Users' Metaphoric Interaction with the Internet

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Abstract

This paper investigates the roles metaphors play in mediating the relationship between the Internet and its user. Since its inception, the Internet has generated a wide variety of metaphorical expressions. Users make sense of the Internet by describing the unfamiliar in terms of the familiar. The metaphors users invoke will drastically affect the success with which users are able to understand and use the Internet. However, current metaphors are limited, simply because it is too complex a phenomenon to be fully contained by any one metaphor. The metaphors users generate vary culturally, historically and individually. However, previous research typically proffers canonical models of Internet use. The current research acknowledges that individual models of metaphor use are necessary. Q-Methodology enables a user-centric approach, by modelling how users metaphorically think about the Internet. An extensive, online, self-selecting sample (N=354) completed Q-sorts and a demographic questionnaire. Super-order factor analysis of the different perspectives on the Internet have condensed around four operant factors. By studying metaphor use in context, it is revealed that each user group is using similar metaphors to refer to different aspects. These findings highlight the functional nature of metaphor: particular metaphors are used to convey a particular meaning that is context dependent. This research is one step towards developing a theoretical approach of how metaphors mediate our experience, understanding and interaction with the Internet.

1 Computers and the Internet

Throughout history, technologies that substantially increase the amount of information available, and lessen the burden of its distribution, have had a fundamental and irrevocable impact on our everyday lives (Sullivan, 1997). There is little doubt that computers represent a genuinely revolutionary technology. The computer quickly has become a ubiquitous fixture in the home, school, and the workplace. It enables us to perform routine tasks quickly and efficiently, with little more physical effort than the click of a mouse (Weiser, 2001). Humans are now beginning to utilise this technology in new ways: computers are used to access the broader environment of information sources and services. The Internet is a large and rapidly growing information resource. It consists of a global network of computers which enables people to communicate and share information; its user-friendly 'clickable' hyperlink structure is credited for bringing vast amounts of information to a wider audience with low tolerance for learning new technical skills (Bruce, 1999).

Considering the few short decades since the invention of the Internet and the even shorter span since it has become an everyday tool, the penetration of this technology into everyday life is striking. With an estimated three-quarters of a billion online users worldwide in 2004 (Internet Usage Statistics, 2005), the permeation of the Internet is extensive. However, it should not be assumed that those with access to this technology automatically understand how to use it. As computing technology advances at a rapid pace, it is imperative for those affected by it to understand the key concepts and tools involved. We tend to use metaphor to make the technology meaningful by representing it in recognisable ways (Hine, 2000).

2 The Internet and metaphor

Metaphors enable us to understand new technologies. As Lawler (1997, p. 3) notes: 'new things are hard to talk about … Our experience moves much faster than our language does and few things are newer than [the Internet] … Fifty years ago, the Internet in any form didn't exist, and less than 10 years ago, before the advent of the World Wide Web, the Internet was unknown except to a relatively small number of research scientists, academics, and computer buffs'. When people try to understand something new, they put it into a conceptual framework of

something else they already know about. By identifying the Internet as analogous to something more commonplace, it helps to explain the unknown or unfamiliar and hence the technology is made meaningful.

It is widely acknowledged that our interaction with technological tools entrenched in everyday practice generate new theoretical metaphors and concepts (Gigerenzer, 2000). Since its inception, the Internet has generated a wide variety of metaphorical expressions. Somehow users have come to 'surf' the 'Web', follow their 'bookmarks' to 'sites' where they browse 'pages', registering 'hits' with the 'host' computer. Those who actually use the Internet quickly stop thinking of any of this as metaphor and simply accept it as a new technology, with new conventions and a new lexicon of its own (Basalla, 1988).

