Metaphors Reflecting and Shaping the Reality of the Internet: Tool, Place, Way of Being

Annette N. Markham
University of Illinois at Chicago
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Introduction

> *I shall thus be trying to convince you of what may be a disturbing premise: that merely by opening our mouths and speaking English we can be drawn into a very real and serious frame conflict.*
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> --Michael J. Reddy, 1979

As our metaphorical conceptualizations of the term "Internet" become more concrete, walls of meaning are constructed around us, reifying a "box" that we will be asking ourselves to think outside of in the future. As scholars working along the cutting edges of Information and Communication Technologies, we are partially responsible for shaping what the Internet (substitute your own preferred word here) means in real terms to real people.

It behooves us at this juncture of Internet Studies to step back and consider the manner in which scholars, policy makers, and designers are, through their linguistic practices, building knowledge about new communication technologies. By doing so, we can begin to interrogate both the possibilities and limitations imposed on invention and practice within these meaning structures.

This paper offers the first step of this reflection by explicating three distinctive and interrelated metaphor categories that shape our conceptualizations of Internet related technologies. These three metaphors; Internet as Tool, Internet as Place, and Internet as Way of Being, though not mutually exclusive, both invoke and foster divergent ways of making sense of computer-mediated communication (Markham, 1998). As a continuum of sensemaking, this framework appears not only in user discourse but also in pop culture depictions of new communication technologies, advertising, news media, scholarly works, and software and web designer discourse.

Understanding that these three categories of meaning frame our understanding of how Internet technologies can and should be used allows us to re-examine several issues raised by questions such as these: Are policies regarding access viewed by users in the same way they are viewed by policy makers? Do all the targeted users reference the same meanings when they see the term "Internet"? What paths of action and response are encouraged through the use of particular discursive frames? What paths are cut off or discouraged?

Our discursive choices in talking about Internet and Communication technologies have actual and meaningful consequences on the shape and perception of these technologies.[1] More importantly, as our discursive frames become more embedded in everyday language, alternatives are shut out, cut off, and left behind. It

is vital, at this stage of the development of Internet based technologies, to consider what capacities and possibilities are being highlighted through our metaphoric constructions as well as what is disappearing. In this article, I focus specifically on these metaphoric constructions to investigate the ways in which our basic understanding of Information and Communication Technologies are being shaped and delimited.

Social construction can be thought of as a process whereby individuals, dyads, and groups use metaphors, which over time build frames through which we see and understand the world. If we do not understand what the Internet means, we connect this unfamiliar term with something familiar. Internet as a tool, portal, frontier, cyberspace, superhighway; at first, these conceptualizations help us make sense of something quite unfamiliar. Over time, these metaphoric frames shape and delimit our perceptions of and responses to these technologies. Ultimately, the understood reality of the Internet is taken for granted within these frames. As others encounter these new technologies, they do not derive the frame from scratch; they use terminology already developed, which pre-determines the familiar concept to which the unfamiliar experience is compared. Further, if other emergent technologies (mobile telephone text messaging, for example) are associated closely with or put under the general umbrella category of the Internet, these other technologies will be absorbed into the metaphoric framework already in place.

Let me offer a brief introductory example of how this might work: When Al Gore spoke of the Information Superhighway (1991) he did not invent the notion that the Internet was a conduit along which information sped from one destination to the next, but his use of the phrase created a metaphoric image that resonated with various audiences. The image of a highway is easy to visualize and relate to; much easier than an abstract term such as "Cyberspace." If we have driven on freeways, we understand very well the concepts of passing, speeding, staying within one's own lane, exiting, and merging. We can see—especially if we live in a city—cloverleaf patterns, overpasses, and interwoven networks of highways converging and emerging. If we drive on highways through the countryside, we know what it means to get stuck behind a tractor and can easily visualize what is required to pass slow moving vehicles on the road. We understand the concept of four-way stops, looking for oncoming traffic before passing, and how to look for cops hidden behind billboards or hillocks.[2]

The Information superhighway has high resonance as a metaphor. It invokes a larger system of meanings that may remain unspoken but operate nonetheless at the cognitive levels to help one learn how the unfamiliar term works and what the unfamiliar term encompasses. The concept of "Internet" is absorbed into the Information Superhighway framework; substitutions are made and images are overlaid to accommodate the presence of information versus people or automobiles, glowing pipes versus concrete highways, and so forth. Over time, the characteristics of highways are less a matter of choice and more a matter of obvious structure in making sense of what "Internet" means and how one should interact with it.[3] Additionally, even if later technologies don't seem to fit into this rubric, superhighway retains its position as a key means of making sense of new communication technologies because any new communication technology can be seen as a new addition to the network of highways.

