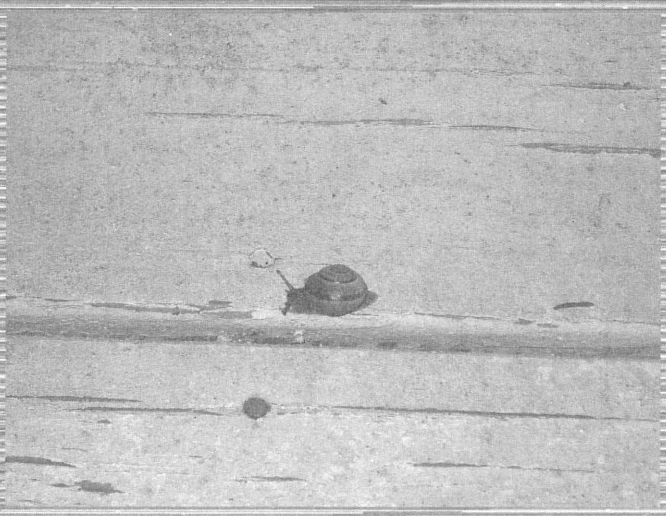
Limits of Language, Limits of Worlds



DIETMAR R. WINKLER

Biography

Dietmar R. Winkler is professor in the graphic design program at the School of Art and Design of the University of Illinois at Urbana-Champaign. In his career, he has been combining professional design practice with the teaching of design and communication subjects. His interdisciplinary interests are to expand traditional visual and form literacy to include user-based design in b>avioral, social and cultural contexts. Previously, for twenty years, he was a faculty-member of the Design Department and an adjunct faculty member in the cognitive science program of the Psychology Department at the University of Massachusetts Dartmouth. He has written on design education and communication issues with his articles appearing in publications of AIGA, ICOGRADA, *Visible Language* and *Design Issues.*

Abstract

"Limits of Language, Limits of Worlds" sets the stage for the articles that follow. It gives the general rationale for the discussions that formed the impetus for the selection of subjects for papers which include the inherent limitations of expert languages, the need to integrate visual literacy with all literacies that make up a language and its culture, the need for a vibrant cross-disciplinary discourse and the need for exploration of the relationship of theory to practice.

"The mediating link between theory and practice, is the human essence – grounded in human feeling, experience, and intersubjective agreements that cannot be 'universalized' in the logic of the formula."

Richard T. Dyro, Semiotician, *Life as a Process of Learning*, 1982

Introduction

The topics for this issue emerged in what one can consider a unique experiment for a beginning academic interdisciplinary discourse. During past semesters the focus of a seminar was to establish an understanding of the differences between the visual literacy competencies needed for machine vision and the production of communicative art objects. A group of researchers in masters and doctoral programs of various disciplines in the arts and sciences at the University of Illinois at Urbana-Champaign shared this common seminar. It was moderated at times by Seth Hutchinson, faculty member in Electrical and Computer Engineering at the Beckman Institute, and two faculty members of the School of Art and Design, Len Singer, professor of industrial and product design and human factors specialist, and Dietmar Winkler, professor of visual design. Participant backgrounds ranged from specializations in communication and advertising, graphic and industrial design, studio arts and art education, and (electronic and time-based) narrative media to psychology and robotics.

There was a natural crossover between disciplines, and the diverse group shared its sources, among them Nelson Goodman, Ernst Gombrich, Rudolf Arnheim, for example, as well as texts on perception, optical illusion, optics, neural nets and other related subjects. Certainly, there was awareness of issues in perception and communication framed by the b>avioral and social sciences, but it seemed as if the expert languages of robotics as well as art considered these external and not central to either the making of art objets or to machine vision.

Theory and Practice

From the very beginning it became clear that theory and practice in art are separated to such an extent that the principles of form making, although applicable and useful to the practice are finally not a measure of either uniqueness, quality or communicative effectiveness or impact, with the result that even if all principles are properly and correctly applied, the communication may be anything other than useful or functioning or a unique and compelling aesthetic statement.

In Umberto Eco's vision the universe is made up of chaos and cosmos, of understandable order and of natural, and for the present moment seemingly confusing and not compr>endible, disorder. To combat this destabilizing and debilitating "chaosmos," each discipline has organized itself around specific theories that at least for a short time harden the elasticity of knowledge so that they are enabled to anchor application and implementation in practice. Because of the internal struggles for supremacy, all disciplines are notorious for their inability to share knowledge with another.