2.1 Metaphor

The significance of metaphor has long been recognised. Although definitions and types of metaphor can vary [1], the function of metaphor is clear: we try to understand a less well understood concept in terms of one that is better understood (Lakoff & Johnson, 1980; Ortony, 1993). Metaphor is a ubiquitous phenomenon in everyday life. Far from being a mere linguistic decoration, metaphor is an omnipresent feature of our thinking and discourse (Taylor, 1984; Ogborn, 1996). The metaphors we use in our everyday language profoundly influence what we do, because they shape our understanding (Haste, 1997). When we change the metaphors therefore, we change how we think about things.

Metaphor is the vehicle of insight. It initiates and extends understanding through the formation of new conceptual connections. 'Many of our activities are metaphorical in nature ... these metaphorical concepts structure our present reality… and have the power to create a new reality' (Lissack, 1997, p. 294). Metaphorical extension forges and reshapes concepts thereby modifying language so that it comes to embrace an ever wider and more complicated repertoire of referents and activities (Moser, 2000). Metaphor, then, is not an alternative way of expressing common sense but a common way of achieving new sense.

2.2 Internet metaphors

The mapping process between the unfamiliar and the familiar is essential to human thought and understanding. The process of building these linkages between the known and the abstract is what they believe makes a metaphor effective as a model (Palmquist, 2001). This is even more important, as the Internet is very complex to comprehend and mentally visualise. The Internet has a hypertextual structure, meaning that any word or image can be linked to any other in an infinitesimal range of destinations or locations. The hypertextual nature of the Internet is, at least initially, alien to most. Metaphor are powerful tools that provide a way of visualising and comprehending this space that is too large and too complex to be seen directly, thus making it easier to understand and use. Furthermore, metaphors exploit the extraordinary human ability to organise objects in space (Dieberger, 1998). The function of this is twofold: metaphors create a 'sense of place' by re-establishing a connection to the tangible physical world that we all know and function in. More importantly, they are a strong influence in the development of an information infrastructure (Dodge & Kitchin, 2001).

There has been a rapid evolution in computing metaphors as the Internet has grown and changed. User interfaces commonly are based on metaphors of real world objects they are already familiar with. Probably, the best-known example is the spatial metaphor. Its basic premise is that locating information in cyberspace has similar psychological features to navigating in physical space. Therefore, promoting mental representations of spatial layouts of information is a good approach to improving the user's ability to access information (Kim & Hirtle, 1995). Through metaphors, we build up cognitive map to represent our navigation through cyberspace. Metaphors help us formulate configurational knowledge; that is, knowledge of the associations between and relative locations of places (Kitchin, 1994). This is very important for the users in cyberspace; with a unified layout people can remember where they are and what is around them. Without this, people will find cyberspace rather disorientating

[1] There are many different types of metaphor. Also, there is a noted distinction between simile, metaphor, analogy and model. There is a tendency to use the word 'metaphor' as a generic term and for simplicity, this convention will be followed in this paper.

and discontinuous. These metaphoric representations are vital in providing a critical way in which to think about the Internet.

There is little doubt that 'metaphors are powerful rhetorical devices used by both users in the continuing reconfiguration of the Internet (Thomas & Wyatt, 1999). However, current metaphors used to describe the Internet are limited, simply because it is too complex a phenomenon to be fully contained by any one metaphor. As the user must traverse a more hyperlinked and distributed environment, the complexity of that reality is particularly difficult to capture in a single metaphor. The implications of this are twofold; the metaphors people invoke will drastically affect the success with which users are able to understand and use the Internet. More importantly however is the idea that either new, more detailed metaphors need to be introduced or the metaphorical approach may have to be abandoned in favour of a more literal one (Carroll & Thomas, 1982).

3 Previous Studies

The explosive growth of the Internet has clearly demonstrated the need to organise, filter, and present information in ways that allow users to cope with the sheer quantities of information available. Given the predominance of the Internet in everyday computing, there is a surprising lack of research into how people metaphorically think about the Internet. Improved understanding of users' Internet metaphors and their impact on navigation patterns has many practical applications. Our primary objective is to provide information that can guide the design of next-generation web-browsing interfaces so that they better support common navigational activities (Cockburn, McKenzie & Jason-Smith, 2002).

