MAPPING NOTIONS OF CYBERSPACE:

OPTIMISM, SKEPTICISM, AND THE ISSUES OF IDENTITY AND SPIRITUALITY

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This thesis entitled

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This is a literature survey on concepts of the Internet and cyberspace and their influence, both on society at large and at the individual level. On society, it discusses the optimistic and skeptic views on the impact of the Internet. At the personal level, it discusses issues of self and identity, and spirituality and religiosity. Except for spirituality and religiosity issues of the Internet, this work chose one author to represent each category: Howard Rheingold for the optimistic view, Clifford Stoll for the skeptic view, and Sherry Turkle for the issues of self and identity. The author's critiques on those notions are offered in the last chapter. The author argues that the diversity of notions on the Internet can be put in a broader historical and social context. These notions reflect the ever-present questions about the relationship between human and its technologies.

Approved:

Drew McDaniel

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To

Elin, Faikar, Hanum and Ranti

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CHAPTER I

INTRODUCTION

Background

The Internet has quickly become a communication technology used by many

people in the world, illustrated by the fact that the number of Internet users worldwide

has grown tremendously since it was introduced to the public. Nielsen/NetRating has

estimated that that the worldwide Internet population in 2002 was about 580 million

people; meanwhile the International Telecommunication Union (ITU) estimated 655

million Internet users worldwide in 2002, 27% of whom live in the USA. By 2004,

eMarketer estimates that there will be 709 million Internet users; and the Computer

Industry Almanac estimation for the same year is 945 million users (*Population

Explosion,* 2003). Some 45% of Internet users in the U.S. say that the Internet has played

a crucial or important role in at least one of the major events, moments, or decisions in

their lives, such as choosing a school or college, changing jobs, getting more education or

training for their careers, helping a loved one deal with an illness, or making major

financial or investment decisions (Kommers and Rainie, 2002).

Furthermore, the late 1990s and the beginning of 2000s have been characterized

by the domestication of the Internet, or a shift from using personal computers and

Internet in a work setting to that in a more domestic settings, for more personal and

household purposes (Cummings and Kraut, 2001). This is because the number of

Internet users has grown so significantly that people can use the Internet to keep in touch

with a larger proportion of their friends and family they otherwise are not able to reach.

Moreover, new services and content, like instant messaging and Internet telephony, make the Internet increasingly attractive for personal users. In sum, the Internet has further abolished and de-coupled the time and space, something that has been started by another previous telecommunication technologies such as telegraph, telephone, radio and television.

Unsurprisingly, the potency of the Internet in changing the nature of the society has encouraged many scholars and commentators to figure out and elucidate these new circumstances in a variety of different angles and aspects. Many scholarly publications have been published on this subject, as well as popular books that have been on the bestseller lists and widely read. In the growingly extensive, burgeoning and, in many cases, divergent and oppositional literature on this topic, scholars and commentators acknowledge that there is something different, for better or worse, in the current society as a result of Internet use. The Internet has become a fabric of life in modern society, which is vastly different from the pre-Internet society. Scholars and commentators are remarkably diverse in the interpretations of many aspect of the influence of the Internet on society. However, explicitly or implicitly, they agree with McLuhan's (1964) contention that media is the extension of man, the Internet (and the communication network as a whole) has become an extension of the nervous system. Some believe that we are very close with what McLuhan (1964) prophesied thirty years ago that:

> Rapidly, we approach the final phase the extensions of man—the
> technological simulation of consciousness, when the creative process of
> knowing will be collectively and corporately extended to the whole of

human society, much as we have already extended our senses and our nerves by the various media. . . . Any extension, whether of skin, hand, or foot, affects the whole psychic and social complex. (p. 19)

Indeed, human efforts to escalate the ability to send, receive, store and retrieve information have existed since the beginning of mankind. Verbal and non verbal media have been explored to serve communication purposes, and new communication technologies of communication are is invented continuously. Not only are new technologies other new tools or new instruments, they can also potentially transform humankind, both individually and socially. New communication technologies, like all changes, bring hopes as well as anxiety, enthusiasms and objections, for various reasons and rationales.

This kind of simultaneous objection and enthusiasm can be traced back to ancient times, as far as Socrates, Plato, and Aristotle around twenty three centuries ago to a technology that now is taken for granted: writing. Aristotle regarded writing as a means to express "affection of the soul" (Swerdlow, 1999, p. 116), to avoid loneliness and obtain a sense of self. On the other hand, Socrates saw writing as inhuman and degrading to society. Socrates, as recorded by his disciple, Plato, once told a metaphorical story to Phaedrus to denounce writing (Manguel, 1996). The King of Egypt was visited by the god Toth of Egypt who presented some new inventions, including writing. When Toth applauded writing as an invention capable of providing a medium for both memory and wisdom, the King was not amazed. The King stated that (in Manguel, 1996),

It will implant forgetfulness in their souls; they will cease to exercise memory because they will rely on that which is written, calling things to remembrance no longer from within themselves, but by means of external marks. . . . And it is no true wisdom that you offer your disciples, but only its semblance, for by telling them of many things without teaching them anything, you will make them seem to know much while for the most part they will know nothing. And as men filled not with wisdom but with the conceit wisdom, they will become a burden to their fellow-men. (p. 58)

Likewise, the invention of printing technology in the 15th century, which enabled the mass production of information for the first time, incited enthusiasm as well as apprehension. Martin Luther, the founder of Protestantism, described printing as "God's highest and most extreme act of grace, whereby business of the Gospel is driven forward" (quoted in Eisenstein, 1983, p. 150). Indeed, Protestantism exploited the potential of printing technology by printing and the distributing books and pamphlets throughout Europe subverting the established Church institution (O'Donnel, 1998). Conversely, around the same time, Abbot Johannes Trithemius, from the Benedictan Order, criticized that printing product on paper would not last long when compared with manuscript on skin. Furthermore, features like spelling were more carefully looked after in manuscripts production, so that in this sense printing could be regarded as the seeds of error, and the errors would be printed uniformly and consistently. Printing also undermined the monastic life where copying divine manuscripts was the central of social and economic structure of the monastic community.

Furthermore, technologies are never just tools—the also affect the inner being of humanity. These technologies change the way people see, perceive, and interact with their surroundings, be it other people or the natural environment. The introduction of technology, according to Ellul (1964, p. 325), "tends not only to create a new human environment, but also to modify man's very essence." Humans shape and create technologies, and they in turn shape human existence in a co-evolutionary process. In other words, not only do the technologies affect the social structure and the environment, but they also affect the psychological aspects of the people.

Socrates's story about the god Toth of Egypt and the King of Egypt above also touches on this point. Indeed, Socrates is one of the first who realized the potential of technology to change the human mind and inner self. Much more recently, McLuhan (1962, 1965) and Ong (1982) have shown that behind the observable social effects—such as the development of capitalism, the rise of modern science, the European expansion across the globe, and nationalism as well as nation state—print culture and literacy resulting from the invention of alphabetic movable type by Johann Gutenberg had subtler effects on the "psyche" of the society. Alphabetic movable type, in which each letter is cast on a separate piece of metal, according to Ong (1982), is a psychological breakthrough. It makes the word itself a part of the manufacturing process as well as a kind of commodity—words are reified. Ontologically, the separation of words into letters also indicates the beginning of reductionism, which is one of the foundations of modern science. Print also encourages a sense of personal privacy (individualism) that marks the modern society (McLuhan, 1965; Ong, 1982). The legibility of print has encouraged

silent reading, which is a very private activity, whereas manuscripts are usually read aloud. The sense of private ownership appears in authorship. The legitimate owner of a work emerges as recognition of what is known now as intellectual property right. In short, print has laid a psychological base for the development of modern social institutions—including individual rights, the nation-state and nationalism.

In other words, the interaction of humans and technology, including communication technologies such as the Internet, is far more intricate than the mere interaction of humans and his/her tools. Technology even has been associated with the state of spirituality and religiosity of humankind. Noble (1998), for example, contends the modern technological advancement actually is rooted in religious and spiritual ideas. In the same vein of Noble's perspectives, Davis (1998) maintains that millenarianism and mystical passion are present in each communication technology key development, including the Internet.

<center>Literature Review</center>

As mentioned above, the literature on cyberspace has been extensively growing in the last decade. This growth, obviously, is instigated by the exponentially growing popularity of the Internet, enabled by an unprecedented user-friendly browser called Mosaic in 1993, followed by an even better browser called Netscape in 1994. Surprisingly, there is not much literature discussing these diverse notions in one single work, nor providing a broad picture of the characters of the notions around cyberspace.

One among the few is a popular book authored by Buick, Jetvic and Appignanesi (1995) called *Introducing Cyberspace.* This book is a part of a series each beginning with

the word *Introducing,* and intended for general reader. Like other books in the *Introducing* series, *Introducing Cyberspace* is an unusually designed book, and heavily loaded with postmodern graphic design with many illustrations and some text on every page. The book offers a simple categorization of notions around cyberspace. It is not intended to academically explore this issue, hence the discussion is short, not thorough. Regardless, the book is fun and amusingly to read.