While an interdisciplinary network is needed from which a multifaceted view of the same world can emerge that is less stilted and segregated, the specialist is ignorant of other branches of knowledge. Finally the specialist is utterly incapable of forming a judgment on the role and importance of his own knowledge within the context of human knowledge and culture. Jürgen Habermas identifies the "professional expertise complex" as a danger and without broad critical thinking skills, yielding each succeeding generation of professionals so entrenched in the execution of their professional roles that they are ill-equipped to have a wider critical view of the world. The social consequences of the political and economic structures served and maintained by professional experts are never examined and critiqued.

In each discipline, theory and practice may be intended to collapse into one another, but in most instances they do so only partially. They are rarely seamlessly interlaced because of the broad strokes and the disciplinary isolation in which theory is developed. Perhaps theory should not be considered as a direct pragmatic support for the innumerable variables that crop up in everyday problem environments. Each issue may be unique in itself even though it may relate distantly to the core of a theory. Theory may serve best as a catalyst for an ongoing dialogue to energize areas of both theory and practice.

In design for example, the flow of the process is frequently described in very abbreviated ways as moving through clearly defined sequential stages, namely from design research and conception through design development and implementation to design production and user testing. The model makes sense, but can only be applied in broad strokes. Depending on the circumstances and needs of individual projects, research and user testing may take place throughout all phases in an iterative process in which cycles recur and tasks repeat. The model may seemingly have a linear structure when in fact, in its unfolding, it is a web of interactions that depends in its complexity on the equally intricate quality of inquiries that have to be fulfilled, the time frame in which a solution has to be found and the budgets that are available for either a thorough or superficial solution.

In the same way, Shannon's model of the communication process is correct in its description of the technical aspects of a typical flow of measurable thermal dynamic information (message: encoding, sending, noise, receiving, decoding). His model was expanded way beyond his intentions by the advertising industry which used it to its advantage, even though it has only direct bearing on the technical part of communication, not on the context related contents of the messaging process or the b>avioral, social and cultural makeup of the reception, response and resulting action.

Many additional aspects have to be included to make his model truly functional in communication and advertising: the determination of the context and the need for a message, the configuration of the demographics for the receivers (primary and secondary readers), the selection of visual, textual, aural and tactile modes of encoding, the sophistication of metaphors embedded in the narratives that frame and elucidate the message, the modes of reinforcement, reiteration and support of the core concept, the variables of immediate and delayed compr>ension and the various modes of response and action to a message. In this interdisciplinary crossover model, noise is not only the technical interference with a message, but it is any interference

or distortion whatsoever, including value shifts in the political, social and economic climate.

Another difficulty arises in that theories are adopted by loyalist camps that take concepts developed in disciplinary isolation or in different competing segments of the same discipline and create myopic political stratas. The understanding is further obscured by institutional and national competition and it is practically out of reach of a practice which buys into the trend of the day. A good example from psychoanalysis is the pitting of Sigmund Freud's pioneering ideas against Carl Jung's further explorations. These are reconciled in the theoretical arena, but rarely by the practitioners who make clear and irrevocable distinctions between their colleagues as Freudians or Jungians.

In the arts, even though there has been a traditional philosophical separation from science, as part of the academy, each segment (fine and applied, visual and performing) had to begrudgingly adapt itself to a certain degree to the scientific method, in which knowledge starts from the concrete and is raised to general propositions through a process of induction. Theory in the arts is looked upon as providing a hold on mastery and therefore control of the practical environment of professional b>avior. The correct but narrow observations regarding the function of form have evolved as starting points for theory, but must include a much larger range of issues that are addressed outside of its confinement by the b>avioral and social sciences.

One of the major issues in machine vision is the current inability for robots to recognize and understand the dynamics of contexts. They recognize shape, form, color or location, but they are unable to do more in their interpretation than furnish quantitative and physical relationships. At this point, machine vision is unable to distinguish between emotionally dynamic or charged objects or images. Therefore, the question emerges, would the established visual language of object and image makers help in overcoming that hurdle? It turns out that the language and principles of the arts show the same inability to deal with contexts. Contextless, void of both social and b>avioral foci, the artistic language, mostly codified in the twentieth century, uses some scientific methods to establish a working taxonomy, very much like computer vision. But it deals only with what is physically seen, ignoring the interpretation of the viewer/critic who defines the context through personal knowledge and experience. Because the image and object making language evolved in isolation from the b>avioral sciences, its axioms are unable to support communication beyond the direct analysis of the physicality of objects and images. Using a semantic differential, establishing opposites, it can declare what something is or is not. The critique can only be about the pragmatic. The semantic and syntactic evaluations are externally housed in other disciplines like philosophy, rhetorical theory and literary criticism, or in the life experience and value system of a viewer. Only in the dialogue with audience and critic does the context emerge.

