

12 FROM CYBERSPACES TO CYBERPLACES

, Narrative, and the Psychology of Place

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* is an HTML and XHTML element used to embed images in a page. Writers can control its size via height and width attributes and can specify alternative text via alt attributes. The original HTML specification did not contain an element; it was proposed by Marc Andreessen in February 1993 on the WWW-Talk mailing list. Andreessen's Mosaic browser is often credited as being the first browser to display embedded images. Web writers adopted the tag quickly, and soon became ubiquitous, fueling the need for image hosting and sharing sites such as Ofoto and Shutterfly. Today, Flickr, one of the most popular of such sites, extends social networking to images: Flickr users share, tag, and apply each other's images either through direct embedding via or through more extended embedded code (where height, width, and alt are predefined by Flickr). By referencing a file outside the Web document—and quite possibly on another site— activates Ted Nelson's theory of transclusion, the usage of external elements by reference, not by inclusion.*

THE WEB CAN BE CONCEPTUALIZED as an aggregation of disparate sites; as Lev Manovich suggests, virtual spaces "are most often not true spaces, but collections of separate objects" (253). However, in this chapter, we propose that the Web is not simply an assemblage of data, but rather that it is a collection of active places that individuals construct in their minds. We argue that without imagery (that is, without the tagging capabilities) the Web would be less able to facilitate rich, recognizable, and communal narratives. Without pictures, icons, photographs, and other graphical representations, it would be conceptualized as more tool-bound than experiential, more of a sterile informational resource than a collection of organic places. Yet to move from Manovich's "collections of separate objects" to our notion of a shared community, two conceptual

leaps must be made. We must first connect hypertext documents in a method sufficient to create a shared space, then imbue this space with an atmosphere of personality—which can be expressed through causal and temporal relations—that shifts that space into a more meaningful and memorable place. Through the powerful `` tag and its associated textual attributes (such as `alt` and `longdesc`), this is possible by means of visual storytelling techniques. In this chapter, we will discuss the notion of place as a psychological construct and explore online imagery from a rhetorical and narratological perspective. We also discuss some techniques from environmental psychology that are useful in understanding imagery as a cognitive device that aids in narrative comprehension.

We first argue that the unique cognitive situation afforded by online imagery enables people to better orient themselves in virtual space and make sense of spatial information thorough the construction of schematic narratives. Next, we posit that the rhetorical power of graphical representations allows individuals to better ascribe shared meaning to their on-line experiences. In this sense, Web sites exist as communal narratives or narrative fragments, potential units waiting to be assembled into available stories about everything from product purchases and customer service to personal anecdotes or emotionally charged and cathartic outpourings of sentiment. We will use literature from psychology and narrative theory to discuss the ways that the `` tag and its attributes were—and still are—integral to shaping the narratologically rich Web of today. Specifically, we will apply concepts and techniques such as legibility, image-ability, wayfinding, and image schemata to our rhetorical analysis of online imagery as an intersubjective and intertextual facilitator of narrative place.

Precursors, History, and Theoretical Basis

Precursors

For many contemporary Web users, it is difficult to imagine the World Wide Web without imagery. Even today's most rudimentary Web sites rely heavily on imagery; commercial sites feature more sophisticated themes and amalgamations of still images and, increasingly, animations and even high-quality video. The everyday Web user is likely to encounter a great variety of visual information—from the simple colored backgrounds and stylized text used in blogs such as WordPress to the complex graphical layering of Google Maps and the robust photographic manipulation and

tagging tools of Flickr. There was a time in the not-so-distant past, however, when pictorial and graphical representations were nowhere to be found.

In his analysis of early networked experiences, Mark Nunes explains how the evolution of textual Internet technologies led us to conceptualize virtual space as a location in which activities take place. In *Cyberspaces of Everyday Life*, he discusses the emergence of telepresence, or the idea of projecting oneself within a virtual medium and replacing real world cues with virtual ones, and its interesting implications for spatiality during his early experiences with MUDs (multiuser dungeons) and MOOS (MUDs, object oriented). In these environments, players would meet to have conversations and engage in virtual interactions, and yet the events "literally take place neither *here* (at the computer screen) nor *there* (at some other location), but rather within the medium itself" (3). Nunes then considers the implications of the graphical user interfaces of Web browsers as particular mode of mapping and navigating virtual space. He notes how the abilities of the first Web browsers allowed us to conceptualize Internet documents as "areas" of exploration linked both to previously visited areas and various permutations of potential "next" areas (3).

Adding imagery enriches the narrative quality of online activities by simplifying two activities: the production and consumption of personalized content. This is particularly true in regard to larger communities of visitors and the narrative history that they provide to a site. Images can facilitate these processes in several ways. First, consider individual image postings, a simple example of which is found in the use of personalized avatars. When posting a link or thread to a discussion forum, visitors can easily configure a unique avatar to represent an element of their personality or identity. Commonly, visitors will choose to select images of movie stars, pets, astrological signs, personal objects, or even favorite automobiles to embed an idiosyncratic element along with their textual contributions to a site. By doing so, they may combine the fantastic with the ordinary, the personal with the impersonal, or, at the very least, the self with the community. We argue that they do so in a way that is more immediate and visceral to audiences than what would traditionally be expressed through a text-only signature. Such avatar images can also be hyperlinked back to personal spaces, thereby claiming and linking a small chunk of virtual real estate as though one were planting a flag on foreign soil or leaving a business card for future negotiations. This avatar then becomes a narrative fragment, a potential protagonist waiting to be used in a variety

of online stories. Or perhaps the avatar image is waiting to play a key role in a larger metanarrative sustained by an online community.

Another way to facilitate shared narrative is through the coordinated use of many images that together build a comprehensible Web site design. Today, even the most barren sites may use images to define discrete sections (such as a special background for the navigation), highlight key objects (such as the use of icons for important links), and add symbolic meanings to sites (such as a specialty font applied to a page title). Most sites comprise numerous images, and the summation of these creates a unified gestalt that infuses sites with narrative power and emotional meaningfulness.