A more comprehensive approach has been undertaken by a reader called *Cyberreader* edited by Vitanza (1999). As a reader-book, *Cyberreader* consists of as many as forty-three articles on many aspects of cyberspace previously printed elsewhere. Vitanza then categorizes the articles under several subtitles, like cyberspace and virtual reality, virtual community, freedom/censorship and communications decency act, sexual politics, virtual books and libraries, cyberpunk/cyborgs, and multi-user dungeons. As a reader-book, *Cyberreader* is a good book since it includes the important articles written by respective writers and scholars in every subtitle of the book. Some of them are chapters or even parts of a chapter of a book, and the other are articles printed in magazines or other publications. Therefore, the readers can be exposed to many important articles written by the authoritative writers in one tome without having to have the access to many books, magazines and other publications. Indeed, this is the main purpose of reader-books, which is to provide a collection of important published articles, albeit the short articles and sometimes an excerpt of a longer article, on a certain topic, written by the respective authors on the topic. A good reader-book will be able to fulfill its purpose well. However, one can not rely on a reader-book to obtain a critical and

comparative perspective on the issues. A reader-book always contains an array of articles with a few, if any, comparisons on or between the articles. At the most, the editors try to write such an analysis in the introduction and epilogue which is, of course, still too short for a comprehensive, comparative and critical analysis. Therefore, a single work with comparative discussion on the notions on cyberspace subject is needed, in order to provide a reader a broad picture of the diverse notions on cyberspace while simultaneously obtaining the comparative and critical perspectives.

Another book, *Theories of the Information Society,* written by Webster (2002) has been trying to approach its subject on the information society using that perspective. This book, by emphasizing the role of information in contemporary society, however, discusses a rather different point of view from this thesis. In this book, Webster discusses a particular theory and its most prominent proponents in each chapter, and analyzes its strength and weakness using alternative theoretical analysis and empirical evidence. The concepts on information discussed are Daniel Bell's post-industrial society, transition from Fordist to post-Fordist society, Manuel Castell's informational capitalism, Herbert Schiller's advanced capitalism, Jurgen Habermas's public sphere, Anthony Giddens's reflexive modernization, and Jean Baudrillard and Zygmunt Bauman's postmodernism and postmodernity. It can be noticed, then, that the discussion in the book ranges across disciplines such as sociology, economy, and philosophy. Nevertheless, the emphasis of the discussion is the society at large and the role of the information in it as indicated in the aforementioned explanation. Meanwhile, discussion on the role of the Internet and cyberspace as the place where information flows around the globe only mentioned in

passing here and there to illustrate the information society. In addition, this book does not

discuss issues such as the self, religiosity, psyche, and identity, which are important

issues as the Internet and cyberspace grow to be more deeply interwoven into the fabric

of society.

Objectives

This thesis' objective is to provide a systematic and comparative overview of

some important notions on cyberspace and its on impact to the society and individuals.

Such a book surprisingly does not exist, despite the burgeoning of literature on

cyberspace. At the societal level, this thesis will juxtapose oppositional views on the role

of cyberspace in the society—i.e. optimistic views and skeptical views. At the individual

level, this thesis will discuss the impact of cyberspace on the notion of self and identity,

as well as the aspect of religiosity and spirituality.

This thesis will demonstrate how diverse and divergent the notion of cyberspace

has become in the last decade. As such, this thesis is expected to provide a map of the

discourse on cyberspace and Internet, and, like any map, is expected to be able to serve as

a starting point for those wants to explore this new territory. By having a map, regardless

how rudimentary it is, one will have a broader picture and context of the whole setting

before going further to the journey itself.

Method of Study

The thesis will be a literature survey on notions about the Internet and cyberspace

and its influence both on society at large and at the individual level. The literature used in

the study could be books, either scholarly books or popular books intended for more

general readers, scholarly articles from scholarly journals, relevant articles from magazines and newspapers, and other relevant materials available online.

However, some points should be put forward relating to the scope of the study. First, the thesis will focus on literature written in English, since most of the notions and discourse on this subject is written in English. Furthermore, the discourse has involved scholars and thinkers from developed countries most extensively for an obvious reason: the society in the developed world have utilized the Internet more than any society in the world. Under these circumstances, it is anticipated that most of the literature used in the thesis will be works by scholars and thinkers from the developed countries. Consequently, the societies discussed in these studies will refer more to the society in the developed countries.

Second, the period of the literature chosen in this thesis are mostly written after the mid-1990s. The growing number of publications and the intensifying of the discourse indeed started in the mid-1990s, along with the exponential growing of Internet users and usage. I will use the primary sources and materials as much as possible. Therefore, this study will not rely on, for example, the opinion of a thinker quoted by other books or articles; rather it will investigate the book or article written by the respective author directly.

Third, this thesis will choose an author in each theme, except when it discusses the notions of religiosity and spirituality of cyberspace. The amount of literature on this subject is abundant and still growing. For that reason this thesis is not meant to be all inclusive due to the limitation of space and time of study. I will discuss authors who have

written considerable works on these respective themes, so that I can trace their thinking on the theme over time. By choosing authors who have written several books and articles, I can safely argue that the authors have dedicated and spent a lot of time and energy to explore their concerns on cyberspace. Furthermore, I have selected authors that I believe are the most authoritative in their respective subject, indicated by the fact that the selected authors are frequently cited in the other relevant works, comments from the book reviewers, etc.

On the societal level, I will discuss the optimistic views of Howard Rheingold and skeptic views of Clifford Stoll. On the individual level, I will discuss two broad themes; first is the issue of self and identity, and second the issue of religiosity and spirituality on the cyberspace. The discussion of the self and identity will be focused on work Sherry Turkle. Meanwhile, this thesis will discuss some notions on cyberspace, religiosity and spirituality proposed by several thinkers, because, unlike the other previous themes, I have not been able to find a specific author that meets with the requirements I mentioned above. Despite plenty of literature on this subject, I did not find an author who has written two books or more on this subject, which seems strange to me because of the importance of the subject. Therefore, instead of selecting a particular author, I will discuss some notions proposed by various authors on this elusive subject.

<div align="center">Outline of Discussion</div>

Chapter I, which is the introduction to this thesis, discusses the background, purpose, and the significance of the study. It also reviews the literature, giving an overview on the issues of cyberspace.

Chapter II discusses the optimistic and skeptic views on the impacts of the cyberspace on society. It begins with the historical perspective of competing views—optimists and skeptics, utopian and dystopian—towards the introduction of new technology, followed by an analysis of the views of two authors representing opposing viewpoints. Howard Rheingold, a prolific author of eleven books and numerous articles, is selected to represent the optimistic authors camp. His vision of the impact of new technology is years ahead of its time, as shown by one of his earliest book on virtual reality published in 1991. However, the discussion in this thesis will focus on his futuristic vision of community drawn from his two most important books, *Virtual Community* (1993) and *Smart Mobs* (2003). The former envisages the emergence of virtual communities brought about by the Internet; the latter foresees the emergence of smart mobs enabled by the mobile internet, ubiquitous computing, and peer-to-peer (p2p) networks.

Meanwhile, from the skeptics camp, this thesis selects Clifford Stoll as the representative author. Although trained as an astronomer, Stoll is a respected computer expert. He gained his international fame when he defeated a German hacker who had planted a program to intrude into the US military and strategic computer networks and then obtain data to sell to the KGB. His book, *The Cuckoo's Egg,* about his experience in combating the hacker was in the *New York Times* bestseller list for four months. Later, he is disillusioned by the over-hyped caused by cyberspace, and became a fierce and stubborn critic on what he believes is society's blind faith in the Internet and cyberspace, a kind of panacea.

Chapter three discusses issues of self and identity, and spirituality and religiosity. Technologies are never just tools which influence, and are influenced by, society, but also influence, and are influenced by, the innermost parts of individuals. On the issues of self and identity, there is no writer that is more well-known and authoritative than Sherry Turkle. Her book, *Life on the Screen,* is a pioneering and groundbreaking work on how identity and self operate in the cyberspace environment. Beside a description of that book, this chapter also traces her idea of the computer as the second self.

Meanwhile, as mentioned earlier, the discussion of spirituality and religiosity in this chapter is not taken from one specific author. This section begins with a historical perspective of the relationship between technology and spirituality, and shows that the progress of technology has always been imbued by the spirituality spirit. Next, the metaphysic interpretation of cyberspace by the likes of Michael Heim, Margaret Wertheim, and Jennifer Cobb is discussed. This section is closed with the spiritual interpretation of cyberspace by the adherents of various religions.

