

Unfolding the Surface of Information

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Unfolding the Surface of Information

Scott Townsend

Introduction

Electronic interactive information raises many new questions regarding the nature of design. Can the speed and ubiquity of “new” information, broadly construed, be understood through older theories of communication—or is there a threshold that we begin to cross where immediate distribution through electronic networks and user interaction contradicts many older definitions of information design?

There is a crisis in our understanding. The older models and applied theories of maker and audience seem insufficient within this environment, yet, what new theories are provided seem to be placed within a hypothetical future that seems unconnected with the present. To examine the present is extremely difficult. Rather than decrying the differences between historical literacy and the electronic environment, or seeking to stake out new specializations as professional “territory,” it is important that we recognize the existence of a cultural system of meaning and transmission which hybridizes and appropriates literally anything if it can be made to function effectively for a particular motivation or need. The historical understanding of “information” as being static, materialistic in the sense of the creation of the physical artifacts of print, and linear has been superseded. There are at least four major schisms between print and electronic information, primarily of time and velocity, indexing, immateriality and ephemerality, and the simulation of a visual perspective for the user (or point-of-view). These breaks challenge the notion of a historical understanding based totally within print.

Part One

Information Design: Structure, Grammar, Language

The most basic conception of information is that it is broken down and reconstituted into understanding by the receiver of the message. Interpretation of data is the act of creating meaningful information. The distinguishing and divisioning of information into understandable parts is essential in determining use, function, and meaning for the activities of information design and its relationship to an audience. The structures that we create to aid in this divisioning process are related to specific conventions of language. They are outgrowths of grammar and punctuation, as part of the language

and culture that they arise within. For example, the directional bias of left to right and top to bottom that the reader is accustomed to in the conventions of writing in European cultures is further augmented by the typographer using conventions of scale and hierarchy between typographic elements. The designer uses formal *design conventions of visual organization as a kind of grammar or language convention* to organize written information in much the same way that languages possess grammatical rules and definitions of words to aid in using the language. Within print-based systems of information, the conventional thinking in the design of information generally involves encoding within a visual and typographic field a system that promotes a greater “fidelity” of reading or decoding. The general aim of traditional print-based information design is the *fidelity* to the original intent of the message (an important difference redefining function) through information as pattern and sequence.

The conventions of information design and print have worked very well where communities have promoted a specific language and a single grammatical structure from which typographic systems have taken their spatial and organizational cues. However, a globally linked electronic environment changes the nature of the interpretation of a message. By linking communities electronically, the reader comes into contact with the “rules” of another community’s grammar. As Barbara Stafford has noted, there is pervasive cynicism or distrust of the new electronic message in contemporary culture.¹ This may signal the intuitive awareness by global audiences of the re-framed message that is “artificially” placed outside of its original community; essentially, the language conventions, grammar, and formal structure of the information is more visibly part of the content rather than being a transparent means of carrying the message. The speed and interconnection of global networks of communication expand into insular communities at a rate that brings languages into contact leaving little reflectivity for understanding the original message as we are used to thinking of it. The user is hard-pressed to make sense of the message using the traditional concepts of a standardized language and its rules of proper grammar and authoritative usage. He or she must use whatever comprehensive scraps of their total knowledge of the other culture that the message originates from—which is informed through other messages of mass-media and the perceptions that one culture may have of another culture through connotation outside of the message at hand.

Examining older issues presented in designing for bilingual texts is one kind of tangible example. For instance, English (phonetic) and Chinese (ideographic) texts share very little in terms of how they are written and structured. Within the same page, one system of organization contradicts another in the most basic assumptions of reader movement and syntax. There is no “fidelity”

¹ Barbara Stafford, in a lecture given spring semester 1998, School of Design, North Carolina State University, Raleigh, North Carolina.

or direct correspondence between the two texts, rather an approximation of meaning between translations, where the user/reader arbitrates the dual meanings, either “inside” one text and “outside” the other; or if the user/reader is bilingual, somewhere between both, depending on the language and community that they identify with. When one speaks and identifies with a language, using it with exacting precision within its grammatical structure, he or she creates a position within a “center” of a particular culture. The inclusion or exclusion of the user/reader connotes a position of cultural interiority or exteriority: the user is either “inside” or “outside” the language, and hence the community from which the language arises. By working within a framework of a single standard language, traditional print-based information tacitly includes or excludes a multilingual audience, excluding others to a marginal area outside of the text. Positioning and affiliation suggest relationships between cultural identity and information, and how individuals change their use of language in response is a major motivation in the use of language.²