Metaphors are thus a vital process in the construction and negotiation of social structures. New experiences in an equivocal situation generate the sensemaking processes of naming and defining. These definitions, which typically take the form of metaphor, shape how we interact with and respond to this situation. This in turn shapes how this situation is structured and policed after it is incorporated into our everyday thinking. Thus organizations and cultures evolve; thus, we come to understand the Internet and transform it from something abstract and new into something real and familiar.

How do people make sense of Information and Communication Technologies? What impact do various conceptualizations have on future interactions with and responses to communication technologies?

Extensive analysis over an eight year period of users' discourse and prominent written artifacts in the public and academic spheres yields a progressive continuum of metaphoric frames within which users, policy makers, and scholars define and make sense of computer-mediated communication: Tool, Place, and Way of Being. This framework comprises a useful heuristic for understanding how people currently make sense of new communication technologies as well as imagining possibilities for different configurations of meaning.

CMC as Tool

We understand most communication technologies as tools, extensions of our senses or bodies that allow us to magnify or amplify certain capacities.[4] Likewise, "tool" provides a common frame for understanding the Internet. Within this general framework, the Internet can extend one's reach, expand the senses, and collapse distance by decreasing the time it takes to get from point A to point B, informationally speaking. Whether we're shopping online, downloading data from a resource on the other side of the globe, surfing the latest film reviews, or chatting simultaneously with friends in three different countries, Internet technologies provide vital tools with which we alter the fundamental processes of getting things done.

Tools come in multiple shapes and with varying purposes; hammers, pencils, wheels, hair brushes, washing machines, coffee cups, and so forth. Yet, when one examines closely the predominant discourses surrounding the Internet, certain types of tools can be seen more often or more prominently than others: Internet as Conduit, as Extension or Prosthesis for the senses or limbs, and as Container. Each of these metaphors highlights certain features and capacities of the Internet while minimizing other potential uses. Let me provide more detail about these three types of tools.

Prosthesis

To conceptualize the Internet as an extension or prosthesis is to focus on the reach-extending capacity of the Internet.[5] Undeniably, the Internet allows individuals to extend their limbs and senses great distances to connect with other people or databases. For the process of information seeking, this extension of our senses and limbs gives one access to information which would otherwise be out of practical or

physical range of motion. Stretching one's arm across the Atlantic Ocean, one can reach into a database at the London School of Economics and bring the data back to one's desktop. For the purposes of connecting with other people, this extension gives one the capacity to interact with others; text or video becomes the representation or simulation for the person who is not physically present. I can clone myself to be in three places at once, or I can "bring" three of my colleagues from their various locations to my office. Not unlike other media, the Internet can alter, experientially speaking, traditional sensations of time and space, bringing the world closer to the individual or spreading the individual out to various other places.

Conduit

Conduits are means of transport from one place to another place. Whether we call the Internet a conduit directly is less important than the fact that our linguistic frame expresses those characteristics that are perceived as central to the technology. Pipes, straws, or electricity; the form is not as important as the emphasis. Conduit, as a metaphor, focuses on the Internet as a medium for transmission of information from one location to another. Of course, one might note after reading this last sentence that this is exactly what the Internet is, literally. The Internet is a medium that transmits information virtually instantaneously between computers, individuals, and groups of people. Because of this feature of new communication technologies, transmission has become a defining characteristic of the Internet.

Predominant visualizations of these conduits show us criss-crossing lines connecting nodes on some sort of grid, typically a map of a town, country, or the globe. One could look at this visualization as a web or net, but in recent years, the referents for these two terms have shifted away from those of the spider or fishing variety. Instead, the terms web and net reference the concept of an interconnected network of conduits, each of which carries stuff from one node to another.

Another conceptualization of the Internet as Conduit takes the shape of the United States highway system or more commonly, the Information Superhighway. Introduced into the public sphere by then U.S. Senator Al Gore (1991), this metaphor became an easily assimilated visual representation of the network of connections between computers known as the Internet.[6] In 1997, the U.S. Department of Education put out a booklet entitled Parents Guide to the Internet, in which the Internet is made synonymous to the Superhighway. A very basic introductory guide to an unfamiliar technology, this booklet includes sections regarding "getting on the information superhighway," "starting your engine," "navigating the journey," "having a safe trip," and "sites along the way" (U.S. Dept of Education, 1997).

