* problems.

Banham further developed his critique of modernism in his later works. *The Architecture of the Well-Tempered Environment* revisits the theoretical limitations of Le Corbusier and CIAM.

> The whole generation (Corbu and CIAM) was doubly a victim; firstly of an inability of its apologists and friendly critics to see architecture as any more than a cultural problem, riding upon a conventional view of function that had not been related to twentieth-century needs; and, secondly, of its own (apparently willing) submission to a body of theory more than a half a century behind the capabilities of technology, still preoccupied with problems—such as the use of metal and glass in architecture that had been propounded by the generation of Sir Joseph Paxton and Hector Horeau in the 1850s, and so effectively solved by those mid-Victorian masters....[35]

Banham's own interests in technology looked to the intersection of humans and machines in a more organic way, if we can judge from his "activist" roles outlined in recent essays by Gillian Naylor and Nigel Whiteley. Banham was an engineer who respected the sublime design of a device for human action and interaction. His *Theory and Design* examines how a design *movement* failed to live up to its ideology of engineering and became yet another formalistic style, preoccupied with Phileban solids and primary colors when it should have been attacking design problems. As an art critic, he was paving the way for his own machine age to redress those problems,

34 Ibid., 328.

35 Reyner Banham, *The Architecture of the Well-Tempered Environment,* 143.

focusing on design without formalism, in hope of finally achieving the dream enunciated in the futurist manifestoes.

Interactivity, and "soft" designs that not only "moved" but in fact were "designed" by the user became the focus of much of Banham's work in the 1960s and 1970s. His method retained some links to the old formalisms of *Kunstgeschichte,* but his subject matter literally exploded, incorporating everything from automobiles (an obvious fixation given his interest in Americana) to electric shavers. Nigel Whiteley has correctly identified Banham's great contribution as "the shift from design as a satellite of fine art to design as a social discourse."[36] Banham threw open the walls of art history to encompass a world of design that Pevsner would have sniffed at. But he did not give up on Pevsner.

Conclusion

Banham found himself defending Pevsner in 1978, when David Watkin's iconoclastic *Morality and Architecture* savaged him. He veritably leapt to the defense of his mentor's method, claiming that "that *Zeitgeistical* approach had, perhaps still has, and may have again, a special usefulness."[37] Mercilessly attacking Watkin, Banham supports Pevsner's own primacy in architectural history:

> Pevsner nailed his colors to the Bauhaus even earlier than Sigfried Giedion did. Some of their intellectual maneuvers, both Pevsner's and Giedion's, in the cause of demonstrating that the Bauhaus / International Style must triumph seem as doubtful to me as they do to Watkin. But it is evident that he picked a winner.[38]

He goes on to say that modernism not only "won," it "encapsulated the architectural ambitions of our powers-that-be as surely as High Gothic, or Anglo-Palladian, or any other dominant style...."[39] Banham may have found the logical fault in modernism, but like finding fault in the use of the atomic bomb, the reality of the event and its effect on history is in no way reduced or diminished by its rational or moral weakness.

His final defense of Pevsner's *Pioneers* follows from this power of "fact" to rescue not only Pevsner, but his whole idea of style, so cavalierly discarded in *Theory and Design.* "The discovery and delivery of such generalizing patterns (as the *Zeitgeist*) is one of the services that historians render to the lay members of society."[40] Can we then see *Archigram's* walking cities and *Star Wars* as examples of the *Zeitstil* for Swinging London or Disco Death America? Yes, I think we can, but only if we recognize the next level that Banham gave us. After burying the form-givers, Banham the content-giver promised us a future of design, a triumph of interactive "software" that would have the flexibility and rhetorical force of futurism without the baggage of style. I would characterize *Theory and Design* as the first salvo in this effort, not so much a revisionist

36 Nigel Whiteley, "Olympus and the Marketplace," 33.

37 Reyner Banham, "Pevsner's Progress" in Mary Banham, et al, *A Critic Writes: Essays by Reyner Banham* (University of California Press, 1996), 217. The essay originally appeared in *The Times Literary Supplement* (17 February 1978).

38 Ibid., 221.

39 Ibid.

40 Ibid.

history that rejected modernism but a narrative that advocated the *ideas* of the Modern Movement, not the buildings or styles that evolved out of those ideas. So much of Banham's work sought what modernism promised but could not deliver: designs that went beyond forms and styles. In *Theory and Design* Banham was trying to reset the logical parameters to make that quantum leap possible.