Chapter four is a concluding chapter of this thesis. In this chapter, I propose my critique of the approaches discussed in previous chapters, and I try to put the approaches in a broader context. For example, I show that the opposing views on cyberspace—the optimism and the skepticism—have its historical roots in the long-term debate between the utopian and dystopian views on technology. In addition, I also briefly discuss two approaches towards cyberspace—namely the discussion on the media nature of the Internet and cyberspace, and the political economy approach towards cyberspace—that

are not discussed in the chapters two and three. Then, the chapter is ended with some of my final remarks to conclude this thesis.

CHAPTER II

CYBERSPACE AND THE NEW SOCIETY?

THE OPTIMISTS AND THE SKEPTICS

The Optimist: From the Virtual Community to the Smart Mobs

The early 1990s were marked by growing interest in computer networks and society. During this time, several books on this issue were published. Interest grew even stronger once the Internet became more widely used in the mid-1990s. Many authors were enthusiastic that cyberspace and the Internet would bring society to the next level, which is characterized by the importance and abundance of information (see for example Dyson, 1997; Gates, 1995; Mitchell, 1995; Negroponte, 1995; Rushkoff, 1991).

Among the optimistic authors, Rheingold is particularly interesting. He has written eleven books since 1983 on the issue of computers and technology in general. His latest book, *Smart Mobs,* which was published in early 2003, presents his latest notion and vision on the impact of the newest emerging and converging technology on society, i. e. mobile Internet and pervasive computing. His vision on the impact of technology on society that was years ahead of his time can be traced back at least as far as the publication of *Virtual Reality* in 1991 when he depicted this emerging technology. The publication of *Virtual Community* in 1993, which envisions a new society emerging from networked computers when the Internet was still quite new, has placed him as one of the most prominent thinkers on cyberspace and society. Besides this, Rheingold also has been active in commercial endeavors in virtual communities, although for some reason it has failed to be sustainable.

Background

Rheingold has always seen himself as a future-oriented and technology-fascinated person. He gave lectures in his classes about atoms when he was in the fourth grade, made a solar furnace accompanied by a drawing of a solar-powered city in the sixth grade, and wrote about brainwave feedback and consciousness technology in his undergraduate thesis (Rheingold, 1998). It is clear that his interest in technology and has been important from the beginning. He has written eleven books since 1982, five of which were co-authored with his colleagues, most of them discussing issues related to the computer field, such as language in human and machine in *The Cognitive Connection* (1987, co-authored with Howard Levine), the history of computation and computers in *Tools for Thought* (1985, republished in 2000), and virtual reality in *Virtual Reality* (1991). Rheingold's two books will be discussed further, about the society that will emerge in the era of Internet (in *Virtual Community,* published in 1993, republished in 2000) and the era of mobile Internet (in *Smart Mobs,* 2003b).

His interest in using of computers to expand and amplify thinking, communicating, and creative works in general, led him to work as a writer in the Xerox Palo Alto Research Center (PARC), one of the leading computer research centers in the country where the local area network and laser printer were invented in the early of 1980s (Rheingold, 1998). In 1985, he joined the WELL (Whole Earth 'Lectronic Link), a computer network conferencing system based in San Francisco, and has spent an average of three hours a day online ever since (Rheingold, 1998, 2000). In his book, Rheingold (1998) admits that falling into cyberspace was easy for him, since as a writer he has spent

much time in his work room, ". . . staring at a blank page in my typewriter (or, more recently, a blank file on a computer monitor), I was ripe for online communication. When I started out to be a writer it hadn't occurred to me that I was sentencing myself to a life term in solitary confinement" (p. 1). His experience with WELL was the starting point of his book *Virtual Community,* in which he envisioned the emerging society enabled by networked computers and its related technology. It is worth noting that at that time, the Internet had not been used widely, and, therefore, it can be said that Rheingold's vision was somewhat ahead of his time. Not only did the book instigate pro and con debates among scholars about the notion of virtual community, it also made Rheingold famous and one of the most authoritative persons on the issue of community in cyberspace. His last book, *Smart Mobs,* was his next vision about the society enabled by the emerging mobile internet and pervasive computing technologies. These two books, *Virtual Community* and *Smart Mobs*, will be discussed further as examples of how an views cyberspace and society.

Besides writing books, Rheingold has been actively involved in other professional activities. He has served as the editor of *The Whole Earth Review,* editor-in-chief of *The Whole Earth Catalog,* both of which are counterculture media, associated with the WELL (Rheingold 1998, 2000a). In 1994, Rheingold joined with Wired Ventures, the publisher of *Wired* magazine, to set up *HotWired,* the first commercial webzine (magazine on the web), and served as executive editor. However, he resigned from this new venture shortly after it was launched, because he envisioned *HotWired* "much more like a community (many-to-many, unfiltered, audience-created content)

rather than an electronic extension of a printed magazine" (2000a, p. 336). Rheingold

then wrote a business plan to materialize his notion, and raised $ 2 million to finance

Electric Minds, which was named as one of the ten best web sites in 1996 by *Time*

magazine. Electric Minds, however, was a short-lived venture; it was launched in March

1996 and out of business by July 1997 (2000a). He now maintains his web site,

http://www.rheingold.com, according to his original idea, though without commercial

elements.

Rheingold's position in regards to the relation between technology and society

can be epitomized as "cautious-optimist." In his article, entitled *Technology 101: What*

Do We Need to Know about the Future We're Creating (1998)*,* which can be seen as his

manifesto, he admits that the foundations of his beliefs about the future exhibited a strong

faith in "progress"—the promise that new technologies will bring different and better

days than today. Later, he starts paying attention to the possible dark side of technology,

so that, "I lack of the certainty of the true believers—both the orthodox technophiles and

the convinced technophobes" (1998). However, Rheingold believes that there is

opportunity to regain control over technology development so it will serve fully the

humanity. Instead, Rheingold believes that the destiny of humankind is in the hand of

human itself, with the condition that there are enough people that can understand what is

happening and are aware of the promises and pitfalls of technology. The necessity of

human awareness and action in using and shaping technology is prevalent in Rheingold's

books: **"**It is up to us to decide what *human* means, and exactly how it is different from

machine," in *Tools for Thought* (2000b, p. 319); "Virtual Reality vividly demonstrates

that our social contact with our own tools has brought us to a point where *we have to decide fairly soon what it is we as humans ought to become,"* in *Virtual Reality* (1991, p. 387); "Armed with knowledge, guided by a clear, human-centered vision, governed by a commitment to civil discourse, we citizens hold the key levers at a pivotal time. What happens next is largely up to us," in *Virtual Community* (2000a, p. 321); and "The convergence of smart mob technologies is inevitable. . . . In this interval before the new media sphere settles into its final shape, what we know and what we do matters," in *Smart Mobs* (2003b, p.215).

The Virtual Community: Internet and the New Social Engagement

Rheingold started being involved in what later he called a virtual community in 1985 when he joined WELL (Whole Earth 'Lectronic Link), a recently founded computer conferencing system that enabled people to conduct electronic conversations and exchange private emails (Rheingold, 2000). Since then, for average of two hours a day, seven days a week, he logged on and was fascinated by the community created online, so that it became a part of his life he was not willing to do without. WELL was rooted in San Francisco Bay Area, where many of the members lived in the area, including Rheingold. Therefore, despite its virtuality, Rheingold felt that WELL was like an authentic community, because it was grounded in his everyday physical world. In fact, members of the WELL sometimes met in real life (IRL) for parties, picnics, and other occasions. With his deep involvement in WELL, Rheingold (2000) was certain that he was participating in the self-creating of a new kind of culture, where new social contracts

were innovated, challenged, reestablished, rechallenged, and so forth, "in a kind of speeded-up social evolution" (p. xvi).

Based on his experiences with WELL and other form of virtual communities—such as Bulletin Board Service (BBS), Multi-User Dungeon (MUD), Internet Relay Chat (IRC), and other virtual communities in Japan and France—Rheingold tries to show throughout his book, *The Virtual Community: Homesteading on the Electronic Frontier* (2000a), that in virtual communities people do just abut everything people do in everyday life, except they leave their bodies behind. And when enough people form webs of personal relationships in cyberspace and maintain public discussions long enough, with sufficient human feeling, the virtual communities will emerge.