This Department of Education example indicates the utility of familiar jargon to make sense of unfamiliar technology. At the same time, these are not merely words that represent or mirror reality. The metaphor set can function in a predictive fashion (Schon, 1979), sponsoring a particular set of future discourses about the Internet (Gozzi, 1994). In other words, parents encountering the term "Internet" for the first time will learn the reality of it within the frame they are given. Perhaps they will shift their comprehension later. Regardless, the impact of

the term "Information Superhighway" will linger as a primary framework and influence how alternate conceptualizations are made sense of (Goffman, 1974).

Container

The Internet can also be envisioned as a container which holds or stores quantities of stuff. Here, I use stuff deliberately; this generic term encompasses the more specific terms which will be used by individuals in context. Stuff therefore need not necessarily be limited to data and information. As in other arenas, container metaphors tend to highlight the shape of the container, the way the container is best utilized, entry/access and exit points, or the stuff being contained (e.g., See Smith and Turner (1995) for an extensive discussion of container metaphors in organizational communication). Primary in this conceptualization is the notion of the internet as a thing with objective properties, versus a process.

My point is that even as the terms prosthesis, conduit, and container describe actual features of the Internet, they foster perceptions that limit what becomes the nature and reality of the Internet. This claim merits exploration by looking at what is present and absent within any particular metaphor frame. In all three examples, transmission of information is highlighted as a key feature of technology, whether the goal is speed, fidelity, or efficiency. As one emphasizes the channel, the medium, the size of the pipe (bandwidth), transmission, the lines between the nodes or the network of lines on the map, other meaningful aspects of the technology become deemphasized or hidden. This can have serious consequences as a metaphor shifts from conscious word choice into a taken-for-granted method of making sense of the world.

A focus on transmission beguiles users by encouraging a belief that transmission of information equates to communication. When we stop to consider how we come to share meaning in culture, understand one another in relationships, or learn in cultural contexts, we recognize that the process of understanding is not accomplished through the simple act of transmitting information back and forth. However, communication is conflated with information transfer with regularity. In the United States, we tend to still look to and rely on Shannon and Weaver's classic SMCR model of communication as an explanation of the communication process (Sender encodes a Message and transmits this message through a Channel to the Receiver, who will either understand the message or not (because of something called Noise) and be prompted to send Feedback back to the sender to inform the sender about the fidelity of the message received). This model is useful for explaining telephone transmissions (for which the model was developed), but because it does not take into consideration contextual factors or meaning, it is limited. However, this model still dominates our thinking about computer-mediated communication.

Examining the discourse of distance education, for example, one will note the prevalence of phrases such as "knowledge delivery," "knowledge production," and "education templates." Below the surface of discourse, at the root metaphor level, these phrases are based on a metaphor of Communication as Transmission of Information. This metaphor is facilitated by another metaphoric system of meaning, one that focuses on the Internet's capacity to transmit information with

the accompanying premise that access to this information leads (naturally?) to knowledge. The logic relies on the belief that information is the same thing as knowledge and that they're both deliverable. Through this logic, one can equate the Internet Age to the Knowledge Age, which vastly oversimplifies the process through which a person obtains knowledge. By absenting context, individuals, and meaning from the conceptual framework, one derives a framework for Internet technologies which unproblematically transfer knowledge from one person or place to another. As long as there is access, there will be knowledge.

At a deep structure level, then, knowledge, the end goal of education, becomes nothing more or less than information that can be packaged and delivered as a commodity to the recipient. At the National Communication Association's summer conference in 1999, one university promoted the idea of courses as "infinitely scalable." Disturbing, but common, university administrators frequently utilize the jargon of assembling courses with the use of templates. Of course, while educators, designers, and administrators "know" better, legislators don't necessarily spend that much time thinking about it or conceptualizing it. The risk is that this metaphoric turn of phrase then becomes more than mere words. If one teacher can deliver education via the Internet to 1,200 students simultaneously, why do we need so many teachers?

This example is just one of many that illustrate the way that metaphor can shape our conceptions of the Internet in ways that have significant consequences for perceptions and actions associated with Internet technologies. Most people define the Internet as a tool, which is a useful metaphor for understanding how it works. At the same time, it is important to investigate what is both enabled and constrained by this frame. In many cases, the price tag for this metaphor is the loss of conceptualizing 'knowledge' as a significantly more complex process than simply bundling, sending and receiving a package.