In negotiating these positions, identity is constructed not only on the scale of individuals but, in a larger sense, of conglomerate “identities.” Traditional institutions such as the post-World War II corporation and its patronage of systems-based design parallel the traditional concept of the individual and expand on the epistemologies of private (internal or “center”) and public (external or “margin”). Such institutions create “internal” communication through the standardization of language within their own social structures- and external “identities” which must compete with other such representations in the culture at large. Further, the production of the artifacts of print: the book, the package, and the journal, or other formats are separated conceptually from their distribution. This reinforces a linear idea of communication from the center to the margin for those who actively write (and design) and those who read.

Multiplicity and New Information

Web-based information takes root in global distribution, where the digital code is distributed electronically and ephemerally. Unlike the physical artifacts of print, the digital message exists within a context of immediate production, distribution, and reception. The digital code as information design or, more specifically, as an *interface* is a more temporal and immediate (rather than reflective) event through user interaction, moving image and sound, and the uploading and downloading of data; a participatory event between user and computer with an emphasis on the present. In the distribution of the digital code, the fidelity of reproduction is not ensured and controllable. Through mimesis, the author’s original interface “design solution” is simulated on the receiving computer, where the digital code is highly dynamic in response to different conditions. Form mutates

2 See J. Gumperz, *The Speech Community, Language and Social Context*, Giglioli Pier Paolo, ed. (London: Penguin, 1972).

by necessity through such things as the substitution and reflowing of fonts, color, images deleted to minimize download times, and translations of information created with inaccessible software. The form of design is “built up” within its point of reception. The micro-computer mimics and mutates the original form using the digital code as an armature, as well as through the conscious or unconscious intervention by the user.

Electronic interconnection places users in immediate and intimate contact with no interval. The electronic environment destabilizes traditional concepts of space and cultural “interiority”; the user of the Web is no longer within a single language (if, in fact, they ever were), and, therefore, a single community. The message will change in terms not only of the audience (language, culture, and economics), but also in terms of formal reproduction; i.e., its fidelity, which contradicts or subverts the concept of the information designers’ goal of *fidelity and efficiency* of a message “within” a system of language.

Immediate interactivity plus near-instantaneous distribution and reception favors the immediacy of the user as a point of view (literally from the cinematic concept of P.O.V.) on the information event, rather than the self-absorption and reflection of traditional print and literacy. One successfully accesses or is denied information within the time-frame of the present: the user is in a constant state of floundering or exhilaration through instant communication, or of anxiety through its denial within the interactive space of the World Wide Web. Immediacy has its greatest impact on the user where external and internal linkages create a collective environment of information without the concept of “end” and closure associated with traditional written narratives,³ substituting an indefinite deferral by navigating through the index.

Part Two The Index

Within physical spaces, the random and multiple-sensory awareness of an observer may, for example, move from a cup on a table to a place setting, to a sudden loud exclamation outside the window. These orderings have been characterized as randomized or “non-hierarchical” relationships of information, where physically or temporally contiguous data infers a kind of organizing structure, or metonymic relationship, as contrasted with a metaphoric and symbolic relationship for the object or concept to “stand in”. How we assemble parts and how we understand symbolic concepts are two mutually dependent ideas of metonymy and metaphor.⁴ The organization of the sequence of cup to place setting to loud noise is one kind of information in terms of time and the position that the user has in the space. That these objects and settings might symbol-

3 See Norman M. Klein, “Audience Culture and the Video Screen,” especially p.381 *Illuminating Video*, Doug Hall and Sally Jo Fifer ed. (BAVC: Aperture, 1990).

4 See Roman Jakobson, *Selected Writings I*, (The Hague: Mouton, 1962).

ize a concept such as “family dinnertime” is the more culturally specific and learned idea of symbol, language, and metaphor.