> There's always another mind there. It's like having the corner bar,
> complete with old buddies and delightful newcomers and new tools
> waiting to take home and fresh graffiti and letters, except instead of
> putting on my coat, shutting down the computer, and walking down to the
> corner I just invoke my telecom program and there they are. It's a place.
> (p. 9)

Therefore, Rheingold was disturbed by the notion regarding the public image of online social life that only socially crippled adolescents would use the Internet to communicate with other people in this way. For this reason, perhaps, Rheingold (2000a) tends to paint a rosier picture of online socializing and place more emphasis on the benefits of online communities. He does, however, admit there are pitfalls to virtual communities. It is clear that "the technology that make virtual communities possible has

the potential to bring enormous leverage to ordinary citizen at relatively little cost-intellectual leverage, social leverage, commercial leverage, and most important, political leverage" (p. xix). For Rheingold's non technology-deterministic view, it is dependent upon humans themselves how to deal with the technology and control its influence on their own destiny. The latent technology potentials, however, will materialize if the technology is utilized deliberately and intelligently by an informed population. Against this backdrop, Rheingold states, "I have written this book to help inform a wider population about the potential importance of cyberspace to political liberties and the ways virtual communities are likely to change our experience of the real world, as individual and communities" (p. xviii).

According to Rheingold (2000a), computer-mediated communication has the potential to change human life in three different and inter-influential levels. The first level is the individual, where perceptions, thoughts, and personalities—which have already been influenced by other communication technologies—will be affected by the ways people use the technology and by the ways technology uses the people. The second level is the level of personal interaction, which constitutes personal relationships, friendships, and communities. Here, computer-mediated communications are capable of many-to-many, space and time unbound, communications, which, in turn, raises the fundamental question of what we mean by "community." The third level is the political level. New communication technologies will enliven citizen-to-citizen communication, thus galvanizing citizen based democracy and creating a robust public sphere. Likewise, it will challenge the monopoly of communication media held by the existing political

hierarchy and the established media corporations. Considering the potency of the Internet in dramatically changing dramatically social life, Rheingold believes that the future of the Internet is too important to leave to specialists and special interests.

Arguments for Virtual Community

First of all, Rheingold (2000a) reminds his readers that there is no single and monolithic online subculture. People have been embracing virtual communities in many different ways, some for serious purposes such as exchanging preprinted papers among scientists, others for selling goods and finding dates, and so forth. Therefore, the virtual communities are more like an ecosystem of subcultures, with some different characteristics in each subculture. For Rheingold, creating a virtual community, with all its diversities, is a natural consequence of computer-mediated communication, "just as microorganisms inevitably create colonies" (p. xx). Rheingold also points out that it is not only cyberspace that has had fundamental impact on communities. Previous communication technologies, such as the telegraph, telephone, and television, have also helped redefine what people mean by community, how they change the public spaces and the way people to do things.

For Rheingold (2000a), virtual communities will resemble real communities if they are examined by using a sociological concept called "collective goods." Collective goods are the elements that tie individuals into a community, recognizing that these valuable elements are needed and should be gained in order for people to exist in the competitive world. There are three collective goods that function as social glue making virtual communities resemble real communities: social network capital, knowledge

capital, and communion. Social network capital is a social resource where people can

broaden and extend their friends and network of contacts, find new friends, and so forth.

Virtual community, undoubtedly, could be a way to meet people, whether or not the

relationship would be continued by meeting physically. It could be used for both making

contacts to extend the social network or maintaining the existing ones. Unlike in

traditional communities, where friendship is bound to a geographical context, in virtual

communities people are united in same interests and values. The chances of making

friends in cyberspace, according to Rheingold, ". . . are magnified by orders of magnitude

over the old methods of finding a peer group" (p. 12). Certainly, people could be

deceived by pseudonyms, but the swindler will gradually die out when people use the

medium critically.

Virtual communities also develop knowledge capital as its social glue, since they

provide highly varied accumulation of expertise. Since so many people from every walk

of life have embraced the Internet, a virtual community can be a tool to seek and obtain

information and knowledge. Rheingold (2000a) writes, "If you need specific information

or an expert opinion or a pointer to a resource, a virtual community is like a living

encyclopedia" (p. 46). Information sharing and exchange, which is a key part of

community, is prevalent in virtual communities as well. Forwarding a pointer or even full

text of certain information can be done simultaneously and easily to many people that

might be interested in that information. There has been as informal and unwritten social

contract in virtual communities that one will forward information to others who might be

interested, and at the same time believe that others will send theirs: "a marriage of altruism and self-interest" (p. 47).

The third collective good that glues the society, i. e. communion, Rheingold (2000a) argues, does exist in virtual communities. Rheingold presents some examples from his experience to be a member of the WELL, where sense of intimacy, fellowship, and togetherness are parts of a virtual community. Through the virtual relationships, for example, WELL members raised money to help another member pay for an operation which would enable her to walk. Help was also mobilized for a member who had decided to be a Buddhist nun in Nepal, and later was very sick and needed to have special treatment using special medical equipment before she could be delivered to a hospital in San Francisco. Rheingold, then, describes some other examples to show that virtual communities are able to provide the same support, companionship, and intimacy as real communities do.

Furthermore, Rheingold (2000a) argues that virtual communities could be seen as an extension of the notion of imagined communities proposed by Benedict Anderson. A nation can exist because there is a common acceptance in the mind of the population that it exists. Rheingold then quotes sociologist Marc Smith, who states that, "Virtual communities require an act of imagination, and what must be imagined is the idea of the community itself" (p. 54). In addition, Rheingold asserts that a transition to the community in cyberspace is not the first societal transition in the history of mankind. Modern society and nation states have been taken for granted. They are actually historically recent, resulting from the transition of the villages and small towns of pre-

modern and pre-capitalist Europe to modern society, from *gemeinschaft* to *gesselschaft* in Emile Durkheim's terminology. Thus, virtual communities in cyberspace might be a similar kind of transition that is taking place in more recent times.

Disinformocracy: The Dark Side of Virtual Community

Despite his optimism, Rheingold (2000a) is aware of the possible negative aspect of technology of virtual community as a means of enhancing democracy. The proponents and the adherents of new technology should keep an eye to the possible dark side of the changes, which Rheingold calls disinformocracy. Rheingold proposes that, "We need think together here, across boundaries of academic discipline, industrial affiliation, nation, if we hope to understand and thus perhaps regain control of the way human communities are being transformed by communication technologies" (p. xxxi). In his view, there are three kinds of social criticism relevant to the conviction of the virtual communities technologies.

First, the commodification of public sphere. The robustness of the public sphere, which is defined by Jurgen Habermas as the domain of social life in which such a thing as public opinion can be formed, certainly depends on the communication technologies available in the society. In addition, it has several requirements, such as open access, voluntary participation, the generation of public opinion through assemblies of citizens, the freedom to express opinion, and so forth. Since the public sphere and democracy are an unseparated couple originated from the same sources, an impaired public sphere inevitably will endanger democracy. Now, with the domination of commercial interest in mass media, the public sphere has been eroding, since "A politician is now a commodity,

citizens are consumers, and issues are decided via sound-bites and staged events" (p. 305). The communication technologies have been used extensively to promote consumer society, so that instead of being a channel for genuine communication they have become "a channel for the updating of commercial desire" (p. 305). Whereas the virtual community many-to-many technologies have the great power to break the monopoly of commercial interest in the media, ironically at the same time they are also more easily commodified, and therefore they pose a greater danger to the true public sphere.

The second element of disinformocracy is the use of virtual community technologies for ultimate surveillance over society and the intrusion of privacy. First of all, according to Rheingold (2000a), "information and communication technology have always been dominated by military, and will continue to be dominated by the military, police, and intelligence for the foreseeable future" (p. 310). If a totalitarian regime, therefore, has dominant control over these technologies, surveillance over the society could be done more effectively and efficiently. However, Rheingold points out that the attack on people's rights and privacy most probably comes from the commercial interests, not from political totalitarianism or a dictatorship. Totalitarian manipulators would be selling population data mined from digital footprints left by people when they use the communication technology by giving up some of their personal data in exchange for convenience in shopping, retrieving their money from ATMs, and so forth. Therefore, "Instead of just telephone taps, the weapons will include computer programs that link bar codes, credit cards, social security numbers, and all the electronic telltales we leave in our paths through the information society" (p. 313).

Third, the hyper-realism of virtual communities. Rheingold (2002a) quotes two French social critics, Guy Debord and Jean Baudrillard, to support the arguments. For Debord, hegemonic powers have turned everything into media event, where the populace has become the spectacle. Headlines, staged events, and advertisements have replaced true democracy, and simulated commercial versions of human relationships come to the fore. Baudrillard goes further by arguing that media have advanced the synthetic nature of technological culture and the corruption of human symbolic systems. Media has bombarded the populace with symbols that are not correlated to the reality, such as in the tobacco commercials that link the brand name of a cigarette to certain images representing adventurousness, bravery, and so forth. Thus, Rheingold warns, "When the technology itself grows powerful enough to make the illusions increasingly realistic, as the Net promises to do within the next ten or twenty years, the necessity for continuing to question reality grows even more acute" (p. 320).

Rethinking Virtual Community

In the revised edition of *Virtual Community* which was published in 2000, Rheingold adds a retrospective chapter to revisit his positions on the notion of virtual community. In short time, the Internet has transformed society institutions—commerce, politics, science, entertainment, education, etc.—which affect hundreds of millions of people. Thus, Rheingold asserts that, "More than ever before, we need to ask the right questions today about what kind of people, what kind of societies might emerge from social cyberspace tomorrow" (p. 323).