CMC as Place

The Internet is not only a conduit that facilitates the swift and planet-wide flow of information, it also comprises socio-cultural places in which meaningful human interactions occur.[7] Many users, designers, and scholars conceptualize the Internet through this metaphoric framework, which invokes a different set of comparisons and develops a different system of meaning than those developed via the tool metaphors.

One can see traces of space/place metaphors accompanying almost every technological innovation in the 20th Century. This, Marshall McLuhan would tell us, illustrates the notion that every new communication technology is an extension of the human (1964). As extensions of our bodies or senses, these new technologies are made sense of in relation to our bodies and senses as these exist spatially and temporally.

Even though the English language of media like radio, television or telephone is infused with spatial metaphors, most of these metaphors no longer actively reflect or influence the way users make sense of these technologies. We speak of being on the telephone but we do not mean this literally. Likewise, most people do not have

a sense of architecture or presence in a place when they speak of being online or surfing the Internet. The use of spatial metaphors in these cases indicates more of a familiarity with jargon than a perception of the Internet as a place. Arguably, this is even more the case in the late '90s when the commercial purpose of the Internet overwhelmed the communal, when shopping became more typical than building online social communities. Nonetheless, place is a key metaphorical framework for understanding computer mediated communication.

Users began publishing accounts of experiences in various online communities (Rheingold's book Homesteading on the Electronic Frontier is an excellent example of this). Concurrently, scholars began to explore in earnest how individual identities, collectives, and cultures could be created and maintained through the exchange of computer-mediated communication (Early writers in this arena include Baym, 1995; Benedikt, 1991; Bromberg, 1996; Jones, 1995; Ludlow, 1995; Reid, 1995; Rheingold, 1993; Shields, 1996; Turkle, 1995). Cyberspace became the primary metaphor for the Internet, conceptualized as a place where meaningful human activities occur.

There, in a described, imagined, or perceived *place*, one can spend time wandering, navigating, and otherwise exploring. One can converse, come to know and love, insult, and otherwise interact with others one meets there. Although computer-mediated social spaces have no literal physical substance, they can be perceived as having dimension, comprising meaningful, structured places where things happen that have genuine consequences. In this frame, the Internet is not so much a prosthetic for the senses but a separate environment where the self can interact, move, travel and exist. Conceptualized as a space, the Internet develops architectures, boundaries, and multiple entry and exit points. Conceptualized as a place, the Internet comprises a socio-cultural milieu.

Just as the context is defined in multiple ways, boundaries of the culture are sketched not just by the preconfigured design or programmed parameters of interaction but by the interactions of participants. Borders are thus negotiated processes (Hine 2000) rather than well-defined, static, or geographic. An individual's engagement with others in these contexts influences directly the structure and border of culture quite significantly.

The euphoria of the early '90s, which tended to discuss these cyberspaces as allowing humanity to transcend the body to exist in worlds of minds, has shifted to steadier sensibilities; users, scholars, and policy makers acknowledged that computer-mediated environments are both like and unlike physical cultures. New communication technologies certainly transform user's experiences in that anonymity from one's physical embodiment is possible and traditional configurations of time and space are shifted. Even so, the foundations of these reconfigured spaces of interaction among anonymous personae still draw on or transcend traditional ways of being with others, reify traditional or create new stereotypes, democratize or marginalize. These spaces, like the humans constituting and occupying them, are like any social space we see and study in physical environs.

Internet technologies highlight certain aspects of experience, which complicates our taken-for-granted epistemological sensibilities about how we understand the world and how we come to know reality. Certainly, having a sense of presence in a textual environment is not new; this happens when we are

captivated by a novel that allows our imagination to visualize physical locations. At the same time, users report feeling more at home in their wired versus physical neighborhoods, falling in love with people they know only via text messages, and experiencing as much reality online as they do offline. That reality is negotiated through interaction and socially constructed is the theoretical basis of symbolic Interactionism, social constructivism and interpretivism. The Internet provides the means for scholars to see this construction in action. More importantly, perhaps, the capacities fostered by Internet based technologies compel scholars to acknowledge our tendencies to oversimplify everyday life in the physical world.

Place-oriented metaphors such as frontier, community, cyberspace, as well as discourse which are focused on movement within specified spaces, highlight certain features of the Internet. In many ways, one cannot perceive of the Internet as a place unless one perceives a shape, acknowledges boundaries, or feels a sense of presence there. To develop these perceptions, most users must also have significant or meaningful relationships with other people. Place, as a meaningful concept distinct from space, is defined not by physicality but by the communal aspect of the contexts (Oldenburg, year; Soja, 1989). In many ways, then, to perceive the Internet as a place does not only require a sense of architecture, but also requires a sense of presence with others. The Other, or Self's relation to other, thus becomes a focal point for this metaphorical framework.