Despite the importance of this type of Internet research, there have only been a few analytic studies of Internet metaphors. Although a good deal of research has been done to demonstrate the pros and cons of metaphors as interface design mechanisms, the metaphorical thinking of users has been little studied. In her seminal work, Palmquist (1996) investigated the metaphors being used to explain the Internet. Palmquist examined 100 articles from three indexing services and found that metaphors were used in 70% of Computer Database articles, 65% of the Magazine Index articles and 55% of the Information Science Abstracts (ISA) articles. Palmquist categorised the metaphors into major families: travel (20%) buildings/politics (15%) anthropomorphic (15%) commerce (14%) space (12%) frontier (12%) fire/water (6%) and animals (6%). Ratzan (2000) used an online sampling technique to explore the metaphors users use to describe the online environment. Using a Web-based questionnaire, Ratzan sampled 350 users and categorised them according to varying levels of expertise, and gender. Ratzan found that novices tended to use finite and tangible metaphors while experts tended to use more metaphysical, intangible metaphors. Men tended to consider themselves as higher skilled users while women tended to perceive themselves as lesser skilled on-line users. Females were more likely to use highway and frontier metaphors than did males and this held true over all age categories.

Hogan (2002) conducted in-depth qualitative interviews to elicit users metaphorical conceptualisations of the World Wide Web. Her results illustrated a general trend for low users to use more fixed, static representations of the Web whereas expert users utilise more abstract representations to convey the hypertextual structure of the Web. Interestingly, she also found that how the Web is conceptualised depends not only on level of experience but the primary use for which the Web is used. Generally, low users use the Web for one main purpose: information searching. They tend to use metaphors of offline searching and accordingly conceptualise the information on the Web as static and fixed. Experts tend to use amorphous and fluid metaphors to conceptualise and structure the Web; the property of interlinking information is paramount. These contrasting metaphors suggest that we might not all speak the same metaphorical language.

4 User Centricity

It is well established that metaphors are part of the collective experience of Internet users. Based on Hogan's (2002) findings, this research is based on the premise that the metaphors individuals utilise vary according to a number of factors. The ways in which users impose structure through metaphor will vary culturally, historically and individually. Depending on the search task, interface, personal way of thinking and perception, experience, age or culture, metaphors of the Internet could be changed in various ways. In this way, the Internet is a unique cultural technology (Swiss & Herman, 2000): not only do relevant social groups view the technology differently, but the

technology could be said actually to be a different thing for each' (Hine, 2000, p. 33). This has important implications about how we should analyse and study the Internet. If the Internet experience is a process of negotiation between different interest groups who potentially understand and represent the technology in differing ways, then the only way to understand it is analysing which individual factors influence what metaphors are used, and how different people use different metaphors in varying contexts. We need to develop an individual model of metaphor use.

Studies of the Internet are, by its nature, studies of the end user (Borgman, 1986). It has long been recognised that in order to build a good system in which a person and machine cooperate to perform a task, it is important to take into account some significant characteristics of people. These characteristics are used to build some kind of 'user model'. Traditionally, the model that is built is a model of a canonical (or typical) user. But often individuals vary so much that a model of a canonical user is insufficient. This research emphasises the importance of user centricity, by utilising a technique that takes individuals into account. Q methodology is fundamentally about subjectivity; it explores patterns of subjective views held by individuals. The Q sample is comprised solely of things which people have said, and it is therefore indigenous to their understandings and forms of life. The Q sorting process is wholly subjective in the sense that it represents "my point of view": issues of validity consequently fade since there is no external criterion by which to appraise a person's own perspective. Finally, the factors which subsequently emerge represent functional categories of the subjectivities at issue, i.e., categories of "operant subjectivity" (Stephenson, 1977). These sortings can be analysed objectively without entirely sacrificing the richness of the subjective data. Subjectivity is ubiquitous, and Q methodology provides for its systematic measure (Brown, 1992).