Theoretical Base: Image and Text

From the perspective of narrative, what is interesting about the `` tag and its attributes is the degree to which they can collectively produce hybrid configurations of multimodal stories. These stories are composed of both image and text, with the textual content often being minimized in profile by the image. This has unique consequences for the narrative comprehension of online information because what is not explicitly shown or told to the reader is often just as important as what is. Images alone can reveal causality or temporality through sequencing and arrangement, but additional connections can be instilled using textual attributes. For example, Roland Barthes notes how captions added to press photographs can connote or "quicken" photographic images with "one or more second-order signifieds" ("Photographic" 25) in order to degrade or subvert the original narrative of an image. His example is a photograph of Queen Elizabeth II and Prince Philip leaving a plane, with the caption, "They were near to death, their faces prove it," even though at the time the photograph was taken, neither knew anything of the accident they had just escaped (27). Returning to our previous avatar example, similar subversive techniques might easily degrade the psychological value of a place by annotating certain individuals' avatars with misleading labels (e.g., troll). Or, conversely, they might add truth or legitimacy to personal narratives in a variety of other ways through accompanying comments or ratings. Text can serve to subvert or legitimize the narratives created by online images.

Text and image have always had a somewhat rocky relationship when used in hybrid compositions; this dynamic is well documented by theorist W. J. T. Mitchell in his book *Picture Theory*. Here Mitchell explains that

image and text have long been used together for a variety of narrative purposes in comic books, newspapers, illustrated manuscripts, and artistic works such as those produced by poet-painter William Blake (89). In comparative media studies, it has become fashionable to analyze one medium through the lens of another, to somehow have a glimpse into the socio-historical context of artistic production during a particular time or within a particular community. Mitchell cautions, however, that theoretical attempts to compare image and text (such as using literary conventions to study a painting produced in the same period) can lead to misleading (at best) or even pointless results. He writes:

The most important lesson one learns from composite works like Blake's (or from mixed vernacular arts like comic strips, illustrated newspapers, and illuminated manuscripts) is that *comparison itself is not a necessary procedure in the study of image-text relations*. The necessary subject matter is, rather, the whole ensemble of *relations* between media, and relations can be many other things besides similarity, resemblance, and analogy. (89)

Following this line of reasoning, then, there are various ways of referencing combinations of image and text such as those found in the `` tag and its textual attributes. To distinguish between various image-text relations, Mitchell follows three different conventions when writing of the relationships between text and image. He uses the term *imagetext* to simply describe composite works combining imagery and text. *Image/text* is used to identify the problematic "gap, cleavage, or rupture in representation" (89) that occurs when trying to compare visual and verbal media using a single theoretical framework. Finally, *image-text* describes the active relationship between text and imagery in hybrid compositions. Following this use of the hyphenated term *image-text* to describe the relations that occur between visual and verbal modes of expression, we can similarly use `-text` to describe the active relations made possible through the arrangements, juxtapositions, and active transformations made possible when visual and verbal anchors are used together in hypertext documents. In fact, the `` tag can produce `texts`, `/texts`, and `-texts`.

For example, consider a simple JPEG image of a red rose in bloom. This rose could serve a variety of narrative purposes online. It might serve as a focal point for browsing through potential romantic partners on a dating site, as an overlaid embellishment to provide additional ethos to a particular avatar, or as a hyperlinked sign to a gathering-point discussion board

for soliciting gardening stories contributed by flora enthusiasts. Each of these uses is separate in a narrative sense; one contributes to narrative plot, one to character, and one to place.

When encoded for display on the Web, an image and its associated alt attribute might look something like this: ``. This hypertextual code, when rendered in a browser, can be thought of as an ``text, which would emerge when the reader sees the image of a flower while simultaneously seeing the alt attribute's text displayed as she hovers her mouse over the image. To disrupt this narrative pairing and view the components as `/text`, one needs only to recognize how tenuous the relationship is between the alt attribute's text and the linked file name of the image. It is easy enough to change the text or the image and disrupt the harmony of this relationship altogether, perhaps by replacing a healthy and blossoming rose with a dried and withered rose for poetic effect. Suddenly, love is doomed, character is diminished, and a place to discuss gardening tips becomes a place of mourning for what once was. Furthermore, the two types of media produce two very different cognitive outcomes: when we see typed words describing a beautiful red rose, we generally fill in the details of that rose using our memories or imagination. However, when the rose itself is displayed on screen for us to view, we have no such opportunity for recall or creativity. Instead, we are asked to quickly and immediately focus on a particular signifier for that signified concept, not necessarily the one we would produce on our own. It is therefore unreasonable to try and engage with each type of media using the same expectations and rules for narrative production. The rose as image and rose as text are in alignment, but it is easy to disrupt this alignment in a variety of ways, both cognitive and technological. Similarly, the ``-text relationship can be observed through the fleeting nature of both image and text; move the mouse away from the image and the alt text disappears. Or include additional still images as frames in an animated GIF. Rotation, transformation, replacement, and substitution are all active relations that are within the designer's reach. These techniques can be leveraged for various narrative purposes through the use of other linguistic forms such as irony, metaphor, metonymy, juxtaposition, or parallelism.