The focus on interaction is obvious in such place oriented interfaces as MUDs or MOOs. These settings have been covered extensively in other writings (e.g., Kendall, 2000; Markham, 1998). However, even in more mundane interfaces such as email a sense of presence in a place can be a focal point through the use of the technology. An attorney, in a recent interview by the author, described her use of email to communicate with employees of a company within which she was a management consultant.   At a basic level, email was a tool which allowed her to work virtually across the country with this company. At the same time, the technology was not simply a tool; it was a place within which she was striving to achieve a sense of presence. The clients with whom she was in contact would remain psychologically distant from her unless she could establish their texts as a mutual location for interaction, informal communication, and a building sense of trust and common ground.

One can begin to see, by exploring the implications of tool metaphors and spatial metaphors of "the Internet," how differently people may define the same umbrella term. This is not a minor point. As Smith and Eisenberg (1987) found in an ethnographic study of the corporate culture of Disneyland, the employees and management conceptualized the reality of the company in distinctive and competing ways. The researchers contend that conflict at the root metaphor level led to significant conflict among workers and management. Indeed, when we begin to interrogate how discursive patterns are defining technology, we not only begin to see vast gulfs between various frames of reference, we also begin to recognize power interests in the shape of the predominant discourse, the potential conflict between competing interests, and a jarring chaos of misunderstanding just under the apparently smooth veneer of shared meaning.

CMC as a Way of Being

The notion that Internet technologies facilitate or constitute social spaces and a multiplicity of cultural formations is clear, at least within those cultures where Internet use is fairly widespread. As well, it is commonly held within the humanities and social sciences that Internet based communication can influentially mediate or moderate human experiences.

Varied scholars contend that the connections facilitated by Information and Communication Technologies do not constitute mere transfers of information, nor do they simply create a dense global network of interconnectedness. More crucially, new media for communication are shifting our western mindset in fundamental ways (e.g., Gergen, 1991; Gleick, 1999; Postman, 1993). These changes in mindset foster the third framework of "way of being" as a way of making sense of these technologies. In this conceptual metaphor set, the self's relation to Internet technologies is much closer and one can begin to see a collapse of the distinctions that separate technology, everyday life, self, and others.

The connection between humans and their technologies has been a topic for centuries. Although the discussion does not begin here, the Industrial Revolution marks a significant time when humans in Western industrializing nations were fascinated by the ideas of mechanization. Mechanical inventions allowed people to view life and its processes in drastically different ways than ever before. During this time, artists as well as scientists mechanized and measured biological processes in pieces, components, time-stepped movements, and so forth.

During the computer revolution of the twentieth century, we began to use human processes to understand machines (comparing the computer to the brain) and vice versa, using machine processes to understand that which is human (describing a brain as a computer). Robots (machines that can simulate human actions and behaviors) take center stage in the earlier part of the century, both as useful supplements to humans—or replacements for them—in assembly line production. Robots are also perceived as the future working class who will allow humans to enjoy the pleasure of leisure earned by invention.

As the computer revolution shifts to the Information or Knowledge Age, we witness a growing interest, both scholarly and pop culture, in the blending or merging of information technologies with human processes. From human creations such as androids (Bladerunner, Terminator, A.I.) to machine-human mergings (Lawnmower Man illustrates one extreme, Donna Haraway's (1991) Cyborg, another), the system of meaning focuses on life as this is mediated, moderated, or controlled through technology. Virtual reality gear is designed to be the penultimate mediator of self and the environment or self and other. The goal is a seamless simulation of the physical mediation of self to environment: face-to-face interaction.

For centuries, people have looked upon this connection of human and machine warily. Stories such as Frankenstein serve as a warning of what can happen when human machine creations get out of control. Stories such as the Matrix repeat this warning at a more intense level, teaching us that our own cognitive capacities may be at risk if the power of human-created information technologies were to overtake solely human power.

The "way of being" metaphor is certainly not a warning. Rather, it is a transparent state wherein the self, information technology, everyday life, and other are vitally connected, co-existent. This metaphoric frame focuses primarily on the self and how the self interacts with and makes sense of the world. Technology does not hold a position as object outside the agency of the human. Rather, the categories are collapsed, to varying degrees.