5 Q Methodology

Q Methodology is a little known form of research methodology, although it has been established for over 50 years. Developed by British physicist-psychologist William Stephenson (1953), Q Methodology entails a method for the scientific study of human subjectivity. Q methodology seeks to model participants' viewpoints on a specific matter. This modelling or "Q sorting" is accomplished by the participant systematically ranking a set of stimuli according to a specific condition of instruction. Most typically, a person is presented with a set of statements about a topic and is asked to rank-order them (usually from "agree" to "disagree"). The fact that the respondent is ranking the statements according to his/her own point of view is what brings subjectivity into the picture (Brown, 1992). The rankings are subject to factor analysis, and the resulting factors indicate segments of subjectivity that exist.

5.1 The Q- Study

Between Dec 1st 2003 and Mar 1st 2004, 354 respondents completed an online Qsort and demographic questionnaire (www.cyberviz.co.uk [2]). The 22-item questionnaire covered issues such as demographic information, experience, usage, and attitudes towards the Internet, plus open ended responses to questions such as 'The Internet is…', The Internet is like a …', and 'When I think of the Internet, I think of …'. Participants chose to complete either a text/image Q sort [3], ranking 26 statements and/or image items according to like or unlike they are in relation to their own mental image of the Internet. They were asked to sort them on a scale from –4 to +4. The distribution of the rating scale is so that fewer statements are placed at the extremes – this forms an inverted, quasi-normal distribution. Super-order factor analysis of the 26 images[4] of the Internet have condensed around four operant factors: three concerned with interlinking networks, the fourth depicting popular science fiction representations.

[2] The Q sample and grid can be viewed at http://www.bath.ac.uk/~pspalh/qgridpics.htm
[3] 25 participants chose to complete both types.
[4] Due to space restrictions, only analysis of the image Qsort data is presented here.

5.1.1 Factor 1

Factor 1 is concerned with the linking structure of the Internet. As demonstrated in *Figure 1*, images chosen to be 'most like' the Internet tend to show clusters, or nodes with lines linking each of them. Users tended to dislike abstract conceptions that lacked structure or ways of linking information. The open-ended responses taken from the demographic questionnaire also highlight this pattern. For example, one user talked about viewing the Internet as '*a network that comprises thread (links) of varying lengths and widths (representing the strength of the relationship) that connect related information and resources'*. The emphasis here is how the information is structured and organised, rather than the process of retrieving the information.

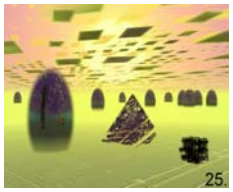
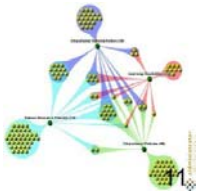
Images NOT liked	Images Liked
	

Figure 1: Factor 1.

5.1.2 Factor 2

Factor 2 is concerned with how the network enables them to access information on the Internet. Similarly to Factor 1, images chosen to be 'most like' the Internet tend to emphasise linking; those disliked lacked structure or ways of linking information (*Figure 2*). It is the qualitative statements that really demonstrate how the idea of accessing information is paramount: '*It's all about getting to the information. A connection of links bringing information closer to and more available to the general public worldwide'*. The emphasis here is on the process of retrieving the information, rather than how it is structured and organised.

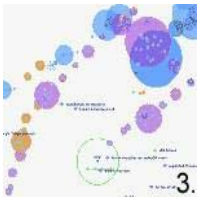
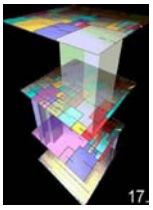
Images NOT liked	Images Liked
	

Figure 2: Factor 2.