Graphic designers have investigated these ideas through systematic as well as intuitive methodologies for three quarters of a century.⁵ The nonlinear “flow” in printed pieces that explore more montage-based (or simultaneously comparative) organization challenges standardized senses of linear grammar, punctuation, and the informational and syntactical structures that are accepted within “traditional” (dependent on what tradition one chooses to acknowledge, of course) print-based culture. While many claims are made for these more “synthetic” strategies (i.e., synthesis from fragments by the reader), as a strategy of organization, they may be more indicative of one kind of ordering system being given preference over another; in other words, metonymy as a primary way of rendering information through its references as a series of traits (which becomes a personalized index) that the user sets up, rather than the meaning being contained within the sentence and its written structure.

More recent examples within graphic design may suggest a new emphasis between metonymy and electronic interconnection. The World Wide Web tacitly subverts standardized languages and their grammar in favor of contiguous orderings of data throughout the globe. This breaks the traditional containment of information because of the ability to re-index.

Part Three

Open Indexes vs. Closed Indexes: The End of Containment

Our traditional metaphor of information is the library, an architectural archive that protects its interior contents. One moves from the street, which moderates many kinds of routes and positions, to the inside of a complex architectural box. Inside, the library is a vast system of cataloged or indexed information. The library is a contained structure in which language must be brought to life by the act of retrieving and reading. It is not a place of actual writing, or negotiation. It suggests a depository, a bank, a museum, or a series of “buried strata” that must be “dug out.”

Interactive CD-ROM based information shares some similarities to the containment of the traditional library in the sense that it is immediately interconnected as part of its format. The construction of a “metaphor” (or more properly a pervasive analogy) moderates the information and introduces the user as quickly as possible to the particular conventions and rules of the informational structure, suggesting that the specific language and structure are a key to the information, and that the conventions and rules of usage contained within the metaphor are fluid and contextual to a particular subject. The concept of immediacy and interaction is the ability to re-index through metonymy, by shifting positions instantly within the

5 See Francis Butler, “Punctuation, or the Dream of Legibility From Vision to Substance.” This article originally appeared in *Ampersand*, 6:3 (1986): 10-11, and appears in a revised form in *Emigre 40*, “The Info Perplex,” Andrew Blauvelt, ed., 1996.

containing analogy. What is relevant to speed and interconnection is the index and structure as part of the information event, as being *specifically* subjective, or to show multiple positions or viewpoints to information.

Positions of the User: The Concept of “Parallax” as Information

In the winter of 1996, I directed a group of graduate students in the third semester “New Information Environments” studio within the Department of Graphic Design at North Carolina State University in several projects dealing with multimedia and interactivity. One of the major pieces that was completed was an interactive CD-ROM that examined Civil War history using an existing artifact/architectural space called the Cyclorama. Our use of a regional, and what would appear to be a well traveled, or even prosaic, subject was partially determined by the need to explore the impact of electronic documentation such as sound and video, and also in the need to link information to issues of use and identity, since almost equal halves of the graduate students identified with either a “southern” or a “northern” cultural heritage.

In the nineteenth century in the United States, large panoramic paintings were displayed in small towns and cities as a public attraction. They depicted exotic landscapes and famous events from history. *The Battle of Atlanta* is one such historical painting. It is now located in Atlanta, Georgia, where a special theater called the Cyclorama was constructed for it at the turn of the century. The painting is a complete 360-degree panorama of the battle scene. The audience sits in the center in a slowly revolving set of risers as a narrator tells the story of the battle as well as the history of the Cyclorama itself. The painting as a structure of information was particularly interesting to us in that it was both linear and simultaneous: specific incidents were portrayed within the traditional idea of a narrative painting, while the 360-degree perspective placed the viewer within a continuous setting—connecting the so-called ahistorical qualities of virtual reality with the pre-photographic diorama theater, the landscape photograph, and cinema screen.