Putting aside the multiple philosophical threads of this discussion for another venue, one can perceive a situation wherein users, intertwined with their various technologies, tend to experience life and technology on the same plane, without making vast distinctions between the two or by conceptualizing life as essentially mediated by technology. Through the design, control, and play of information across contexts, personalized worlds can be created, organized, and enacted. Though the Internet is quite literally a network of computers, the outcome is a fuzzy mapping of imagined geographies, perceived physicalities, and transcendent forms. As a means for reinscribing, reconfiguring, or otherwise shifting identity, body and self's connection with other, the Internet simply is, for some, a way of being. For others, the Internet is simply the way one learns about, makes sense of, and ultimately knows the social world, and alternate means are not imagined.

This third frame involves a more integrated sense of the Internet as a part of the self. Within this frame, users may not focus on the technology used or occupied but rather on the expression and negotiation of self and other with or through Internet technologies. Users who have integrated Internet technologies into their lives to a high degree can be seen to incorporate the Internet as a way of being. Users might spend much of their time as computer-mediated beings, adopting alternate or additional personae in various text and graphic online environments, seeking transcendence from embodiment or a different embodiment, protection from embodied others, or an eventual merge of mind and body with machine. On the other hand, there are those users whose embodied connection to the technology is powerfully evident, such as those who broadcast daily activities as public display via webcams or even those who feel best when the Internet is practically attached to the body via mobile communication technologies.

This "way of being" metaphoric framework appears to be distinguished from the "tool" framework by the collapse of the inside/outside distinctions which are constituted by understanding Internet as a conduit. Metaphorically speaking, when something unfamiliar like the Internet (figure) is compared to a conduit (ground), those features of a conduit are transposed to the Internet. That which is transferred from one place to another via the conduit resides inside the conduit. The receiver and sender of the stuff being transferred are containers which lie outside the conduit or are attached to either end of it.

Quite to the contrary, the Internet as a way of being implies an interweaving of technology and human in context, both acting as agents within social structures. As Novak notes, both objects and bodies are "collections of attributes . . . assembled for temporary use, only to be automatically dismantled again when their usefulness is over" (1991, p. 235). In other words, the construction of identity, place, boundary, and meaning is thoroughly negotiable and ad hoc. Situations call for architectonics; technologies supply the means by which identities and social

structures can be perceived as having continuous malleability and transformative potential.

Of course, this potential is intertextual; Internet beings dialogically and recursively constitute each other simultaneously or alternately as author and audience, performer and stage, with all the power and ideology of contemporary life.

From this perspective, computer-mediated communication is both process and product, medium and outcome. Identity and cultural contexts are multitudes of ever-evolving, self-referential sets of texts, influencing and being influenced by readers and writers and the individuals' willingness to treat these texts and the associated social structure constructs as real. Within this frame, the focus of research might be to reconsider and reconceptualize certain taken-for-granted aspects of being human with others, to explore the intersections of individual, technology, and identity, and to examine closely how Internet technologies are woven into a participant's life experience.

Very few people would identify this category or directly describe themselves as being within this framework. This category describes a shift in thinking that just happens, not simply a metaphor applied in a specific situation or context. Put differently, this is not something you "do" but something that just "is."

In a sense, this category could be marked by its absence as a conscious frame of reference. Most examples which demonstrate this category effectively are examples in which this category is absent. For example, take any textbook on organizational communication, business communication, and interpersonal communication off the shelf. Chances are excellent that the technology related topic will be the title of one chapter or one unit. Like ethics, information technologies remain relegated to separate chapters in textbooks, even though no interpersonal, organizational or business contexts exist wherein ethics or technology are completely absent. If and when technology is seamlessly integrated throughout our general textbooks, not as a tool but as a character, the separation of technology from being and knowing will be effectively diminished.
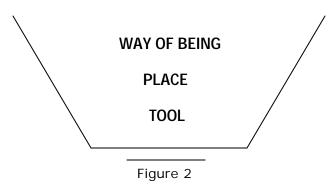
Visualizing the framework of Tool, Place, Way of Being

The framework of Tool, Place, and Way of being was originally conceptualized (Markham, 1998) as a continuum. This visualization sets up a false distinction between the three categories and implies movement along the continuum from one cognitive conceptualization to another, which is not necessarily reflective of users' experiences. A two dimensional line model also implies that a user exists at one point on this line (see figure 1). Yet the idea that users progress from one conceptualization to another over time is still very valuable when considering how people shift their cognitive maps and make sense of Information and Communication technologies. Indeed, as people become more familiar and comfortable with the technological interfaces, they have more potential to feel a sense of presence when using these technologies. Of course, type of interface, degree of perceived intimacy in interaction, and time spent online all influence the degree to which one will move from a tool-based to place-based set of metaphors.