5.1.3 Factor 3

Factor 3 is concerned with the chaotic, complex, connected, hyperlinked nature of the Internet. Images chosen as 'most like' show densely connected clusters, in which it is hard to see one clear route through to the information. Images that are disliked emphasise simple, static organisational structures (*Figure 3*). Users describe it as '*a mass of irrelevant information' or 'the world's largest 'glossy magazine', superficially covering every element of human experience - but with no real editorial control'*.

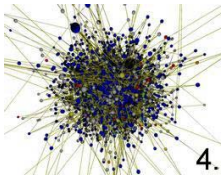
Images NOT liked	Images Liked
	

Figure 3: Factor 3.

5.1.4 Factor 4

Finally, Factor 4 emphasises representations typically found in science fiction movies and literature. These users do not really seem to have a concrete grasp of what they think the Internet is and have accordingly chosen images from popular media. They tend to have many conceptualisations, each of which do not fit the bill exactly. For example, one user describes the Internet as '*A library of libraries. A card catalogue of card catalogues, a colossal attic full of junk, old magazines, priceless artifacts, broken appliances and other people's*

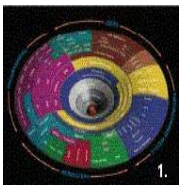
Images NOT liked	Images Liked
	

Figure 4: Factor 4.

hobbies'. Another says, '*No idea really. Maybe bits of information flying through cyberspace'*. Interestingly, they have tended to reject images that are abstract and do not bear a direct resemblance to the Internet as they know it (*Figure 4*).

5.1.5 Results summary

In summary, Factor 1 is concerned with linking structure; Factor 2 is concerned with networks and accessing information; Factor 3 is concerned with chaotic interconnections, and finally Factor 4 depicts science fiction representations from the popular media. On the surface, it appears that the first three factors are concerned with a similar theme – interlinked networks. However, by studying metaphor use in context, gained from analysing the demographic questionnaire data, the subtle nuances of meaning are revealed. For example, Factor 2 is characterised by user groups that primarily search for specific information. These users also report having difficulties locating information on the Internet. Thus, the network metaphor is used to convey their concern with accessing information. In contrast, Factor 3 is characterised by users that browse/explore the Internet. They use the Internet for more activities and report having problems organising information. Here, the network metaphor is used to convey the chaotic interconnectedness of the Internet. The similarity in the metaphor 'themes' may in part be attributed to the fact that these factors are characterised by male, younger users that define themselves as advanced or expert users. Factor 4 however, is inhabited by those who label themselves as novices. They also tend to be older females, use the Internet for the least amount of hours per week and generally have a negative view of the Internet.

6 Summary

The Internet is a genuinely revolutionary technology, producing new ways of interacting with information. It has generated a whole new metaphorical language, not only enabling us to apprehend the new technology, but also reshaping our understanding of it (Postman, 1992). Indeed, it is difficult to imagine an Internet language with entirely new and unique vocabulary, devoid of metaphors (Jacobs, 1999). Interestingly, although this new technology seems to 'offer the possibilities for recreating the world afresh' (Novak, 1992, p. 226), many adopt standard metaphors despite being able to have any form desired.

This research found four over arching metaphors utilised to describe the Internet; three concerned with interlinking networks, the fourth depicting popular science fiction representations. The first three factors dealt with the structural and procedural aspects of information on the Internet. Although superficially similar in nature, each metaphor, when studied in context, revealed subtle nuances of meaning. The fourth 'science fiction' factor was distinct from the others and was characterised by those who consider themselves as Internet 'novices'. This is not surprising, as the uninitiated, although lacking personal experience, has nevertheless been able to develop mental representations of the Internet (Ballofett & Boulaire, 1999). Indeed, Bruce (1999) found that metaphors are used by the media to explain emerging unfamiliar entities and they ultimately influence what people expect, how they identify with, use and learn about new technologies. Interestingly, users will frequently never get past their initial metaphorical representation (Carroll & Thomas, 1982). This research has demonstrated that metaphors are a necessary component in the user conceptualisation of the Internet. The ways in which users impose structure through metaphor varies according to a number of individual and contextual factors. It highlights how, although working to fulfil same objectives, users perceive and use this technology in different ways (Riva, 2001). These contrasting metaphors suggest that we might not all speak the same metaphorical language.