The fluid and organic nature of hypertext itself also presents several opportunities for thinking about ``-text relations. For one, we can recognize that text can be transformed into imagery through the use of inline tags such as `<div>` and `` and the use of creative formatting

techniques involving the scaling, coloring, and font-transformation operations available with Cascading Style Sheets (CSS). Although it does not use the `` tag for the transformation of its ``-texts, the CSS Zen Garden is an excellent example of various techniques for translating textual content into imagelike arrangements. Second, and more pertinent to our discussion of the ``-text, we can consider how its attributes can provide an active dimension to the display of images online. The `alt` and `longdesc` attributes provide the ability to annotate imagery with transient captions; as our example illustrates, these texts only appear when a reader moves her cursor over the image, not discriminating between reflective pauses and serendipitous accidents. Similarly, the `id` and `class` attributes can be used to show or hide images conditionally by means of emerging development techniques such as Ajax to toggle the visibility of images according to the behaviors of users (Garrett). At an even more primitive level, the browser itself provides potential activities for `` elements; Internet browsers can be customized; images can be enlarged, reloaded, shrunk, or removed altogether; entire pages can be highlighted, added to show automatically upon the browser's loading, or ignored altogether (added to a blacklist or security filter). Mark Nunes claims that understanding the active relations of computer-mediated communications can move us toward an understanding of cyberspace as a communicative event situated in not only discourse and language, but also performance (12). This is critical in the establishment of narrative place as the reader must play a role in the process of both reading from and writing to online communities.

In the remainder of this chapter, we will explore the discursive performance of images and ``-texts and discuss how they enable a certain type of narrative—the narrative of place—to emerge from collections of hypertext documents. As we have stated previously, we believe that the idiosyncratic properties of images and ``-texts on the Web better enable individuals to develop a common shared conception of place in cyberspace. This collective understanding resembles the shared narrative that individuals develop about physical spaces. In both cases, people collectively contribute to a story that implicitly describes the behaviors, values, meaning, and identity associated with a physical—or virtual—location.

Theoretical Base: Narrative

As difficult as it is for many contemporary users of the Web to imagine the early days of networked computing in which textual network protocols

dominated online activity and images had not yet infiltrated cyberspace, it is equally difficult to imagine complex forms of communication without storytelling. Narrative allows people to express themselves in a variety of forms and for a variety of purposes; it is the structure upon which complex messages can be woven, so that communication can be easily shared and, in turn, understood by others.

Structurally, stories are fairly easy to comprehend, with a basic set of characteristics—plot, character, and environment—that any individual can relate to on the basis of his or her own life experiences. Narratives are then the expressions of these stories using media. In many cases, stories recycle or repurpose basic and familiar plots that are configurable in an infinite array of dramatically pleasing yet comfortably recognizable variations. Although imagery can most obviously influence the environmental component of storytelling through the placement of scenery, visual depictions of characters, or even the atmospheric use of color or shading, it may also influence character and even plot through the selective placement and arrangement of visual elements.

Barthes tells us that “the narratives of the world are numberless” (“Introduction” 46). With the enormous number of potential stories available to be formed from our raw experiences and observations about the world, it is not surprising that storytelling has become such an integral part of human existence. Through well-established narratives that use techniques such as metaphor and other forms of figurative language, story readers are able to develop shared understandings of character, time, motivation, and place through the authored experiences of storytellers.

Theoretically speaking, narrative is immediately useful to a variety of tasks involving imagery. For one thing, narrative is important to the process of *ekphrasis*, or the “verbal representation of visual representation” (Mitchell 152). We are interested in this other direction, however: the communication of narrative through, not by, `` and its attributes. This narrative praxis is sometimes realized through what Barthes describes as the relay function of linguistic messages (“Rhetoric” 41). Here, image and text complement one another, telling a story through the synergistic relation of the visual and verbal modes. Barthes notes that the typographic and visual modes are not commensurate: “It is the image which detains the informational charge and, the image being analogical, the information is then ‘lazier.’ . . . The costly message and the discursive message are made to coincide so that the hurried reader may be spared the boredom of verbal ‘descriptions,’ which are entrusted to the image, that is to say a

less 'laborious' system" ("Rhetoric" 41). Barthes's comment on efficiency is important because it suggests that imagery has a more immediate payoff and faster transportability than verbal descriptions.

In addition to narrative's ability to translate elements of the visual into verbal texts, we can also consider the ontological dimensions of this form. Psychologically speaking, narrative is believed to be an integral part of human development, memory, and cognition. Even from early childhood, humans use the narrative form to encapsulate their experiences and to arrange these experiences in appropriate cognitive structures (often referred to as a scripts or schemas) with means for representing temporal and causal relationships (see Schank; Bruner; Herman). H. Porter Abbott explains the linkage between narrative and childhood development:

Narrative capability shows up in infants some time in their third or fourth year, when they start putting verbs together with nouns. Its appearance coincides, roughly, with the first memories that are retained by adults of their infancy, a conjunction that has led some to propose that memory itself is dependent on the capacity for narrative. In other words, we do not have any mental record of who we are until narrative is present as a kind of armature, giving shape to the record. (2-3)

On a grander historical scale, narrative imagery served as one of our earliest forms of communicative technology, with visual stories and story fragments operating as devices to convey information and observations about the world and its behaviors for preliterate societies. The Chauvet cave paintings, discovered in 2004, depicted over 400 animals including lions, rhinos, bears, and panthers, and, remarkably, were dated to be over 30,000 years old (Faigley et al. 2). Although there is no clearly discernible story found in these paintings, there is certainly an assemblage of raw materials (environments and narrative agents) from which to assemble a multitude of plots and stories of various types (e.g., cautionary tales, celebratory epics, illustrative texts about how and when to hunt certain animals).

The ability of imagery, especially single images, to tell stories seems unusual at first. Mitchell further explains this as a misleading effect of believing that a particular mode of language must also approximate the condition in which it is inscribed in a medium. He writes:

We think, for instance, that the visual arts are inherently spatial, static, corporeal, and shapely; that they bring these things as a gift to language. We suppose, on the other side, that arguments, addresses, ideas, and narratives

are in some sense *proper* to verbal communication, that language must bring these things as a gift to visual communication. But neither of these "gifts" is really the exclusive property of their donors: paintings can tell stories, make arguments, and signify abstract ideas; words can describe or embody static, spatial states of affairs. (160)

In terms of narrative and the online experience, the same capabilities that narrative provides in the physical world—namely, the establishment of an intersubjective cognitive space in which people can relate to the images, experiences, and descriptions provided by others' stories—are also critical in virtual space. Further, we speculate that for online communication, the linkage of imagery and narrative may work together in order to better facilitate a rich shared understanding of places in cyberspace. If we are to accept the prior definition of narrative as an expression of environment, character, and plot, then we must begin to recognize the ways in which these various elements are produced and arranged through online imagery. Furthermore, we must consider the psychological constructs of images in space as they contribute to or mediate the shared values of a community.