The interactive *Recyclorama* (as we eventually referred to the project) reconstructs the space as a rhetorical device used to organize information. It combines informational sources which include local and anecdotal narrative, traditional sources of research, personal narratives (at times from the designer), and linkages that acknowledge and use the physical reality of the artifact as an already existing architecture for positioning the user, which then evolves into a larger understanding of the structure of the information as a series of layers and comparisons by linking specific details in the panorama through interactivity. After researching various aspects of information and presentation as a group, we agreed to a structure that linked the individuals’ information—their own “user”

status and point-of-view on the information event that was contained within the Cyclorama. One of our major critiques of "multiple texts" or pluralistic information was that the overall meaning of our subject might become diffused and negated. The concept of information *parallax*, however, is the ability to change viewpoint literally within the informational structure of the CD-ROM, allowing for dialogue between these multiple and competitive texts. The use of parallax (the "suturing" of different perspectives as links that connect through interaction and as movement) is not unlike cinema, where the differences in point-of-view create filmic sequence and syntax. The act of index/interaction becomes part of "reading" for the user. Without the possibility of creating comparison using the concept of parallax, our informational product would have fallen into the pitfalls of pluralism. Instead, the structure (or taxonomy) of the information is part of the general understanding. It is not "metaphor," as we are used to thinking of the "styling" of digital information, and while theater and performance are important concepts, using the structure of parallax is not merely the idea of escaping the pragmatic physical social spaces that information has its biggest impact on.

Unlike the "contained" CD-ROM, the shifting indexes and the global surface of electronic interconnection create new kinds of order that are multiplied. With global speed and interconnection, there can be no contained space, and no totality or closure to the information within the electronic environment. The user as a point-of-view within what has become the "informational event" creates the space, or temporary containment, of information. Within this inverted space, it is essential to begin to enumerate how we may attempt to define a new "reading space:"

1 How do we define the present experiences of the reader/user as a unit of meaning?

There are two issues within this: one is the multiple sensory information that is afforded to the user within the information event: movement/spatial relationship and sound/image/text configurations within a single "moment" which we could think of as a "syntagm" (a kind of arbitrary unit of the present- what I see/experience now, for example, a screen or short video segment). Within cinematic theory, the ordering of sound and image often are part of the concept of montage whether within the same time frame, visual frame, or the montage of image/sound in a sequence.⁶ Within multimedia, montage suggests ordering visual/sound/point-of-view information within groupings and clusters as a supplement or alternative to traditional written narrative.⁷ Secondly, when multiple media and interactivity are linked together, the user is no longer passive within montage-based structure, but creates the linkages between the group or cluster of information events through navigation.

6 See Christian Metz, "Photography and Fetish," *The Critical Image: Essays on Contemporary Photography*, Carol Squiers, ed. (Seattle: Bay Press 1990), 156-157. Also see Sergei Eisenstein, *Film Form: Essays in Film Theory*. (New York: Harcourt, Brace, Jovanovich, 1949), especially 257-260, "A Statement on the Sound-Film by Eisenstein, Pudovkin, and Alexandrov," circa 1928.

7 The concept of parataxis also is relevant from cognitive psychology research. For examples of parataxis in graphic design, see Francis Butler, "New Demotic Typography: The Search for New Indices," *Visible Language* (January 29, 1995): 97-98.

2 How do these events become connected?

Organization within photographic systems of representation are often at odds with the organization of information within the typographic grid. The typographic grid is a conceptual tool for equalizing the visual frame of the page, so that the edge is as important as the center. In contrast, the monitor as a visual frame often is understood within a perspectival system of importance and hierarchy; of a primary central subject and peripheral edge. Perspectival space also implies a relationship between the position of the viewer and the central subject depicted (the point-of-view relationship of cinema and photography). The screen may be more related to the concept of perspective and viewer placement from the precedent of television and cinema. While a computer screen/graphic user interface still appears predominately dependent on traditional hierarchies of typographic spatial placement, of contrast and relative size, the temporal aspect of movement through information is based on a very different understanding of viewer placement, making information as a whole more comparative, clustered and grouped; and giving us the feeling that we move into a "scene" of information (the semantics of the words "Website" are indicative).