Rheingold (2002a) acknowledges the criticism that whether human lives are growing overmechanized and component-like is a very important question to ask. However, he disagrees that electronic media can not convey human emotions and this kind of relationship is worth less than face-to-face communication. In some extreme cases, such as for the persons who have disability in speech and many others that are hidden from public awareness, socializing through cyberspace is a way to have friendship and companionship. Therefore, judging that communicating through virtual community is always inauthentic would "invalidate the experience a person for whom Internet is not a luxury but a lifeline" (p.330). Despite the virtuality, for many people the Internet has been the place to find communion, "reached through the screen to touch others' lives" (p. 330), and therefore deserves the word "community."

Furthermore, Rheingold (2002a) asserts that the debate on the social impact of the Internet should be placed in the broader context of the social impact of communication technologies in particular, and any technology in general, since the early times. Human civilization loses something as well as gains something whenever new communication technologies are introduced. Plato, for example, criticized allegorically that the introduction of the alphabet would wipe out the skill of remembering, and would impair living dialogues since people would spend time in solitude deciphering alphabets from mute objects. The introduction of print technology drove the distance between individuals further since it enabled people to retreat to their homes to read news that used to be obtained together with others in town squares when travelers arrived in the city telling stories from far away lands. At the same time, nevertheless, print technology has made

possible previously separated people to be linked in more abstract relationships such as in

Anderson's (1983) imagined communities. Rheingold then argues:

> Virtual communities sits atop a hierarchy of abstraction—language, technology,
>
> computing, networking, many-to-many discussion. Virtual community is also
>
> built upon a succession of technologies and ways of life we chose to use and live
>
> and be shaped by, because they gave many people freedom and power. (p. 347)

In addition, Rheingold urges that if critics are disturbed by community through a

computer network, they should be disturbed by the alienation caused by cubicles in

skyscraper offices, automobiles, cities, and so forth.

In responding the critiques to his notion, Rheingold (2000a), again, proposes the

three levels of social impact of virtual community. The first level is how virtual

communities affect the minds of individuals. Rheingold begins by quoting MIT professor

Sherry Turkle who has argued that traditional boundaries between people and machines

are no longer clear and the new boundaries are being "renegotiated" (p. 352). The

gradually blurring of boundaries has been occurring for a long time, with the creation of

each new technology, and only recently human being have invented ways to accelerate

the whole process using computers and communication technologies.

There are two other kinds of critiques toward virtual community discussed by

Rheingold (2000a), i. e. whether the people who spend more time online live happier or

are more depressed than who do not and the issue of user addiction of Internet. Rheingold

refers to some research showing the negative impact of the Internet: people are less happy

after using the Internet for a period of time and there are a great number of addicted users

and the addiction should be recognized formally as a disorder in the psychiatric discipline. Rheingold responds by saying that the research is methodologically flawed and unrepresentative. Unfortunately, journalists and media have contributed to the negative image by emphasizing "the scare stories, Internet addicts, the sensational tales of online porno, sweeping claims on research that is less than superficial" (p. 359).

The second level is the nature of communities. Rheingold (2000a) states that he tends to agree with the argument that increasingly mediated communication is increasingly superficial. However, he argues, relationships through letters, telephone calls, and online chats are not necessarily shallow. In addition, mediated communication technologies—writing, postal system, telegraph, telephone, and the Internet—have enabled people to broaden their social networks beyond the immediate geographical vicinity. Rheingold uses the notion of "strong ties and weak ties" to support his argument. Strong ties are very close relationships (families, neighbors, close friends, etc.), and weak ties would be remote friends, pen pals, online pals, etc. A social network with a mixture of strong ties and weak ties is "very important for people to obtain the fundamentals of identity, affection, emotional support and material support" (p. 361). Social capital and useful knowledge are multiplied by weak ties, since information could be distributed more widely since the outlets are more available. On the other hand, strong ties provide less information and are therefore less open. Rheingold asserts that, "If the shadows of urban and mediated experience are alienation and superficiality, the shadows of the traditional community are narrow-mindedness and bigotry" (p. 361). While Rheingold does not dispute the failure of some virtual communities, he also points out some success

stories. Therefore, for Rheingold, time will tell whether healthy communities will emerge and be dominant in the future.

The third level of the critique of virtual communities is whether it supports a robust and healthy public sphere. For Rheingold (2000a), the most serious critique of *Virtual Community* is his claim that "many-to-many discussions could contribute to the health of democracy by making possible better communications among citizens" (p. 375-376). Rheingold traces back the critiques to the Frankfurt School proponents Adorno and Horkheimer who argued that what they called culture industry has brought about consumer society with its social and political apathy. For them, the combination of culture industry and entertainment do not tolerate independent thought that challenge the notion of economic desire for quick return of capital investment. Therefore, democracy and the public sphere have degraded ever since, and the virtual community, according the critics, is the continuation of this process.

Rheingold (2000a) responds by saying that what he did not make clear was that actually he was identifying the possibility of, and not advocating for, an electronic democracy. However, he admits that the further and continuing commodification of the public sphere in cyberspace is an imminent threat. In order to challenge this tendency, Rheingold believes that "until it is proved impossible, it is important for citizens to attempt to influence the public sphere by their use of many-to-many media" (p. 380). The ability to inexpensively publish works and to have many-to-many discussions independently from the big media is clearly the main advantage of the Internet to reverse the tendency. Rheingold asserts,

I believe the opportunity for leveraging is there, waiting to be seized, ignored, or

mishandled. The hegemony of culture, power, and capital . . . is a potent force to

be reckoned with. But if we don't try to make a difference in the way tools are

used and people are treated, we definitely *won't* make a difference. (p. 391)

Smart Mobs: Mobile Internet and the Future of Society

In his later book, *Smart Mob, The Next Social Revolution* (2003b)*,* Rheingold

claims to see the early signs of the next social stage after the virtual community was

formed by the Internet. He coins 'smart mob' to encapsulate what he thinks to be the

form of the future society. In smart mobs, people are "*able to act together in new ways*

and in situations where collective action was not possible before" (p. xviii). Rheigold

mentions some early signs of smart mobs where collective action would have not been

possible with earlier technologies. These include the use of idle capacity of connected

computers to join in the project to search extra terrestrial intelligence, the ability to

operate vending machines, in some parts of Tokyo and Helsinki, with cellular telephones,

and to receive directions from wireless organizers to get the destination place, the use of

short message service (SMS) forwarding to organize demonstrations that eventually

toppled President Joseph Estrada of the Philippines in 2001, and "The Battle of Seattle,"

when a loosely coordinated range of different groups were united to disrupt the World

Trade Organization meeting in 1999 in Seattle by using mobile, many-to-many, and real

time communication networks. These early harbingers are preceding a future society

where people are always connected to the Internet using their wireless and mobile

communication—be it cellular telephone, personal digital assistant (PDA), or a "wearable

computer"—and are also able to communicate with the physical objects around them.

This phenomenon is facilitated mainly by the convergence of three technologies, namely

the Internet, pervasive or ubiquitous computing, and mobile communications. We would

say that the convergence of these technologies will lead us to what we can call the mobile

Internet technology, or, in Rheingold's terminology, smart mobs technology. The crux of

Rheingold's thesis in the book is then how people could cooperate with others, and

balance it with their self-interest, using the new form of communication technologies.

Smart Mobs Technologies

The Internet will, as mentioned above, undoubtedly contribute to the rise of the

mobile Internet. However, Rheingold (2003b) points out a particular phenomenon in the

Internet that will be the key of the smart mobs technology, namely the peer-to-peer (p2p)

networks. Of course, the most notable example of p2p is Napster, where people were able

to share and search MP3 files without money involved. By providing user friendly

searching tool, instant messaging, chat room, and bookmark sharing features, Napster

was used by 70 million users trading 2.7 billion files per month. Eventually, in 2001

Napster lost the legal battle with the recording industry that viewed the music file sharing

as undermining their revenue stream. However, the passion for p2p capability has never

ceased, and has encouraged many other efforts to deal with the copyright problem.

Unlike Napster that still had a central server where users can go to find music and

connect with the owner of the file, and therefore vulnerable from copyright infringement

accusation, Gnutella, for example, proposed a totally decentralized p2p system. Gnutella

users can connect with other users to retrieve the files they want, so that the users' personal computers act not only as the client, but as the server as well.