Conceptualizing Image and Narrative for the Web

Ruth Wajnryb proposes that one might think of experience as the raw material of story, and story as the raw material of narrative text (8). In this regard, one might form many stories from a core set of experiences, each of which may be expressed through a different medium. For instance, a conversational face-to-face story would be expressed as a narrative text through the medium of air, while a work of fiction might refashion or reformulate experiences for creative effect within the boundaries of printed pages (and, ultimately, of the bound book). Although the same sets of experiences are being used in each instance, the particular representations and effects of these experiences depend on the context of the communicative act as well as on the intent of the author. Thus, Wajnryb's model can be represented as *experience* → *story* → *narrative text*.

In order to extend Wajnryb's model so as to position narrative texts as shared intersubjective spaces, it is useful to once again return to Barthes. Barthes's concept of the image repertoire situates shared identity as a merging of personal and social space as interpreted by an individual. He describes the concept of image-repertoire as follows: "It is the discourse of

others *insofar as I see it* (I put it between quotation marks). Then I turn the scopia on myself: I see my language *insofar as it is seen*: I see it *naked* (without quotation marks): this is the disgraced, pained phase of the image-repertoire" (Barthes, qtd. in Kopelson 59). The image repertoire is therefore both intuitively natural, in our observation of others, and awkwardly introspective, in our analysis of our own discourse through the eyes of others. Through the use of images, though, this awkwardness is reduced; no longer are there so many potential signifiers—as noted previously, the image is ideally suited for lazy readers. In this case, the awkwardness only emerges before the construction of an image, as in the selection of a suitable picture for one's identity (will they understand why I chose Frodo for my avatar?) or a photographic pose. Barthes considers this plight: "No doubt it is metaphorically that I derive my existence from the photographer. But though this dependence is an imaginary one (and from the purest image-repertoire), I experience it with the anguish of an uncertain filiation: an image—my image—will be generated: will I be born from an antipathetic individual or from a 'good sort'?" (*Camera Lucida* 11). As every individual must wrestle with this forced duality, online images can become a safe way to create spaces in which a larger granularity of identity is encouraged by cultural practices within that space. One might say, "It is not necessary to define myself wholly, but only in parts salient to this Web community. At this site, all individuals are automobile aficionados, so which vehicle avatar will I choose?" Or, "Within this Web ring, individuals share photomontages of their families, so which images will I choose to communicate the essence of my family's values?" The construction of a shared image-repertoire can serve as an important first step in priming an online community for a shared sense of narrative place.

We contend that the tag facilitates narrative comprehension through several mechanisms, including an efficiency of interpretation in terms of online content, the creation of a shared image-repertoire, and the capacity for connoted nuance. Imagery online democratizes the process of communication, enabling a diverse array of individuals to communicate quickly and easily and to develop a shared understanding of hypertextual messages. Our suggested model is represented as the reformulation of Wajnryb's model as follows: *experience* → *story* → *images and texts* → *shared image repertoire* → *shared narrative*.

A shared narrative is a vehicle for communal telepresence. Consider an author (or Web developer, in this case) who chooses representative images that she feels are rhetorically appropriate for her Web site. These images

may include representational imagery, or they may be more abstract. They may be numerous or few in number. Even the images that make up the structure of a Web site contribute to viewers' impressions, attitudes, and thoughts about that site. The goal of the developer is to create a site in which her audiences are predisposed to think of that Web space in a common way. This may be a rhetorical goal, as in persuading readers to buy a product or spend money for services, or a psychological goal, as in asking visitors to feel comfortable sharing intimate moments of their lives with like-minded individuals. Imagery can assist with these goals in a variety of ways. For a rhetorical goal, one might use soothing colors, neutral graphics, and a professional or corporate aesthetic that brings to mind prior experiences with successful online transactions. For the psychological goal, something as simple as providing snapshot photographs of community members can do a great deal to convince people to open up and share their own stories.

The critical element to note here is the modulation of perception and cognition as facilitated by the image content. Here, individual experiences are directed to specific focal points (particular images as displayed using the `` tag on the Web) in turn, focusing these experiences on specific aspects of one's own background (and any associated cognitive schema engaged through that introspective process). These focal images can then normalize or focus attention on certain cues presented within the environment, thereby enhancing the sense of a shared story within a community. Perceptions are reinforced through the mechanisms of the narrative text, which in this case is the Web. Furthermore, two critical elements of narrative comprehension can be easily stimulated by the use of imagery: causality and temporality. Both can be observed in the positioning of the present with past experiences in either virtual or physical spaces: a reader sees a friendly face displayed on a customer's review profile, the reader associates friendly faces with prior positive transactions, and this cognition causes the reader to make a new purchase on the basis of the friendly ethos engendered by the site's use of embedded images. This is congruent with research from the field; in her analysis of three different credibility studies, Barbara Warnick (262) writes that despite popular belief, users often evaluate the credibility of Web sites based on factors such as professionalism of design and usability more than on authorial credentials.

It is certain that written texts can have as rich and well-developed narratives as images, video, or other forms of media. Our point is that the characteristics of visual media provide the following benefits of creating

and sustaining a shared narrative of a particular type (e.g., personal narrative, ideological narrative, organizational narrative):

SPEED: This is the "a picture is worth a thousand words" phenomenon. Simply put, visual media are able to communicate complex narrative information more quickly than textual media, particularly because additional words, sentences, paragraphs, or even pages must sometimes be read in order to wholly engage with the causal structure of a plot or the descriptive elements of a character. Less supporting information is necessary to support a visual story. For example, the paragraph describing the physical features of a protagonist could be replaced with an image revealing these features either explicitly through dimension and coloring or implicitly through posture, gesture, or subtle facial expressions. The trade-off here is often one of imagination; while texts allow for more of an imaginative bridge to form between a reader and a work, the bridge between a visual piece and its viewer is arguably somewhat narrower.