Lester Loschky in his paper "Some Things That Pictures are Good For" suggests that people are comfortably confident with their sense of awareness of their immediate surroundings at any given moment. But psychological studies on perception over the past decades have come to show that the visual experience they study is in fact quite limited, bearing out Arthur Köestler's conjecture that most common human experience is

quickly dispatched to the unconscious. Humans are rarely cognizant of how little visual information they are able to take in or hold onto. The paper explores the limits of visual attention at any given moment which limits the possibilities of experience. It also addresses the issues of severe spatial limitations in visual resolution in which only small regions of the visual field are rendered in the greatest fidelity and detail, while the periphery is degraded. It also deals with the limitations of visual short term memory.

Form Languages and Their Limitations

The most obvious mission of visual language is the representation of the physical world. Visual language, taught to establish form for objects and images at art and design schools, is one small part of the complex visual communication literacy system. But objects and images are not independent from belief and value systems, from status and hierarchy or from emotional conditions. As soon as the concept of form is expanded beyond the physical into contents and context, b>avior and experience, then it becomes obvious, that this form making language is incomplete. It is a one-way expert language, made for the maker, aloof and often indifferent to the audience. That is why image makers do not really know how images work. They are released to the public with an assumption of effectiveness based purely on the personal experience of the maker, who rarely comes in contact with the audience. Art historians and philosophers have focused primarily on aesthetic issues. Aesthetics is a vital part of the language of art, but because of its extreme changability over short periods of time, setting new trends and building new canons, it does not reveal a dependable system with which to deal with either the making or the interpretation of form in the environment of daily communications. That is why the arts can benefit from the contributions of social and b>avioral scientists.

In the long history of shaping the formal rhetorical system of verbal dialogue and discourse, the understanding of how text functions has found more researchers. Also, in the traditional power battle between the rhetorical systems of the visual and the verbal, the visual is still wide open for exploration, while the verbal arena, through its compilation of analytical methodologies over centuries, provides a strict or at least more defined canon that has evolved to establish a communication taxonomy.

We know for a fact from the social and b>avioral sciences that the larger portion of the visual communication process in the daily affairs of people is outside of their conscious awareness and that it is dynamic — that what is seen and interpreted is context based. The strongest support for open-ended investigations of visual languages has come from outside of the arts, from anthropologists, b>aviorists and sociologists. In the emerging paradigm of visual literacy the findings of the social and b>avioral sciences play a major role in reforming the narrow language of art. In the same ways in which contemporary biologists and physicians see the human holistically, brain and body not separate from the neural sensing system, they have introduced holistic views of communication which include b>avior sustaining or stimulating contents and social and cultural contexts. The other advantage is that they do not single out one sense over another, sight over hearing or touch, and therefore allow a glimpse at contextually linked communication in which all senses under certain conditions render the most efficient communication results

to sustain the individual as well as the larger societal structure.

Psychologists have provided one of the underlying sciences for communication, namely the understanding of gestalt and how it builds order on one side, but on the other creates the impetus for the individual to embrace an emerging concept, object or experience or to reject it. In the arts, "form" was originally coined to build the analytical taxonomy for the physicality of works of art, design and artisanry. This word has expanded in its meaning, as synonyms for form make clear. Configuration, contour, figure, form, outline, profile and shape, refer to distinctive appearances in the construction of details as well as whole objects and images, but now are also used to define concepts and ideas, experiences as determined or established by their boundaries and enclosing lines, conceptual frames and most importantly their underlying structures and grounding of a conceptual proposition. Configuration looks at the organization and flow, while shape establishes the existence of three dimensions. In psychology, the German word "gestalt" for the concept of form was added by the Viennese. Gestalt psychologists, by expanding the concept of form, opened the door to explorations of organic, physical, psychological and symbolic configurations of properties that configure unified wholes, whose qualities and identities cannot be anticipated or derived from their original and separate parts. Gestalt is the phenomena that help reveal realities that are greater than the simple sum of their parts.