Besides file sharing sites like Napster and Gnutella, where users share their computer memory or disk space, there is another form of p2p called p2p computing, also known by other names such as distributed processing and community computation. In p2p computing, people share the central processing unit (CPU) computation cycles of their personal computers. Rheingold (2003b) use SETI@home as an example, where the participants share their PC's computing time for the Search for Extraterrestrial Intelligence (SETI) project. This project has cleverly created a small program that can be downloaded to the participants' PCs, so that when the PCs are connected to the Internet and are in idle they will receive small segments of radio telescope signals and process it to look for patterns that are consistent with intelligent life. When these small tasks have been completed, the program will upload the result to the SETI@home servers, and pick up other small segments of data to reiterate the process. When the participants use the computers, the program stays dormant, and are active again when the users pause using the computer for a few minutes. With more than 2 million participants around the world, SETI@home has distributed the computation process that otherwise needs an expensive supercomputer. In various forms, comparable techniques have been used in many voluntary as well as for-profit distributed computations, such as in computation for complex molecule modeling for creating new medicines for AIDS and cancer, searching for genetic causes responsible for extinction of species, research to understand the causes of stock market volatility, and analyzing cryptographic and encryption problems.

Furthermore, Rheingold (2003b) asserts that the distributed computing and file sharing is only the first phase of p2p. The next generation would include p2p systems that share decisions and judgments. A simpler form of decision and judgment sharing is the collaborative filtering technique used in Amazon.com, which is able to recommend books and music based on the purchase record of other people who buy similar items. The future p2p will be collaborative filtering that will include every file—document, music, graphic, video, and software program—on the entire Internet, and at the same time take into account the tastes of every person on the Net, somehow keeping track of how all other people's tastes compare with one's own. Therefore, not only are the computation power and files shared, but also the tastes, judgements, and decisions. Rheingold mentions OpenCOLA as an example, where participants keep a file folder of their decisions—whether, for example, to save a document or discard it—that are available to others. By doing so, the participants serve their interests to fill the file folder with interesting documents, and at the same time provide decisions and judgments for other participants.

For Rheingold (2003b), p2p networks are potent for smart mobs because it "grows from the collective actions of large numbers of people" (p. 65). In other words, the key is not the hardware or software available to support p2p networks, but it is the new social contract used to share the new technology that makes p2p networks possible and grows. For Rheingold, then, distributed computation is a new way to create collective goods by assembling scattered resources, and file sharing is not only about "the quantity of computer disk that p2p memory can aggregate but about the social arrangements that

enable the members of a p2p community to copublish and share information" (p. 71).

Nevertheless, Rheingold recognizes that there is still one question looming on the future

of the p2p community that is whether p2p will be filled by free riders who benefit from

the community but do not want to share with the community. Rheingold refers to the fact

that "nearly 70 percent of Gnutella users share no files, and nearly 50 percent of the

system's resources are contributed by the top 1 percent of users" (p. 75). Certainly, there

have been efforts to expel the free riders. Mojo Nation, for example, launches a file

sharing system that requires users to contribute at least as much as they take away.

Meanwhile, OpenCOLA encourages a cooperative nature that does not rely on

participant's unselfishness to share or enforce sharing, since "simply looking for material

and then deciding whether to keep it or not creates information that is useful to others"

(p. 79). Therefore, while serving one's interest, they provide decisions and judgments for

others.

  The second technology that will support the future of smart mobs is the

technology that enables things or objects to be "sentient." The main element of the

sentient object technology is ubiquitous computing, or "ubicomp" for short. As its name

indicates, ubicomp enable people to perform computation in any location, thanks to

microchips capable of communicating with each other and with mobile devices that can

be implanted in every object and environment. Smaller chips and that are more capable

and cheaper, as suggested by the Moore's Law, will be inside or attached to the objects

surrounding us. According to Rheingold (2003b), "These technologies are 'sentient' not

because embedded chips can reason but because they can sense, receive, store, and

transmit information" (p. 85). Concurrently, the device people use will also become smaller and smaller so that the devices evolve from portable to wearable (p. 86). In this sense ubicomp is the opposite of virtual reality—where while the reality in the virtual reality is created and the real world disappears, ubicomp makes computers disappear and hidden in the objects and in the people's outfit. Indeed, in ubicomp the reality is indeed augmented with information and communication capability.

Rheingold (2003b) reports some interesting research and experiments regarding ubicomp in many high-tech technologies and research centers. One example is called CoolTown, a ubicomp effort conducted by Hewlett-Packard (HP). CoolTown is a model for the future in which "every person, place, or thing can be connected wirelessly, anywhere in the world, through the Web" (p. 95). Using various technologies—such as barcode readers, infrared beams, wireless Internet links, Web server on single chip, handheld computers, and mobile telephones—the physical and virtual world are linked through the Web. In other words, the physical world becomes clickable and browseable using appropriate mobile devices, by assigning URLs to physical objects. Pointing our handheld computers to a restaurant, the customer will be able to see the menu, the rating of the restaurant by the previous visitors, or recommended food from the restaurant. Scanning a barcode of book in a bookstore using the cellular telephone, people can retrieve the book review from the websites they trust, check what other book bought by other people who bought the book, and hear statement by the author of the book. Pointing a personal digital assistant (PDA) to a advertisement billboard, and find that the advertising shown on the billboard automatically changes and is replaced by other

advertising which matches as much as possible with the lookers' demographic data. Combined with a global positioning system (GPS), ubicomp will add location-aware features to the sentient things, where objects can direct the way to get the other places. In addition to that, research on wearable computers, such as a helmet with camera and display technology that able to project image as if the images are floating in space between the person and the objects, suggest that in the future it might be a common gadget people would wear to interact with their surroundings—both human and physical objects.

The third technology that converges with the Internet and sentient technology, according to Rheingold (2003b) is wireless local area network (LAN) and mobile communication. Wireless LAN has enabled people to connect to the Internet without being bound in a fixed location with reasonably cheap connection cost. In addition to that, wireless LAN also provides high speed data transfer, even faster than 3G (third generation) services provided by mobile telephone companies. It has been used quite extensively in many places, such as office building complexes, coffee shops, libraries, etc. Wireless LAN is also regarded to be an alternative to bypass the high cost infrastructure (telephone lines and cable system, for example) for remote communities to establish a connection to Internet. There has even been an on-going effort to provide free broadband wireless access in more that thirty frequently visited place in New York, such as parks and other meeting points.

Meanwhile, mobile communication, to some extent, has facilitated the emergence of the early momentous signs of the smart mobs era. President Joseph Estrada of the

Philippines, according to Rheingold (2003b), was the first head of state that was toppled

by a smart mob. More than a million citizens gathered on January 20, 2001, to respond to

the text message (SMS) they received in their cellular telephones, to protest the

presidency of President Estrada. Millions of text messages had been exchanged during

the demonstration to organize the crowds and to keep the spirit high. Two years before,

on November 30, 1999, the "Battle of Seattle" fractured the World Trade Organization

meeting, where huge demonstrators from many autonomous groups successfully

organized themselves using mobile phones, laptops, and websites. However, nobody has

to be involved in dramatic events such as demonstrations against the president or the

WTO, since there have been some other more "benign" examples of smart mobs.

Rheingold puts forward some examples, among others is Upoc (Universal point of

contact) in Manhattan, which sponsors mobile communication of interest. There are

several kinds of interest groups, such as "manhattan celebrity watch," "prayer of the

day," "nyc terrorism alert," etc., where members can send text message to other members

in the particular interest groups, and receive text message from other members as well. If

a member of the celebrity watch group spots a celebrity, for example, he/she can send

SMS to notify other members who are interested in seeing the celebrity personally.

Cooperation and Reputation: Smart Mobs Institutions

Indeed, smart mob technologies have enabled people to engage in collective

actions that would be impossible with previous technologies. However, to understand

smart mobs, according to Rheingold (2003b), there is a fundamental question that

prevails in the history of mankind in regards of society construction, namely "How can

competing individuals learn to work cooperatively?" (p. xviii). In this perspective, history

of civilization can be seen as the dynamics to balance self interest and public goods, a

common resource that benefits all members of society. Beside natural common resources

such as fishing ground and pasture-lands, there are man-made common resources such as

the Internet. In both public goods, there are always people who assume the position of

free rider by enjoying or even manipulating the public goods and jeopardizing the

sustainability of the common resource. A social contract as John Locke proposed is

needed to govern the society in which the members of society agree to work together and

form a system to monitor and sanction member's actions, especially the free riders.

Moreover, reputation is very important in the collective action perspective, since

it is the reputation of others that makes one willing to cooperate. Rheingold (2003b)

points out anthropological research showing even the hunting tribes in the savanna of

Tanzania, for example, have a system of reputation where the members of the tribe build

their reputation so that others will be willing to cooperate in the hunting session. The free

riders will ruin their own reputation, and will have difficulty finding cooperation from

others in the hunting session. Therefore, Rheingold asserts that "reputation is the secret

ingredient in cooperation" (p. 128).

Indeed, as Rheingold (2003b) shows, the increasingly efficient communication

technologies bring the chance for the people to cooperate on scales and in ways never

before possible. While the nature of smart mobs in many respects is different from

previous societies, it may need a new kind of social contract and institutions to govern it.