Focus: What a visual narrative loses in imaginative potential, it gains in focus. A certain degree of focus is desirable and necessary for shared narratives, and the shared point of reference enabled through forms of image are critical for narrative cohesion. In other words, the inclusion of imagery often helps ensure that the many diverse (and often impatient) Web users key in on similar aspects of the narrative.

SUBTLETY OF DETAIL: Although textual narratives are quite good at communicating subtlety and connoting the layers hidden beneath the text, imagery provides its own mechanism of connotation and conveyance of affect through the use of color, artistic technique, and style. For instance, a Gothic narrative might effectively be conveyed by using a dark color palette and a degree of solemnity rather than through explicit items or objects included or excluded from the canvas. This is particularly useful on the Web, where a site may need to communicate underlying themes implicitly. For example, consider an online banking Web site; they cannot dedicate textual space on every page to assure visitors that they are safe and trustworthy (nor is it likely that modern Web users would take the time to read such a statement if it were included). Instead, effective online banking sites use imagery to signal these nuances about their company's narrative.

Daniel Stokols and Maria Montero relate these properties specifically to the Internet:

Whereas non-Internet forms of communication (e.g., reading a book, watching TV, talking with others on the telephone, or corresponding with them by

surface or air mail) can bring geographically distant people and places psychologically closer to the individual, the Internet differs from these other media in some important respects. . . . Internet-based communications often combine textual, graphic, and auditory modalities (e.g., real-time video images of the people one is communicating with as well as dynamic views of their physical surrounds). Printed media are quite capable of depicting faraway people and places through photographs, drawings, and text, but they do not provide real-time interactive views of distant people and events; nor can they deliver nearly instantaneous, multimodal communications. (663-64)

Following this logic, we argue that images have more immediate information than texts simply because they are able to more rapidly capture and transmit holistic detail. Furthermore, images (and other multimedia) have unique power in the information-complex modern environment. They facilitate the quick conveyance of detailed information, and they help people from diverse backgrounds more easily develop a shared focus and shared narratives.

Next, we should consider the psychosocial effects of imagery on the Web. As stated previously, we believe that imagery both democratizes and focuses the process of online storytelling, enabling more people to tell stories through the medium while at the same time focusing and modulating perceptual cues in order to formulate a shared narrative and a shared rhetorical experience. In cyberspace, common narratives that are attached to Web sites (and their content) allow individuals to develop an intersubjective rhetorical area encircling those virtual spaces. These resemble the shared narratives people build around particular locations in the real world. Thus, we argue that once the conceptualization of virtual space is shared among the community of users, the space takes on many of the characteristics that would be found in physical locations.

From Cyberspace to Cyberplace

The Web can be thought of as a medium where information is conveyed in narrative form. It can also be considered a narrative object in its own capacity or rather as a series of narrative objects—a network of hypermedia sites that have the capacity to take on causal and temporal meaning and become integrated into viewers' schema. However, this description is a bit cumbersome. Thus, following the work of Mark Nunes and Barry

Wellman, we suggest that the Web be considered as a collection of places or be conceptualized as a collection of cyberplaces rather than as a singular cyberspace. In other words, we suggest that shared online narrative can be thought of as a shared sense of place, and likewise the notion of place is itself a particular idiosyncratic narrative form. If we recall memories of places that are special to us in the real world, they often arrive to us in narrative form. We visited these locations at a particular time and within a particular geographical environment, we ourselves or someone close to us played an active role in making the place important, and there was some central concern or "plot" that led us to visit that location in the first place. There may be obstacles or barriers preventing us from visiting that location as often as we might like, even if these barriers are as mundane as lack of time, fiscal resources, or an emotional adversity of some sort. Similarly, the memory is situated in both temporal (at the very least in regards to things that happened before and after our encounter with the place) and causal (the cause and effect relationships that led us to that place) relationships. With physical places, then, we often have all of the prototypical elements of story: time, place, conflict/drama, plot, causality, and temporality.

The benefit of conceptualizing the virtual Web as a series of places is twofold. First, the notion of place is intuitive; it is a metaphor to which most everyone can relate. Second, the concept of place has been extensively researched in a variety of academic disciplines since the 1970s. As a result of those investigations, useful approaches, constructs, and ways of thinking about place have been offered, debated, and reviewed. These dialogs can now be leveraged in hypertext studies; although some traditional concepts may be changed by the translation into new domains, they can still serve as useful conventions and talking points for a new generation of dialog. One area that offers some useful ideas is that of environmental psychology.

The study of place as a psychological construct is extensive. Edward Relph and David V. Canter have each authored comprehensive books entitled, respectively, *Place and Placelessness* and *The Psychology of Place*. More recently, Irwin Altman and Setha M. Low edited *Place Attachment*, which offers a rich discussion on the topic. Michael E. Patterson and Daniel R. Williams's article includes a summary of the academic debates of place and a review of recent research, and Lynne C. Manzo's review article discusses the connection between place and emotionality.

In this line of research, place is traditionally defined as a physical space

that is imbued with meaning (Low and Altman 5). As Yi-Fu Tuan explains, "What begins as undifferentiated space becomes place as we get to know it better and endow it with value" (6). Because of this, place is inherently subjective. A place develops because people assign meanings, define appropriate behaviors, and collectively construct the essence of it. Consider the notion of home. A home may consist of a physical structure, but for many people, *home* is defined by a narrative, consisting of memories, emotions, and ideas, sentimental experiences, comfort, and social identity. For some, home may not even comprise a geographic location, but instead it may be purely narratological (Cheng, Kruger, and Daniels 89), a fleeting idea that can only be conceptualized with the participation of other agents (e.g., family members or friends) or activities (e.g., eating favorite meals). In this example, home is more than a physical location or an assemblage of physical features. The essence of that place, or the larger notion of sense of place, is an emergent property derived from the interplay of perceptual cues, behavioral norms, and social meanings, and "hence, place is not simply an inert container for biophysical attributes; place is constructed—and continuously reconstructed—through social and political processes that assign meaning" (Cheng, Kruger, and Daniels 90).