The single greatest weakness of most prior studies was that they could not or did not reveal how or why users utilised particular metaphors. This research has shown that it is insufficient to merely analyse the superficial metaphorical themes because the reason for using each metaphor varies. It suggests that we use metaphors in different ways, in different context in order to convey different things. It attests to the functional nature of metaphor: particular metaphors are used to convey a particular meaning that is context dependent. In this conceptualisation, metaphor is performative and action-orientated: metaphors are used to achieve particular goals rather than merely reflecting themes. Users experience different Internet mediums in different ways according to the different contexts in which they are searching for information. In this way, specific metaphors are used to 'interpret, express, and negotiate meaning within specific contexts' (Kern, 2000, p. 54). Consequently, a more detailed analysis of the factor groupings is currently being undertaken. This will illustrate how metaphors are being used in different ways by different user groups. Penultimately, this can be used to help develop a full theoretical

understanding of how metaphors mediate our experience, understanding and interaction with the Internet. Investigating these metaphors will help both designers and users to comprehend the various spaces of online information. If designers can understand how users use their websites, we can design better websites that promote more efficient navigation and enhance productivity. To fully take advantage of the opportunities offered by cyberspace, we need to comprehend clearly how individuals take in information from cyberspace. Understanding the processes that shape many different individuals' metaphors of cyberspace will facilitate the creation of technologies that are accessible to a wide range of people with a wide range of characteristics (e.g., age differences) and skills (e.g., level of literacy). Advances in this knowledge will help people from all walks of life and interests to access, search and use the information distributed across Internet resources.

Researchers have long been interested in what people think when they search for information. However, eliciting users' metaphors presents a challenge. Not only do users find it difficult to express and communicate their ideas, but the ways in which users impose structure through metaphor will vary culturally, historically and individually. This research employs a user-centric technique called Q Methodology to systematically measure human subjectivity. It is useful in exploratory research and can be easily combined with other methodologies to create novel, innovative approaches to studying any topic[5]. It can be noted that Q Methodology is not without limitations. Some argue that the magnitude of the sorting task is beyond the cognitive ability of most people to perform adequately (Bolland, 1985 in McKeown, 1988). The forced distribution of the Q sort is also controversial. The practice of using an inverted quasi-normal distribution is believed to violate the principles of operant subjectivity. However, although the number of items permitted is predetermined, the respondent determines the meaning of the continuum, therefore controlling the contextual significance of each item. The prescribed distribution is not an index of meaning (as a scale), but merely statistical so that means and standard deviations can be calculated (McKeown, 1988). Furthermore, respondents frequently 'violate' the format but neither the reliability of the technique nor the quality of the data is undermined by idiosyncratic sortings of the sample. Indeed, the shape of a Qsort distribution is methodologically and statistically inconsequential (Brown, 1971 in McKeown, 1988). The recommended distribution is merely a device for participants to consider items more systematically than they otherwise might.

Methodologically speaking, another significant advantage of this research is that it incorporates both graphical and textual means of investigation. Despite the fact that cognitive scientists emphasise that humans think in images as well as words (Kosslyn, 1980), most research tools are 'verbocentric'. This is beneficial for two reasons. Firstly, not all metaphors are linguistic or can be iterated in linguistic form (Ortony, 1993). Secondly, due to the hypertextuality of the Internet, it is a space that is hard to comprehend. A powerful way to understand and conceptualise the Internet is to visualise it through graphical representation.