Online reputation systems, then, will be the key of the increasingly growing smart mobs.

Rheingold shows that there has been an early version of "reputation management" developed in cyberspace supporting new forms of broad-based cooperation. The biggest online auction site, eBay, for example, uses sellers and buyers feedback on the transaction they have with each other to build the sellers and buyers reputation. That way, eBay successfully facilitates billion dollar transactions world-wide for people who do not know each other. Meanwhile, Google.com, the leading Internet search engine, uses implicit reputation recognition by searching the web sites that have the most links pointing to them. And automatic collaborative filtering techniques have enabled Amazon.com to make suggestions on books and records bought by other people who have bought the similar products. According to Rheingold, these early online reputation systems have met most of the conditions to be evolved as smart mob infrastructure.

The Dark Sides of Smart Mob

Rheingold always spends the last chapter of his book commenting on the possible dark side of the society enabled by the technology he has described throughout the book. For Rheingold (2003b), critical perspective is important because "uncritical acceptance puts us at risk of hypnotizing ourselves with the assistance of the technology we're attempting to evaluate" (p. 184). However, despite the awareness of potential threats of smart mob technologies, Rheingold embraces the optimism of the future of smart mob because "we can understand how smart mob technologies could threaten us and how they could benefit us" (p. 185). With this understanding, Rheingold believes that in general the technologies will benefit society, and understanding of the threats will lead the society to avoid them.

Rheingold (2003b) argues that the first threat is that smart mob technologies endanger the liberty of society. Ubicomp opens the possibility of ubiquitous surveillance as well. Since smart mob technologies are able to sense and communicate, and to offer a lot of convenience in the era of consumerism, it is possible that consumers are willing to trade a certain portion of their privacy to exchange. Information associated with users or wearers collected from the smart mobs technologies could be used for the future convenience and product tailoring of the respective consumers. On the other hand, the same information could be used also to intrude into the privacy of the consumers by bombarding them with information and offers. Indeed, instead of repressive and cruel Orwellian Big Brother of secret police, it is the merchants who have the most sophisticated privacy intrusion.

The second threat, according to Rheingold (2003b), is whether an always-online and hyper-connected environment will degrade, instead of elevate, the quality of life, especially in regards to interpersonal relationships, individuals time experiences, and the dynamics of public spaces. Rheingold quotes a study showing that there is no difference between people's cognitive, emotional, and behavioral responses of people to artificial representation of humans (such as video image, emails, etc.) and the reactions to real people. This raises the question of whether smart technologies that lead people to confuse machines with humans will encourage people to be friendlier, more trusting, and more ready to cooperate with one another. The way people experience time will change with the growth of smart mob technologies. Mobile telephony and SMS has encouraged people to fill all the time they have, even leisure time, and thus "eliminating the positive

aspects of lost time that could be filled up with reflection, possible adventures, observing events, reducing the uniformity of our existence, and so on"' (p. 193). In addition to that, public space created by smart mobs technologies could be occupied by hyper-realism of Baudrillard's simulacra, image and symbols bombardment, constantly exposing advertisement, spam messages, etc. Therefore, instead of building a "healthy" public space, nurturing democracy and civic engagement, smart mob technologies could be a new apparatus of hyper-consumerism society.

The third threat posed by smart mobs is about the degradation of human dignity. Rheingold (2003b) traces the criticism that technology has a dehumanizing effect to the work of Jacques Ellul (1954) who asserted that humanity had been too dependent on technology so that they can not resist relentless quantification and mechanization of every aspect of human life, including the effort to quantify thought and emotion. Meanwhile, Lewis Mumford (1967) argued that, instead of the visible machine, the most dehumanizing was the treatment of humans as just components in the larger society. Ellul and Mumford's questions will remain in the smart mob era, when wearable computers can be implanted on the body and invade human organs as well as nervous system. In the end, this development might lead humans away from humanity into a world where humans "become fine-tuned down to DNA as components in ever consuming, ever expanding, profit-generating machinery" (Rheingold, 2003b, p. 201).

The Skeptic: From the Cuckoo's Egg to the High-Tech Heretic

Not only does the introduction and advancement of new technology of any kind bring hopes and utopian dreams, it also ignites criticisms and even strong resistance. The most cited example is, of course, the Luddites movement, when artisans and peasants at the end of the eighteenth century England were victims of progress raided and destroyed cotton mills during the night time. Although many studies show (Sale, 1995) that instead of technological one, the Luddites real grievances were mainly a moral one. They were questioning the justice and fairness the underlying assumptions of the new political economy and the legitimacy of the principles of pursuing profits. Unfortunately, Luddism is always associated with resistance and anti attitude to the technology.

The Internet and cyberspace, unsurprisingly, have their own rebels and resistance. In 1995 alone, just when the Internet started being embraced by the general public, some critical books anticipating negative effects of cyberspace were published. Slouka (1995), for example, contends that cyberspace has blurred the boundary between reality and unreality, shaken the coherence of identity, place, and community. Meanwhile, Talbott (1995) takes more ambitious project by expounding his hesitancy to cyberspace by discussing the relationship between man, computer and community, computer in education, the nature of electronic media, and the degradation of the human spirit as the result of technological advance. Brook and Boal (1995) compile many authors and scholars who blend their criticism with softened optimism to the new technology and its role in the society.

However, among these authors, Stoll (1989, 1996) is particularly interesting. Once well-known as a computer security expert and deeply involved in using computers and networks, he converts to be the harsh critic. Unlike other authors, Stoll has some credibility among the Internet and computer proponent, since he has a high reputation among them—especially after his success in defeating a German hacker who intruded into many U.S. military computer networks. Based on the story of his battle against the hacker, he published his first book, *The Cuckoo's Egg* (1989), which became a national bestseller. His second book, *Silicon Snake Oil* (1996a), however, is a very different one— he hurls every optimistic claim of the Internet. A high-tech contrarian was born, and since then he has been one of the fiercest critics. Considering his background, Stoll's thoughts on the Internet, computer culture, and society are worth paying attention to.

Background

Stoll has been acquainted with computing since he was a freshman at Hutchinson Technical High School in Buffalo, New York, in the mid 1960s, when he developed a computer program using assembler and machine language. After graduating from the high school, Stoll enrolled at the University of Buffalo and graduated in 1973 with an astronomy degree. Then he went to University of Arizona for his graduate study in astronomy, where he earned his Ph.D. in astronomy (Staples, 2002). Stoll's research utilized computers heavily, since his dissertation was about computer modeling of the upper atmosphere of Jupiter, using a few images of Pioneer spacecraft (Stoll, 1996a). Post-doctoral studies at the Keck Observatory, Lawrence Berkeley Laboratory, Berkeley

University, was his next stop, where his assignment was designing telescope optics.

When his grant money came to an end, he was transferred to the computer center of the

laboratory as the system manager (Stoll, 1989a, 1989b). Little did he know that in the

next two years would make him more well-known as a computer security expert rather

than an astronomer.

And everything started with a 75 cent discrepancy on the computer center

accounting he was asked to investigate on the second day of at work (Stoll, 1989). It

turned out later that a German hacker had planted a computer program, Stoll called it

"cuckoo's egg," that provide the hacker entry to the military and strategic computer

networks. The hacker would sell the files from the intruded networks to the KGB. In

almost a year, Stoll strived to trail, document, and figure out every intrusion of the

hacker. He began hesitantly because they had not considered the seriousness of the

attack, later CIA, FBI, and NSA joined with Stoll in the investigation. Stoll then wrote

the story in a suspense-style novel in *The Cuckoo's Egg, Tracking a Spy through the*

Maze of Computer Espionage (1989), which was on *The New York Times* bestseller list

for more than four months ("Bestseller," 1990). Since then, Stoll was a famous person

and known more as a computer security expert than an astronomer, and frequently cited

or interviewed as such on these issues for the following years (for example in Markoff

1988b, 1988c, 1988d, 1989; and in Thompson, 2003). Later, he signed a deal to be a

commentator for an MSNBC technology show, and even appeared as a guest on

Politically Incorrect, a satirical talk show hosted by Bill Maher (Staples, 2002).

For many years after *The Cuckoo's Egg* publication, Stoll painstakingly answered the piles of emails from fans—some which needed hours to respond, curtailing his personal time. His marriage ended in 1990, although he got married with another women who gave birth to their baby in 1995 (Staples, 2002). Apparently, Stoll's turning point happened sometime in 1994, when he was vacationing with his friends at a Connecticut farm. He was engrossed in replying to emails coming from around the world—detached from his surroundings. "I see my reflection in the screen and chill runs down my spine. Even on vacation, I can't escape the computer networks. I take a deep breath and pull the plug," writes Stoll (1996a, p. 1) on the decisive moment. Two days later, he gave John Brockman, his agent who was also on the vacation, the first two chapters inspired by these moment which later became *Silicon Snake Oil, Second Thought on the Information Superhighway,* published for the first time in 1995 (Brockman, 1996).