A comparison of expert communication languages in art and design reveals that if a semiotic triad is applied to the modernist's discussion of form, then it becomes obvious that artists and designers address primarily the pragmatic and occasionally the syntactic. They operate with a mechanistic, technical system of object and image making principles in which form is put together for visual statements. Rarely is the semantic dimension used. In such mechanistic approaches, there is little understanding of cross cultural value systems or knowledge of the ability for the individual or public to absorb the visually encoded message.

Two Examples:

1
The Japanese Purpose, Idea, Material, Hand

In Japan, the conceptual framework for discussing form/gestalt is at the center of its creative spirit or aesthetic that manifests itself in architecture, visual and performing, as well as in fine and applied arts, literature and poetry. Because of its innate complexity, the outline of what it includes or excludes cannot be clearly defined as it is indeed a living language organism that defies permanent definitions. One can hint that the form/gestalt derives from the observation of its place, climate, history, traditions and ceremonies that have evolved and have formed themselves as an unconscious language aspect of the contemporary psyche of Japanese society. Climate, the topography of the land and its relationship to oceans and its position on the hemisphere begin the outline, but additionally, many sources influence a system of filters to establish cultural values. Only those filters make assessment and critique possible. They prepare the statement of quality and excellence.

The Japanese aim is toward a purpose that is not necessarily in the public's immediate experience, but that in its outcome must be convincing enough to justify an expenditure of time on both

Yuichiro Kojiro's Japanese Form Taxonomy

1.00 Forms of Unity

1.10 Forms of Continuation
1.11 Forms of Continuation
1.12 Forms of Expansion
1.13 Forms of Openness
1.14 Forms of Dilation

1.20 Forms of Union
1.21 Forms of Tying
1.22 Forms of Binding
1.23 Forms of Weaving
1.24 Forms of Joining
1.25 Forms of Bracing
1.25 Forms of Matching
1.26 Forms of Stopping

1.30 Forms of Collection
1.31 Forms of Grouping
1.32 Forms of Gathering
1.33 Forms of Piling
1.34 Forms of Layering
1.35 Forms of Heaping
1.36 Forms of Bundling
1.37 Forms of Tightening
1.38 Forms of Grasping
1.39 Forms of Felting

1.40 Forms of Arrangement
1.41 Forms of Pairing
1.42 Forms of Distribution
1.43 Forms of Complement
1.44 Forms of Surfeit
1.45 Forms of Discard
1.46 Forms of Scattering

1.50 Forms of Enclosure
1.51 Forms of Wrapping
1.52 Forms of Enclosing
1.53 Forms of Enclosure
1.54 Forms of Encirclement
1.55 Forms of Concealment
1.56 Forms which Cover

2.00 Forms of Force

2.10 Forms of Support
2.11 Forms which Support
2.12 Forms which Hook
2.13 Forms of Tension
2.14 Forms which Suspend
2.15 Forms which Hang
2.16 Forms which Spread

2.20 Forms of Curve
2.21 Forms of Circling
2.22 Forms of Curve
2.23 Forms of Curvature
2.24 Forms which Rise

3.00 Forms of Adaptation

3.10 Forms of Fluidity
3.11 Forms which Droop
3.12 Forms which Flow
3.13 Forms which Swirl
3.14 Forms which Rotate
3.15 Forms which Smear

3.20 Forms of Nature
3.21 Forms of Natural Things
3.22 Forms of Inlay
3.23 Forms of Firing
3.24 Forms of Texture
3.25 Forms of Impression

4.00 Forms of Change

4.10 Forms of Reduction
4.11 Forms which are Rolled
4.12 Forms which are Creased
4.13 Forms which are Folded
4.14 Forms of Storing
4.15 Forms of Bending
4.16 Forms of Shortening

4.20 Forms of Twisting
4.21 Forms of Twisting
4.22 Forms of Twining
4.23 Forms of Dappling
4.24 Forms of Crumpling
4.25 Forms of Shaving

4.30 Forms of Severing (Breaking)
4.31 Forms of Tearing
4.32 Forms of Chipping
4.33 Forms of Splitting
4.34 Forms of Cutting
4.35 Forms of Severing
4.36 Forms of Dropping
4.37 Forms of Removing

4.40 Forms of Transfiguration
4.41 Forms of Simplification
4.42 Forms of Difference
4.43 Forms of Disarrangement
4.44 Forms of Dancing
4.45 Forms of Shading
4.46 Forms of Open-Work
4.47 Forms of Splashing

sides, for the maker and audience. For example, in the arrangement of stepping stones of a Japanese tea-garden, there is usually one or several stones placed to break the perfection or predictability of the arrangement. They may be scattered. Being able to scatter may mean an abundance of materials or sameness. As there are no rules for breaking the sense of perfection, the measure becomes a complex web of considerations that the simplified form language does not address. The same is true with the western approach.