TOOL   PLACE   WAY OF BEING

Figure 1

We might more productively see this continuum as a container that gets filled up, although even this visualization is somewhat misleading (see figure 2).

WAY OF BEING

PLACE

TOOL

Figure 2

Once you perceive the internet as a tool, there's no going back to a point of reference that does not include the tool, although this metaphorical framework might appear less at the surface of sensemaking and more at the deep structure level. Once one perceives the internet as a place, one can move back and forth from these two conceptualizations, tool to place, depending on the context.

The problem with this second visual representation of sensemaking is that it equates a "way of being" with the other two metaphor frames, which is inconsistent with the nature of these categories. Thus, another modification of this visualization yields an intriguing possibility: If contemporary communication technologies such as the Internet facilitate a closer and closer connection between human and technologies, or a collapse of meaningful distinctions in how self and social structure are constituted and lived, the container begins to disappear and the category called "way of being" becomes, simply, everyday life. As the objects and subjects in current conceptualizations of technology as a tool or place collapse or merge, the container itself dissipates into the shared or merged experience of the world.   Technology disappears as a separate construct in everyday life because it is a transparent way of making sense of the world.

Implications

When research scientists operate within in one metaphorical construct, policy makers utilize a different framework, providers work within yet another

conceptualization, and users engage in multiple different methods of meaning, the resulting conflict of perception is the issue of least concern. Everything from policies and procedures to regulations and laws are enacted with little or no attention paid to the way people understand them, using their own metaphoric frameworks. Well-intended, research-based policies may, in fact, gain nothing for their intended recipients because the recipients do not respond as expected.

"Digital Divide" and "Access" are two terms that are bandied about in political, social, and academic circles. The terms have been linked together via the widespread belief that providing access to new technologies will actually bridge the digital divide. What do these terms mean? Do we all interpret them in the same way? In a very basic sense, the intention of policies in this area is to make sure everyone has access to the Internet; the underlying goal is to help people who are disadvantaged in society profit from the opportunities made available by the Internet. Interestingly, both terms have been defined primarily by those in power, imposed on those to whom they apply rather than grounded in the sensemaking practices of their targets.

The concept of access within the larger discussion of digital divides has been discussed extensively in political and academic spheres. In this piece, these terms serve as an example of metaphors that are becoming embedded in everyday language and being taken for granted without ample reflection. Even a brief analysis of these two terms provides a powerful example of the linguistic power phrases have in pre-defining and pre-confining the way information technologies work, how they should be perceived, and how one should utilize them.

Both terms tend to oversimplify the causes for social class differences as well as the solutions for these disparities. To put it somewhat bluntly, the use of these terms to encapsulate the situation presumes that if a person has an Internet connection, he or she will have the knowledge necessary to rise out of his or her current social strata to the next. More frightening, if the disadvantaged person fails to achieve this and profit from the opportunities new communication technologies provide, failure is typically attributed to the person's lack of initiative rather than to the overly presumptuous way in which Information and Communication Technologies are perceived to actually work.

Metaphor scholars largely agree that terms such as "access" and "digital divide" are understood metaphorically (Lakoff and Johnson, 1980; Ortony, 1993). We can look in dictionaries to find the most popular or reified meaning systems for these terms. A quick look in Oxford English Dictionary, for example, yields at least two possible metaphors: Access is a Doorway or Access is Entering: "The action of going or coming to or into; coming into the presence of, or into contact with; approach, entrance" (OED Online, 2nd Edition). Digital Divide is more complicated because it has developed a specialized meaning. We commonly understand the Digital Divide to refer to "the gulf between those who have ready access to current digital technology (esp. computers and the Internet) and those who do not; (also) the perceived social or educational inequality resulting from this" (OED Online, 3rd Edition). The underlying assumption is that the divide (separation) will be erased with connectivity.

These metaphors work together to frame two impossible processes: First, that movement through a doorway marks the difference between ignorance and

knowledge; and second, that movement from one social class to another is as easy as moving through a doorway. This might seem to oversimplify the way we make sense of access and digital divide in context, but these oversimplifications are reproduced in news sources over and over again. Over time, these processes are understood to be the way it works, just as with the example of the SMCR model of communication.

It is crucial to reexamine our use of particular linguistic constructions in policy making, so that the implications of certain social processes are not oversimplified and also so that the actual mechanisms for change are both feasible and solvent.

Conflicting Root Metaphors: Potential Lost?