The most extreme effects on structure and syntax of a message are the ways that linkages may be created within the "internal" structure of one Web page to another site, or the way information may be progressively tailored by a series of responses by the user. Within a series of "information events," interaction often disrupts the traditional print hierarchies displayed on the computer screen. Hypertext media links displace traditional written syntax and context (headline, subhead, and bodycopy), serving a double function. Upon activation, the link becomes the dominant element in the hierarchy, literally becoming the headline for all related items in a search for another site. The interior of a sentence becomes an internal suture to the next page that will be viewed; often in the middle of the page, rather than moving through the strategies of traditional literacy as an immersion into the primary text through title, introduction, narrative development, and climax. What is physically contiguous within the "electronic page" is subverted by Web browsers, search engines, and hypertext media links which place data in relationships based on various properties of choices and indexing- literally any trait may be indexed and connected. As the technologies of avatars and virtual reality give us a literal point-of-view as part of the information event, this basis of information within the perceptual/temporal scan will be vastly expanded.

Clusters of multiple media-based information are connected through viewer activated interaction. Syntagm (or the unit of the "information event") and suture (or linkage between syntagms through interactive navigation by the user) augments, and sometimes replaces, the print-based concepts of denotative word defini-

tion, grammatical structure and syntax. The new relationships between “syntagm and suture” change traditional concepts of grammatical usage, structure, and syntax.

3 Cultural narratives: taxonomies of knowledge

In contrast to the format of the CD-ROM, Web-based information is “uncontained” within a single format. The reordering of digital information implies not only the manner of interpretation, but also issues of social identity through the interconnection of users. The interconnection of users may represent communities that invent form and convention rather than relying on a “transparent” convention of a single standard language to carry their message. An alphabetical or numerical page progression which are part of traditional design and language conventions and, hence, “transparent” and not considered part of the user/readers message is subverted in favor of traits or experiences that are ordered, searched, and recalled into completely new *taxonomies of user and user-community order*.

The community expresses the rules and concepts of the interpretation of the information, which implies value and meaning. Capitalism, which in the late twentieth century has become extremely politicized through the development of global markets, tends to frame all identity as the variable responses of users within the context of consumption. The use and study of demographics⁸ frames social identity within the guise of the marketplace. Demographics are primarily understood as a social-science technology of the control of behavior. In a less cynical way, communities (rather than markets) already share certain choices and relationships within information. The observation of these patterns of responses (the social “parallax” of information) could be framed within a different way of examining social identity and “interaction,” which could then be a competitive response to the values of capitalism and demographic control.

The rearranging of information through “parallax” into different orders or taxonomies is part of the response that individuals and groups have to information, creating identity and metaphor from structural relationships used to “objectively organize” data. These conceptual arrangements of information find expression in the arrangement of social spaces. This is a historical continuation of space as the expression and control of behavior.⁹ For example, the natural history museum of the sixteenth century implies that the viewer make relationships between multiple objects and exhibits and also negotiate relationships through dialogue with other viewers. In contrast, the museum of the twentieth century isolates and frames displays through didactic panels where dialogue between viewers is minimalized. The arrangement of social spaces also are symbolic: as a further example, museums often suggest pervasive metaphors through arrangements. Many natural history museums

8 Newer demographic models, rather than averaging consumer statistics into highly simplified medians, invent more complex archetypes based on various methods of classifying the heterogeneous audience. See Peter Schwartz, “The Emergent Paradigm: Changing Patterns of Thought and Belief,” (SRI International, 1983).

9 See Michel Foucault, “The Eye of Power” in *Power and Knowledge* Colin Gordon, ed. (New York: Pantheon, 1980) for a discussion of the Panopticon, used in Foucault’s important work *Discipline and Punish, The Birth of the Prison*.

in the twentieth century display specimens and fossils chronologically. While this would seem "objective," it also suggests a progressive idea of evolution (as metaphor, man is at the "pinnacle," or the "top of the ladder," from low to high) which has recently been challenged in the redesign of exhibits in the American Museum of Natural History, reflecting the concepts of a more "horizontal" concept of evolution, in which species are not progressively evolving to abstract perfection, but rather responding to their complex ecological contexts. When taxonomies become meaningful, they often become metaphoric through language construction by the users rather than imposed by standardized usage. Implied metaphors in taxonomies are found throughout our larger scale of social discourse. Their production as language is different than the current conceptual reliance by designers on interactive metaphor, which becomes an imposed convention (however pluralistically it is received) on the audience.