It is clear that metaphors play a central role in understanding and thinking about the Internet. They are powerful tools that provide a way of visualising and comprehending this space that is too large and too complex to be seen directly. These metaphors are largely taken for granted. Used in ordinary discourse, the metaphors are so transparent that we pay little or no attention to the metaphorical character and the role that metaphor serves. This research is one step towards making the role of metaphor in mediating the experience between the Internet and its user explicit. This is especially important, because the metaphors users invoke dramatically affect the success to which they can understand and use the Internet. Users' metaphors will have important consequences for ways in which they relate to, interact with and understand cyberspace.

There are a plethora of advantages for using metaphors to understand the Internet. Metaphorical associations provide a conceptual seed from which a more detailed description of the Internet could grow, helping to explain a number of features which were formerly puzzling. When the Internet is interpreted with the help of a useful metaphorical frame, insight and understanding of its unusual characteristics immediately follow (Grey, 2000). It is also a tool of discovery, providing a way of imposing or discovering structure within novel or unfamiliar situations (ibid.). However, they also shape and constrain understanding. Maintaining a consistent extension of one metaphor may blind us to aspects of the Internet that are ignored or hidden by that metaphor (Lakoff, 1981). The implications of this are twofold: firstly, it may be more beneficial to conceptualise alternative metaphors even at the expense of completeness and consistency. Secondly, users need to be aware of their metaphors, to be concerned with what they hide, and to be open to alternative metaphors even if they are inconsistent with the current favourites (ibid.). So

[5] In the second part of the current study, Q is being augmented by Internet-based tasks in order to investigate how task-based experience generates, maintains and perpetuates metaphoric use.

while the metaphor allows for some furtherance of understanding, it does so only in a limited and particular way. As Leatherdale (1974, p. 181) notes, 'the suggestions metaphors make are often the source of profound error that could otherwise have been avoided'.

Metaphors are powerful tools to help the uninitiated understand the complex, but become unnecessary for those who have Internet expertise. Metaphors can be limiting, confusing and constrain creativity. This means that the metaphors people invoke will drastically affect the success with which users are able to understand and use the Internet. One solution might be to make the metaphor optional: to implement metaphorical graphical user interfaces for the novice, but have optional non-metaphorical ones too. Another solution is that either new, more detailed metaphors need to be introduced or the metaphorical approach may have to be abandoned in favour of a more literal one (Carroll & Thomas, 1982). As more users become comfortable with the Internet, perhaps we should abandon the search for a metaphor and embrace the new technology on its own terms. A better remedy is to use metaphors sparingly. Despite the inherent limitations of any metaphor, this research holds that the importance of metaphor cannot be underestimated. A person's expectations and assumptions about how an online system works and what it can (and cannot) do come largely from metaphors (McAdams, 1995). A less radical solution therefore is not to abandon metaphor altogether, but to explore and generate 'successful' metaphors of the Internet (Madsen, 1994; Carroll & Thomas, 1982).

As Hunt & Doherty (1995) note: 'we are throttling forward into 'how should we name this tool?' when nobody has really bothered to answer 'why should we?' '. It is hoped that the current research illustrates that it is good that we are throttling forward, wondering about how we should make sense of virtual space, contemplating what sorts of metaphors we should use to construct them. This concern is what keeps the metaphors from being naturalised and excluding other conceptualisations. It keeps the map from becoming the territory. It matters because metaphors control how we conceptualise cyberspace. They control and hide; they legitimate certain cultural experiences while excluding others. In this way we can draw a multitude of maps, each that give multiple ways of thinking about the Internet.

7 Conclusion

Metaphors play a central role in understanding and thinking about the Internet. These metaphors vary according to a number of individual and contextual factors. Given the ubiquity yet elusiveness of subjectivity, Q Methodology yields great promise in identifying how people use metaphor in their interaction with the Internet. Only with this deeper understanding can we truly understand how metaphors mediate Internet use and understanding.

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