Two competing paradigms are commonly used to understand place: phenomenology and positivism (compare Patterson and Williams; Cheng, Kruger, and Daniels; Stedman). Phenomenology stems from a philosophical stance that reality is inherently subjective. As Patterson and Williams, quoting Amedeo Giorgi, explain, "this paradigm is concerned with presences (or objects) as they appear in consciousness. That is, objects are not of interest in terms of their 'objective,' 'real,' or 'existential' sense; rather the focus is on the meaning 'of the object precisely as it is given' to an individual" (369). In contrast, the positivist (also called psychometric) tradition considers reality tangible, understandable, and measurable. Positivistic research attempts to be definitive and consequently relies on quantitative methodologies, structured definitions, and scientific hypothesis testing (Patterson and Williams; Stedman; Hidalgo and Hernández).

In regard to sense-of-place research, the phenomenological perspective sees places as socially constructed symbols that hold power over people. This approach eschews efforts to define the specific mechanisms that create the meaning of a place. Instead efforts focus on understanding the place's influence on people's behaviors, attitudes, and ideas (Cheng, Kruger, and Daniels 91–92). Relph explains that the sense of place "is not just a

formal concept awaiting precise definition. . . . Clarification cannot be achieved by imposing precise but arbitrary definitions" (4). From the positivistic perspective, the sense of a place is derived from individuals' cognitive strategies (e.g., mental schema, heuristics), which are influenced by their personalities and social/cultural norms. The cognitive approach is mainly interested in understanding how people categorize places and how individuals develop the cognitive strategies used for classification (Cheng, Kruger, and Daniels 92).

For introductory purposes, this description should serve. However, Paterson and Williams offer a much more detailed survey of the field. Their model examines the conceptual origins, underlying assumptions, and research programs associated with several disparate veins of place research.

In summary, place has been studied from a variety of psychological perspectives. Places are generally considered centers of meaning, which are constructed of physical features and of social and psychological processes. Many years of academic inquiry have shaped our current understanding of place, and we believe that these efforts can now be applied to the study of hypermedia places.

Virtual Places

Although some have argued that place becomes increasingly irrelevant in the modern information-technology-mediated world (Meyrowitz; Giddens), many researchers have embraced the idea of virtual places (Stokols and Montero; Blanchard; Wellman). Proponents of virtual places conclude that individuals who use computer-mediated communication can actually feel a sense of place, which develops from the combination of social attachments and conceptual models of virtual space. For instance, Howard Rheingold argues that after a virtual community has reached a threshold number of shared experiences, "the community takes on a definite and profound sense of place in people's minds" (64). Anita Blanchard echoes this perspective, and she suggests that traditional approaches to understanding (physical) places be applied to virtual places. Furthermore, Stokols and Montero outline an entire research agenda for applying environmental psychology to the Internet. As they explain, "The field of environmental and ecological psychology thus provides a useful background for developing a conceptual analysis and programmatic agenda for future research on the ways in which the Internet and Web are transforming the quality and structure of people-environment transactions" (666).

We can use this additional theory from environmental psychology to augment our proposed model, described previously. The sequence thus takes on a new dimension: *experience* → *story images and texts* → *shared image repertoire* → (*a particular narrative*) *sense of place*. This is a useful conceptualization because now many traditional people-environment concepts may effectively translate from tangible to virtual places. We next consider a few environmental research concepts and examples that are particularly relevant to our discussion. This discussion demonstrates the power of the cyberplace metaphor and its applicability to hypermedia research using particular concepts derived from research in environmental psychology and analyzed from the framework of rhetorical studies.

Imageability, Legibility, Wayfinding, and Image Schemata

Environmental psychology offers some useful applied techniques for thinking about the construction of narrative -texts. First, consider imageability, a construct that describes how individuals experience places. Kevin Lynch originally defined imageability as the quality of a physical place that gives it high probability of evoking a strong image in any given observer (2). He believed that imageability could be defined by historic, personal, and social meanings, as well as five physical elements: paths, nodes, edges, districts, and landmarks. Imageability can be thought of as a zeitgeist for a physical location, or in other words, the collective spirit of a place. In virtual space, we can appropriate the use of this term to describe the ways in which virtual cues trigger these historic, personal, and social meanings. Further, we can use the conceptual elements of paths, nodes, and edges to define the structural characteristics of hypermedia, the hyperlinks and hypertext files that make up the Web.

To define a collective place, then, is to properly situate a site within the appropriate context of districts, which may be linked Web sites. The use of appropriate imagistic landmarks further focuses perception and allows multiple visitors to form common mental images and to use common vocabularies when defining virtual places. These images all contribute to the formation of shared narratives that often mirror experiences in the real world. For example, if people are familiar with Amazon.com, then they can use another e-commerce site more easily because its visual design is likely to resemble Amazon.com, and thus the visual cues are likely to rapidly activate previously stored scripts and schemata for shopping. The emergent narrative in this example, although not always entertaining in

the sense of a novel or a film, is nonetheless critical for cognitively engaging the character (here, Web users) with a sense of purpose, offering cues for appropriate behaviors, and evoking cognitive and emotional reactions. All of this is encapsulated by the sense-of-place perspective. Whether for entertainment, commerce, communication, or simply business, the visual strategies of contemporary Web sites often implicitly or explicitly function in a rhetorical sense to encourage this sense of narrative activation and to share and sustain this narrative with other visitors. In other words, the images online—from individual photographs to blog background designs instituted by a community or organization—each contribute to the development of a distributed, intersubjective narrative, which can be conceptualized as place.