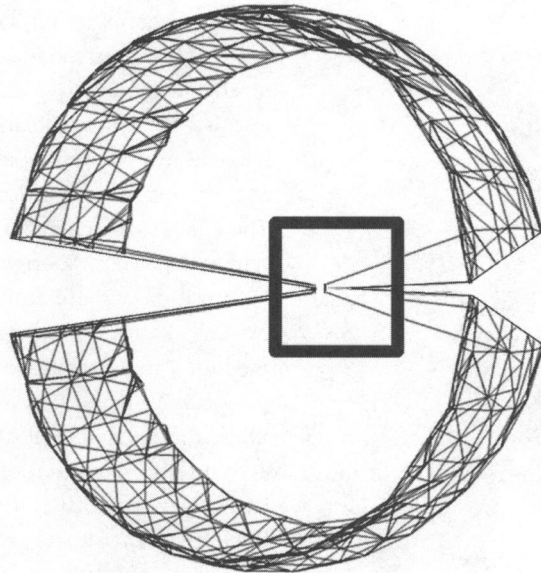
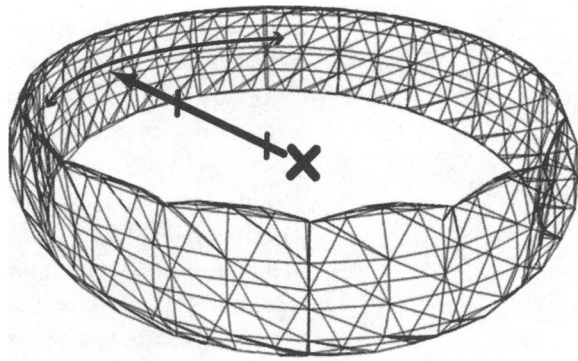
The Politics of the New Information

The electronic environment is discretely placed throughout the world as one surface. As a new metaphor of information, it may be imagined as a geometry of folds, rather than the traditional library as containment or box (in which the traditional library patron is either inside or outside; either within standardized language and knowledge as static resource, or outside in chaos). Navigation by the user is one of the most primary responses to the new electronic environment. As we shift from one "parallax" or point of information to another, we create the "fold line" in this surface, dividing information as a process of reading or comprehending; literally a new sense of punctuation is created through the index.

The surface of information and its "punctuation," however, are by no means homogenous or seamless, and it is this apparent seamlessness where we are the most politically and socially at risk. As we fold and refold this surface, the order of information may not be within our control, even as we see apparent continuity. The unseen and uninterrogateable economic and institutional forces that create the range of choices for symbolizing and linking information are part of the historical evolution of the control of space and architecture as territory and, thus, the control of and access to the individual. This, in some ways, parallels the idea of the geo-political map, in which the electronic "surface of information" may be thought of as territorialities. Boundaries are drawn based on a spectrum of cultural positions, ranging from the discrete form of control possible by limiting the expression or choice of language (defining subjects), to the socio-economic (limiting access), to overt warfare (destruction of software such as in "hacking" or viruses; or the traditional destruction of "hardware," a euphemism for warfare).

Figure 1 a+b

Visualization of the "Recyclorama" interactive project from the "New Information Environments" graduate studio, fall 1996. The Recyclorama is based on the architectural structure of the Cyclorama, a continuous nineteenth century mural painting which commemorates the "Battle of Atlanta." Illustration 1 suggests the physical artifact and its organization of visual information through traditional perspective and spatial movement. Illustration 2 suggests the effect of connecting two positions through interaction, which suggests the metaphor of "folding" physically unconnected data into new orderings of information.



In the electronic surface of information, the structure of information and its various taxonomies are, perhaps, the most socially relevant aspect of global communication—in terms of how the user may become aware and participate with the building of new kinds of cross-cultural languages. To begin to describe this geometry of visibility and scale, we can distinguish between "nodes," "fields," and "folds," and their interrelated processes:

The action of organizing information is an extension of language. The fidelity of the message and its understanding by the user, until recently, was reliant on whether the reader tacitly understood the organizational form as a kind of standardized language convention. Now, the "index" (in its broadest sense) is diverse and relearned, and an essential part of the message and not as a neutral concept of objectively and transparently "carrying" the information.