Yuichiro Kojiro's use of terminology for a Japanese form taxonomy is quite different from the value laden language used by western formalists. His allows for easy participation of the lay-public without any barrier. However, even in his outline of possibilities he does not address the fundamental need for behavioral or social relationships between his language of forms and what they may mean to the evolution of narrative and metaphor. His research (1963) identifies seventy-seven form types, organized into four major groups.

2
The Western Basics of a Visual Literacy System

The western system has its roots in Europe, in the classics of Greece and Rome, the mastery of the Renaissance, through the schools of Baroque and Rococo to the Bauhaus. What is clear is that this vocabulary is void of content and relating context.

Both Japanese and western form languages are in many ways the same, both are contextless. Even though form can be its own context, contents or message, it is usually used in support of much more complex communication. In the exposition of these two approaches, the complexities that Roland Barthes suggested exist in the visual world, need to be added. His taxonomic view in *The Fashion System* (1967) starts pragmatically with qualities of the physical form of garments, but quickly transcends the pragmatic dimension into the semantic and syntactic dimensions of the fashion language system: the exploration of rhetorical structures, social function and cultural representation, rules and laws, and the complex value systems that deal with aesthetics, status and hierarchy. His approach makes very clear that any object or image is interwoven with the total web of culture, including social behavior and values, forms of expression of a field of great nuances, which in their construction constitute a very vital, living language in which the verbal and visual play supporting roles. Therefore, the two form typologies presented here are too abbreviated to support the depth and wealth of the receiver's receptive experience. In addition, the western form language includes concepts of elegance (refined grace in appearance; tastefulness in form or presentation; restraint in style and expression), harmony (agreement in feeling or quality; lack of confrontation; pleasing arrangement of all elements that make up the object or experience), beauty (a pleasing quality of form, color; excellence in concept and craftsmanship; originality; more than often made up of non-specifiable properties), taste (a personal, social or cultural preference for something aesthetically excellent), or aesthetics (pertaining to the criticism of taste, the sense of the beautiful and the love of beauty). These concepts are too dynamic, politically volatile and have too many social and cultural ramifica-

1.00 Image/Object Elements
1.01 Dot
Line
Plane
1.04 Shape/Form
1.05 Texture
Tone/Color
Scale/Dimension

2.00 Image/Object Organization
Grouping/Clustering
Placement/Position/Location
Positive/Negative

3.00 Image/Object Dynamics
3.01 Balance/ Harmony
3.02 Contrast/Stress
Direction/ Motion/Sequence

4.00 Image/Object Quality
4.01 Realistic or
Naturalistic Representation
4.02 Objective Abstraction
Non-Objective Abstraction

5.00 Tools

6.00 Materials

7.00 Processes/Techniques
Flatness/Roundness
Regularity/Irregularity
Simplicity/Complexity
Stability/Dynamism
Spontaneity/Predictability
Variation/Sameness
Distortion/ Accuracy
Juxtaposition/Confrontation
Monochrome/Colorfulness
Fragmentation/Unity
Exaggeration/Simplicity
Symmetry/Asymmetry
Economy/Abundance
Predictability/Chance
Organic/Mechanical
Sharpness/Blurring

tions. They therefore elude clear definition and only function when connected to contexts.

Jennifer Gunji addresses the part that is missing in the strict outline of the taxonomy for Japanese form. She supports the taxonomy with explorations of the cultural thought process that begin to relate experience of objects and images to the Japanese aesthetic, not only through presentation of theories and philosophical views, but through physical practice that nurtures intuitive responses, "The outward manifestation is only a result of developed inward reflection and understanding of one's own expression." It is this reflection that enables one to give meaning to form through an unfolding, mentally and emotionally, of one's understanding of culture.

Matthew McClain's hypothesis is to develop approaches that counteract the intended visceral response of present day graphic mass communication. He proposes two possibilities for the amelioration of the situation in which media, especially the electronic media, has changed the character of the information that people in technological societies receive. The first is to develop a means of challenging information presented in massive quantities. The second is to further advance the technology to enable people to interact with the information they are receiving.

Limits of Language, Limits of Worlds

Dietmar Winkler

University of Illinois
Champaign-Urbana, IL 61820
Winkler, 231-243
winkler@uiuc.edu

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