Another example of conflicting results based on differing understandings of and usage of root metaphors can be found with electronic libraries.   Our different definitional frames lead to drastically different uses of new communication technologies.

The way libraries are structured certainly impacts the way users conceptualize them, move within them, search or browse for information, and so forth. Almost everyone in an administrative or teaching role at a university in the United States will recall a time when libraries were solely places with walls, within which one could wander up and down aisles filled with written documents. One could search in index files, electronic or paper, to find information useful for one's current topic of study. Alternately, one could find the section within which books on a particular topic were found and simply browse titles on the shelves, flipping book covers open to review more specifically the tables of contents or indexes of various books and journals.

Visually seeing the sheer number of books coupled with the experience of struggling to carry stacks of books to study carrels followed by investing hours of time (and a multitude of coins) in the copy machines, patrons and employees of the bricks and mortar library have an embodied understanding of the library as a place within which information is housed and knowledge might possibly be gained. The concepts that explain the experiences will vary, but will likely include notions such as "labor intensive," "physical activity" and "time investment."

The Internet transforms libraries from places to containers which store data. When patrons use a web browser to access library databases, they may initially conceptualize a place, but there is a tendency to conceptualize the library as a database, a tool to retrieve information. Search engine interfaces are, for the most part, designed to respond to search term queries with a list of pre-sorted hits; input a string of words and the database will display resources that contain one or more of these words. Very few search engines simulate browsing on a shelf or in a section of the library; those which do are not the primary databases used by patrons. The most popular interfaces encourage one to conceptualize the process as one of sending a request through a conduit and receiving linear, discreet information back through that same conduit.

When I give workshops on database searching, patrons are surprised to learn that the multiple library-related search engines are not linked together in a universal fashion and that a search within one search engine will not necessarily yield all

possible sources, even if one's search terms are excellent. Arguably, they do not conceptualize the library as a place at all. If they did, they might realize that this place called a library has multiple points of entry, each of which might provide a new path for getting to the desired information. They might visualize hidden paths. They might be encouraged to experiment with techniques to wander and browse. They might consider the electronic library as a place to meet people, even librarians, who might help them find their way around, answer any sort of question, and help them get their research done.

This brief example is simply one illustration of how different linguistically based frames of reference can have meaningful consequences on action. This is how metaphor works; it opens up a possible path, encourages movement down that path, and as one moves along this path, other alternates fade away. These alternate ways of knowing are recoverable, but it is very difficult to see these other ways of knowing without being continually influenced by the path one is standing on.

Metaphors help us make sense of unfamiliar concepts and things, but they also structure the way we respond to those concepts and things. At the level of linguistic construction, then, the way we describe Information and Communication Technologies influence the shape they take for others. As academics and policy makers, this gives us great responsibility and opportunity. We have the power to define social processes and draw the boundaries for others' experiences. This may seem an exaggeration; surely, language cannot be at the root of our world's problems, and the reality of the Internet is not something we simply invent through words.   To the contrary, metaphor matters.   Our symbolic activities have constructed religions, languages separate cultures from one another, and most of us in western cultures look to dictionaries and encyclopedias if we don't know the meaning of something. It is vital that at this juncture in the development of new communication technologies that we pause and reflect on our discursive practices about these technologies, to ask ourselves what we are creating as well as what we are leaving behind.

Notes

[1] The notion that discourse functions to shape reality is well developed in multiple disciplines. As well, this is a well grounded assertion within the arena of Internet studies.
[2] Raymond Gozzi, Jr.'s various analyses of Internet related metaphors are useful resources.
[3] This example of how the social construction of reality operates draws on Max Black's explanation of how systems of meaning are fostered by particular metaphoric comparisons (year); Karl Weick's theories of organizational sensemaking and cognitive mapping (1979); Lakoff and Johnson's theories of how metaphors become embedded into language and practice (year); and Anthony Giddens' theories surrounding the idea of structuration (1991).
[4] This is certainly not a new claim, as it is made by multiple media scholars in the past century. Here, I'm drawing on Marshall McLuhan's notion of new communication

technologies as extensions, which he speaks to in several works, including The Gutenberg Galaxy (1962) and Understanding Media: Extensions of Man (1964).

[5] The concept of Internet as prosthesis has been developed in other places. Here, I seek to introduce it as a topic, not to cover it in depth. See Haraway (1991) and Landsberg (1995) for interesting perspectives.

[6] Here, I do not detail the origins of the Internet, as this has been covered extensively and adequately in numerous other sources.

[7] Steve Jones (1995) offers an excellent discussion of this in the book Cybersociety.

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