As a second example, consider the rhetorical function of an informational site designed to connect various audiences within an organization. For example, the Web site shown in Figure 12.1 was designed by one of us (S.L.S.) to provide university students, faculty, staff, and administrators with curricular and scheduling information for an academic unit. The imageability of this site suggests an amalgamation of new and old, modern

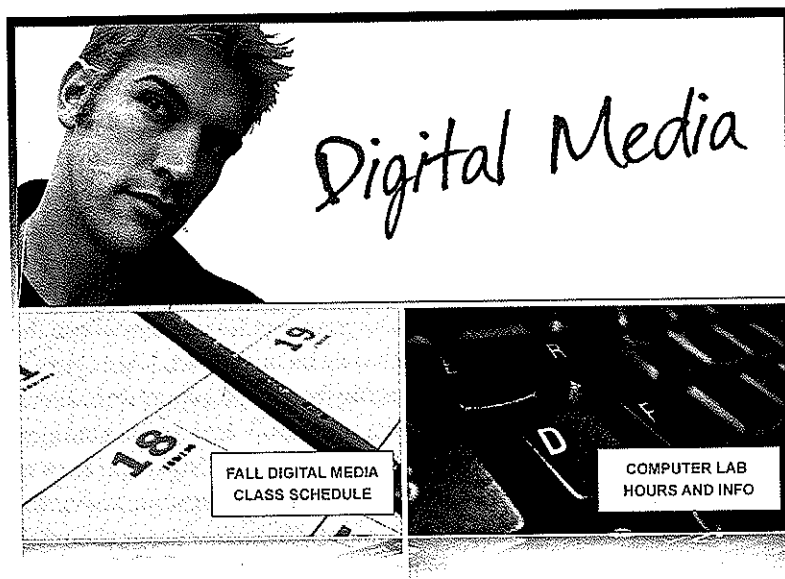


Figure 12.1. Web site designed by author S.L.S. for University of Central Florida Digital Media Program.

and traditional. Three primary districts are defined: an upper boundary that defines an institutional ethos of "emerging media" (complete with a gentleman sporting pink hair in the color version of this screenshot), and two lower districts with images of a more traditional technology (calendar) in the lower left quadrant and a more recent technology (computer keyboard) in the lower right. Collectively, these images combine to suggest a spirit of innovative yet organized activities. One can then consider the shared image repertoire made possible by the imagery on this Web site; this leads to potential narrative fragments of plot (what might it be like to be a student in the program?) or character (what are others' perceptions of the program? What it might be like to work as a faculty member teaching classes for that program?). In this case, the persuasive goals of the site are supported (or perhaps undermined, if one does not identify well with pink hair) by the imageability provided by these districts and nodes provided by the `` tags. This example is also one in which a sense of place is not cocreated by an emergent community, but rather carefully considered in order to serve an existing community, as many Web sites are designed to do.

Along with imageability, Lynch describes the idea of legibility: "the ease with which its [the cityscape's] parts can be recognized and organized into a coherent pattern" (2). Lynch is tauntingly close to applying environmental studies to media studies: "Just as this printed page, if it is legible, can be visually grasped as a related pattern of recognizable symbols, so a legible city would be one whose districts or landmarks or pathways are easily identifiable and are easily grouped into an overall pattern" (3). Successful place building, or at least successful narrative schemata activation, is largely informed by a developer's ability to choose legible images, or images that evoke desirable feelings and emotions across audiences that may be demographically dissimilar. But also, and more importantly, imageability relates to the pattern of images, their summative qualities and contrasting forms. It is this gestalt, or patterned image, that informs the identity of a place, or for our purposes, the shared narrative of a cyberplace (Lynch 83-90).

Part of legibility also involves being able to project oneself into the virtual medium in a way such that landmarks and online imagery become meaningful for a particular task. This is the introspective function of the image repertoire. Another example helps to illustrate this. Consider the common discursive act of writing a collective journal for one's family or friends. For example, if one were to design a family journaling site, it would

make sense to construct a virtual place in which various family members served as focal points through which to voyage chronologically through different stories and events. In Figure 12.2, a personal Web site for one of the authors (R.M.) uses imagery to project a sense of moving through a young child's life in journal form. Although the entries themselves are primarily textual, the omnipresent banner provides focus and consistency to this experience while subtly reinforcing the theme of the site, which is a journey of discovery for a young child as seen from the perspective of his parents. Here speed, focus, and subtlety of detail are all provided through a simple `` banner. Similarly, other visitors within this particular discourse community (parents of young children) can quickly focus on the types of stories that are likely to emerge from this Web place and decide whether or not they would like to contribute to the community. In this case, a sense of place is both designed for others and potentially shifted into new organic forms on the basis of community participation from individuals identifying with this image.

Next, we can consider the idea of wayfinding. Lynch explains, "In the process of way-finding, the strategic link is the environmental image, the generalized mental picture of the exterior physical world that is held by an individual. . . . The need to recognize and pattern our surrounding is so crucial, and has such long roots in the past, that this image has wide practical and emotional importance to the individual" (4). Jerry Weisman also notes the particular importance of architectural differentiation for wayfinding. In most analyses of wayfinding, sensory cues—particularly visual ones—are integral and personally meaningful facets of the process. Just as we use wayfinding to locate visual cues when driving to a new location in physical space, so do we use wayfinding to activate stored schemata and navigate through the complex information-rich nodes of the Web. In electronic space, the trick is to use rhetorical strategies that minimize the complexities of the real-world data—in other words, to suppress the



Figure 12.2. Author R.M.'s family journal.

overpowering feelings of information overload that would inevitably surface if all of the paths, nodes, and edges were to be revealed to a visitor of even a medium-scale Web site.

Returning to our narrative analogy, one might consider wayfinding as a technique for accessing given paths through a complex narrative environment, or for jumping ahead to critical plot points of stories already in progress. Wayfinding can be used for pattern matching in image repertoires when common themes are associated with different images. Again, cultural conventions and prior experiences assist with this. For example, the virtual equivalent of the checkout line in a supermarket is the shopping cart icon; in these instances, one knows that clicking on this icon will propel one into the culminating event of a particular story—the purchase of a material item from a virtual storefront. Although the specific look and feel of these checkout mechanisms will differ across sites, the narrative sense of place is still the same: a virtual environment is created in which to complete the transaction and to feel secure providing credit card information and other personal details to a machine rather than to another human being.