What we now define as the individual constitutes a “node” or multiple points of view within the surface of information. The “node” is a term that has been used somewhat differently in other writings—perhaps a better way to describe it here is as a “room without scale” in which individuals communicate through the Web/computer; where position is the literal interface between electronic interconnection and the user’s identity through choice. Position, intention, and motivation become primary factors in communication versus informational “fidelity” of encoding and decoding. The information event and narrative may exist within a mode of *clarification and subjectification*; the encoder and decoder seek a mutual understanding or *warfare and objectification*; the encoder may manipulate while the decoder may subvert, appropriate, re-present, or otherwise break the fidelity of the encoder’s message as another kind of information in itself.

However, the individual exists within a dual context of the electronic and physical. When information is distributed and applied within a social context, it is not neutral. These issues become more complex as the linear flow of information from an author/source to a reader becomes a series of interlinked users. There is no external national boundary and a safe domestic interior within the electronic environment. The global surface of information is a territory without national borders as containment—yet territories exist as alliances of connection. Users create relationships based on the index and structure of the Web; a series of user positions on the information event that are aligned to their “community” through the folding action of electronic data. There are at least two areas of activity and examination within information as social structure: language hybridization (which implies issues of cultural identity for the user) and cultural visibility, which is linked to the geopolitical aspects of information as social scale.

Cultural Visibility and Social Scale:

The Taxonomy of Communities

As a method of structuring information by the user, the electronic index redraws social boundaries: it is geo-political. Since electronic information, in the largest sense, is outside of any single standardized language, then efficiency and fidelity of communication changes to motivations for configuring information. If the global information network is constituted out of different communities, then these communities represent groups in alliance or conflict. A new study of the taxonomies of information as structure, metaphor and, finally, as geopolitical map is essential—the non-physical aspect of electronic communities, on one level, hide their infrastructure and often the institutions that shape it. The “lack of closure” that hybridized language creates allows for other kinds of cultural invisibility. The traditional idea of print-based censorship (which is a kind of warfare) often guaranteed a physical absence—the

destruction of a physical artifact (the book or library) or the silence of exile. Speed and velocity in electronic information censor by expanding into other peoples' discourse and language through the volume of production that is possible. The popular concepts of interactivity are framed as a kind of freedom of participation, however, interactivity limits choices through subtle guiding of messages that make other choices for the user impossible. The user may tacitly accept the structure rather than critiquing or altering it. The other aspect of informational structures and invisibility is, of course, those that lack the capital to be visible within this new environment, or that another culture may simulate or represent them through their disembodied electronic image. A community's language may disappear by exclusion or be completely subverted if it cannot survive economically in this global system.

Hybridized Language and the Disembodied Image

The concept of information fidelity also must be rethought in terms of the user's references to photographic and other aspects of connotation. *Fidelity of a message* must be expanded to include *hybridization of a message*. The user's personal memory and history of exposure to other messages can never be expressly understood or anticipated by the designer, especially with the speed of electronic communication. As electronic representation evolves on a comprehensive worldwide basis, the concept of a geographical area with a single cultural identity and history within its physical borders is diminished. A historically based language system becomes something very different outside of the culture in which it originated, and often is recoded into something else. Because of global distribution and speed, the syntagm or unit of meaning exceeds the context of the original language. A very different sense of language is created in which issues of identity become self-projections of the user. Before the growth of the electronic environment, we might assert that language and metaphor functioned only within a single language, or languages that share historical roots, or even that the standard language would change as the different languages of immigrants are brought into the context of the main-stream language. The electronic index that hybridizes language changes this dynamic- we all speak a dialect with no specific center of a mainstream language. We are all within the margin, neither fitting within one standard language or another, but within positions of translation, seeking positions of cultural affiliation.

To combat these dilemmas, information design within this contemporary plight might redefine itself as less concerned with "templates" and controlling usages within distribution, and more concerned with information as a kind of "prosthesis" for the user in which the structure of information is conceived of as the social structure of the global environment—especially in the final aspect of the diversity of taxonomies of identity and knowledge. The true

challenge is in creating a new critical, yet pragmatic, language which will help us in reinventing a sense of social scale and taxonomies of information—to recover the social system of information from individual to social. These final taxonomies of information become our new global map. Efficiency and fidelity of the message in these spaces as only a functional set of questions disregards the most fundamental nature of communication: who is addressing me, what are their motivations, what are my motivations.