Narrative devices can also provide the context for a story, which relates to the notion of the patterned image. The patterned image suggests certain organizational narratives, which in turn convey ideological or institutional themes. In some cases, connective stories can be told from the simple choosing of an artistic style or genre that evokes nostalgia or pleasant feelings about one's experiences with another medium. For example, Figure 12.3, which depicts a banner image designed by Zach Whalen for a themed conference, *World Building: Space and Community*, depicts a game-stylized aesthetic that was used to communicate the conference's theme of space and community in online environments. The image is present in the Web medium, but it calls forth memories of video gaming media. In this case, wayfinding functions as a conceptual rather than a spatial bridge. In other words, the image connects visitors not with other locations



Figure 12.3. Web site designed for the *World Building: Space and Community* conference.

on the Web, but with prior experiences playing video games such as *The Sims* or *Sim City*, in which this type of visual aesthetic might be encountered. In doing so, the primary conference theme is reinforced and the institutional narrative of fruitfully combining virtual and physical space for scholarly considerations is subtly passed along to potential participants and visitors of the site.

A final concept useful to place making, and one related to wayfinding, is that of image schemata. Image schemata are metaphors people use to comprehend experiences while moving through and interacting with an environment (Johnson 28–30). In other words, they are the “recurring, imaginative patterns” (Frank and Raubal 69) through which people interpret the physical world. “An image schema can, therefore, be seen as a very generic, maybe universal, and abstract structure that helps people to establish a connection between different experiences that have this same recurring structure in common” (Raubal et al. 5). Mark Johnson, a pioneer of image schemata theory, suggests several prototype schemata. For instance, CONTAINERS, consist of an inside, an outside, and a boundary; things can enter a container (go *in* a building), leave a container (get *out* of a car), or cross a container’s boundary (pass *through* a doorway).

Johnson’s work helped formalize these commonsense patterns that people implicitly use to understand space, and several scholars have since suggested that image schemata might be used for interface design. For instance, “Image schemata are considered good candidates as a foundation for the formal definition of spatial relations. [Werner] Kuhn [a professor of geoinformatics and a prolific author] has pointed out the importance of image schemata as a tool to build ‘natural’ (i.e., cognitively sound) user interfaces” (Frank and Raubal 3). We suggest that image schemata may also be a useful tool for thinking about the relations that exist in virtual place-making narratives.

For example, a popular activity today is to participate with social networking sites such as Flickr, a photo-sharing Web site that is particularly relevant to our discussion of images. Flickr allows individuals to post images and their textual descriptions, review others’ photos, form communities of friends and acquaintances, and interact with those discourse communities. Consider this scenario: A person logs *in* to her Flickr site, then clicks *on* a friend’s personal photo, which *links to* her friend’s page. The use of *in* evokes the CONTAINER schema and implies that the virtual place possesses a conceptual inside, outside, and boundary. “On” suggests a special type of object, called a GATEWAY schema. “Links” reflects the LINK

schema that, not surprisingly, connects objects in time or space (here connecting one page to another). Finally, "to" suggests the use of the PATH schema, an especially important wayfinding device that is defined by a starting point, end point, and connection between the two.

This is a simple application of image schemata theory to cyberspace, and even without images, the Internet would evoke such metaphors. However, with the benefit of the and the composite designs it builds, more complex abstractions emerge. For instance, once our Flickr user reaches her friend's page, she can click *on* a collaged icon that represents a *set of photos*. Once the link is pressed, our user *moves deeper in* to the photo set where she can see a *collection* of associated image *objects*. She can then click *on* a single photo and drill *down to* its stand-alone page. This small description already implies many sophisticated schemata, including COLLECTION, CENTER-PERIPHERY, NEAR-FAR, and SPLITTING. Overall, the site's basic visual design (i.e., its image pattern) suggests a sense of space, evokes specific spatial metaphors, and facilitates the formation of a strong cognitive representation of Flickr as a tangible space.

The personal narratives interwoven with the user-posted photos construct the meaning, social context, and emergent sense of place within Flickr, or the image-repertoire of the community. Thus, at a macro level, Flickr is a space that can be described by the metaphors of image schemata, similar to a large city. At a micro level, Flickr comprises places constructed by individuals and communities who post, view, discuss, and otherwise interact with each others' personal narratives. Like a well-known neighborhood near one's home, this localized Flickr is defined both by the metaphors of image schemata as well as by personal narratives imbued within that space. As such, a shared sense of space and then of place is fostered by the -texts.

Conclusion

As this discussion has demonstrated, many psychological concepts associated with the study of place can be beneficially applied to media studies. We hope that hypermedia scholars will see the similarities and synergies between traditional environmental psychology research and today's studies of hypermedia. We believe that the traditional study of place may be effectively translated, and that the conceptualization of cyberplace is a strong foundation on which to construct and communicate relational theories of hypermedia. Furthermore, the concepts of imageability, legibility,

wayfinding, and image schemata are useful tools for the construction of shared -text Web sites with the potential for rich narrative histories and stories supported by various communities of individuals.

Images make it easier for individuals to ascribe meaning to the Web, not just to fragmented nodes of text and dissociated data, but to virtual locations, Web sites, and the individuals and communities of people who frequent them. The narratives that individuals construct about the Web can be conceptualized through the study of place, which understands physical locations on the basis of the narratives (and the psychological outcomes caused by the narratives) that individuals create for physical spaces. Images online are equivalent to physical/spatial cues in real-life settings. By conceptualizing the Internet as a place and virtual locations "on" the Internet as places, it becomes easier to understand the cues important for the narrative construction of virtual experience. This viewpoint suggests exciting new areas of research for hypermedia studies.

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