  Silicon Oil is Stoll's first books in which he skeptically and critically responds to the pervasiveness of the computer and the Internet use in every corner of modern life. Despite the fact that the book is written in an anecdotal style, unarguably Stoll's reputation has made this book could not be regarded as a work of an ignorant computer-Luddite. Bill Gates of Microsoft, for example, comments on Stoll that "There is certainly a need . . . to have someone who can take the opposing viewpoint. . . . I think he's done very well positioning himself as the devil's advocate" (Brockman, 1996, p. 277). For Howard Rheingold, a person such as Stoll is a necessary, since "We need criticism that can discriminate the good from the bad points of new technologies, not a meat-ax approach" (Brockman, 1996, p. 284). And according to Michio Kaku (1998), "Perhaps

the most consistent critic of the Internet is computer expert Clifford Stoll, author of antimanifesto *The Silicon Snake Oil*" (p. 50). Stoll (1999) himself feels legitimized to launch his censures, and self-proclaimed as a licensed propeller head: an astronomer, reputable computer security expert, and Internet user since its nascent.

In his third book, *High-Tech Heretic, Why Computers Don't belong in the Classroom and Other Reflections by a Computer Contrarian* (1999), Stoll reiterates his criticism to the culture that sanctifies the computers. Stoll is saddened "by a blind faith the technology will deliver a cornucopia of futuristic goodies without extracting payment in kind" (p. xi). Stoll devotes half of this book to discuss critically the utilization of computers and the Internet in the classroom and education system. Moreover, unlike his previous book, in this book Stoll supports his arguments by quoting more relevant research to convince his readers.

Stoll (1999) keeps asserting that he is not anti-technology, or a Luddite, "I'm critical of computing, but I'm not down in technology" (p. xi). Stoll calls himself a literate Luddite, and asserts that technology, like food, can not be gotten rid of since it surrounds us (Stpales, 2002). He sees his role as offering some skepticism into "utopian dreams of a digital wonderland" (1999, p. xii). By offering his skepticism, Stoll assures that he does not mean to give an unwelcome reception to the role of the computer in society. Rather, he is ready for the time when the Internet is much more ubiquitous, reaching and connecting every town and even trailer park. However, for Stoll, the Internet is being oversold, and there is a lot of over-hype and yet so little critical discussion of the implications of an online world (1996a). Stoll (1999) admits that he also

aims his skepticism to himself, so that he often feels completely ambivalent toward the technology. Stoll (1996a) even opens his *Silicon Snake Oil* with first chapter on this ambivalence, juxtaposing his deep involvement with the Internet since the ARPANET and his love of his networked community with his enmity to the over-promise and over-hype of the Internet. Furthermore, Stoll (1999) clarifies that,

> I yearn for a wider discussion over the claims and promises of computing. . . . This isn't anti-technology manifesto. I own a bunch of computers and regularly log on. I don't intend to heave my CPU out the window or to live in a cave. . . . My skepticism grows from a love for computing, from a wish to make our technological world better suited for people, rather than people better suited for machines. (p. xiii)

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False Promise of Over-hyped Internet

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With the publication of *Silicon Snake Oil* (1996), Stoll launches his attacks on the many promises that the Internet makes. He contends apprehends that the promises have been accepted uncritically, creating a lot of excitement but little reflection. Stoll worries that Internet hyperbole and over-promotion, and computing in general, has led to the creation of absurd predictions and overblown expectations (1999). The media and journalists reinforce this euphoria by exhibiting laudatory and flattering articles, news, and shows. For Stoll (1996), "Over-promoted, the small, intimate benefits of the Internet are being destroyed by their own success" (p. 10). Unfortunately, the over-promotion and over-hype is also prevalent among computer professionals and academics, who have been lacking skeptical and critical thinking to the hyperbole and exaggerated promises of the

Internet (Stoll, 1999). There is a misleading technocratic belief that access to information, better communication, and computer programs are the panacea for the existing social problems and will give rise to a better society. Stoll (1996a) disagrees by stating that social problems will not be solved by technology. He states that the most important interactions in life is the interaction between people, not between computers.

Therefore, Stoll (1999) repudiates satirically the grandiose claims made by high-tech prominent figures such as John Perry Barlow, Kevin Kelly, Nicholas Negroponte, and Mitch Kapor. Barlow says that after the discovery of fire, humankind's greatest invention is the internet. He envisions a world without jobs since technology made workers into flexible agents, and the Third World will leapfrog into the promised land of the information economy once they embrace the Internet. Kelly asserts that information will subdue and overwhelm the materials. Negroponte sees that the new generation has freed themselves from geographical limitations as the basis of their personal relationships, so that it will be a new step towards greater world harmony. Kapor imagines that living in cyberspace resembles the Jeffersonian world where individual liberty, commitment to pluralism, diversity, and democracy are highly valued.

Stoll (1996) admits that the Internet is a good place to meet people, where one could find others with similar interests, to develop friendships and build a community. Like in other offline places, some relationships could lead a true relationship and even marriages. However, that is rare, since, by and large, electronic relationships are only a sense of closeness without emotional investment that leads to a true intimate relationship. Instantaneous and delusive electronic contact without physical and real interaction

undermines social relationships. The community evolved in the virtual space is an ersatz neighborhood, an impoverished community where there might be plenty of human contact but no humanity touch. Absent is the sense of location and the intimacy of local history, and "Gone is the very essence of a neighborhood: friendly relations and a sense of being in it together" (1996, p. 43). Proximity and real contact, for Stoll (1996a, 1999), is the requisite for the strong personal relation ties, while the Internet reduces the importance of distance and enables unreal relationships through chat rooms, e-mail, news groups, and web pages.

Stoll (1999) support his argument by quoting some scholarly research, such as that conducted by Kraut et.al. (1998) who found that online activity was followed by increases in depression, loneliness, and declines in social involvement and the size of people's local social networks. Young (1998) shows that 97 percent of Internet users spend more time they initially intended online and many individuals abandon the real world activities as they go deeper into online life. Instead of bringing people together, cyberspace has isolated one from one another. Each time someone logs on, according to Stoll (1996a), it erodes his or her ability to have genuine interaction with real people. Interacting with an online persona, nobody will be completely sure of the real identity, gender, and personality of the counterpart. Additionally, they are represented by more or less the same font, style, and packaging in their interaction. Gone are variance in body gestures, clothing, accent and other specific characteristics.

For Stoll (1996a), it is a continuation of what Putnam (1995) proposed in his famous study on the decline of civic participation in the U.S. in the past fifty years.

Putnam offers some explanation as to what might be the causes, and one of the strongest

is television which robs the time once invested in the community. Worse, according to

Stoll, "Like a powerful drug, the Internet snatches our minds from our homes,

transporting us into nowhere-ville of cyberspace, where time and place have no meaning"

(p.146). Like Goethe's Faust, for Stoll, mankind has surrendered to Mephistopheles

request. While Faust surrenders his immortal soul to obtain knowledge and power,

modern man surrenders his time on earth to the high-tech Mephistopheles for what is

claimed to be the universe of information and power right at the fingertip.

Putting it another way, for Stoll (1996a), "real life and authentic experience much

more than anything the modem can deliver" (p. 235). Throughout his book, Stoll stresses

the importance of real experience and the need for mankind to return on it. Slouka (1995)

advances a similar remedy, and names it essentialism. After elaborating on his criticism

in his entire book that cyberspace has blurred the boundary between the real and the

virtual, assaulted the coherence of identity, dissolved the sense of place, and eroded the

community, Slouka comes to conclusion that cyberspace offers too little yet demands too

much. Slouka, like Stoll, emphasizes the importance of original things and reconnecting

to the essential things. That is, "The things that we can experience directly and for

ourselves, not through the mediating influence of technology" (p. 149). Slouka, however,

assures that there is nothing radical in essentialism, since it does not urge a total rejection

of the cyberspace world. Rather, it constitutes small gestures such as spending more time

to go for a walk with friends and family, getting more personally involved in community

meetings, enjoying the whole morning lying in a hammock, etc. In Stoll's (1996b) words, "touch the octopus; taste the ocean water; hold the beaker" (p. 150).

The promises that the Internet is the ultimate instrument for democracy, for Stoll (1996a), are baseless. Cyber-government, according to the promises, will enable the people to send messages to their representatives and government officials, and receive quick replies from them. The populace will be able to know what is happening in the government institutions and will be able to respond quickly and accordingly. Electronic elections will increase the turn out and make the elections easier, and even enable a referendum on every issue. Since access to the Internet as media is easy, compared to the television and newspaper, public sphere will be more robust. Therefore, the Internet will enhance public involvement in governmental process and public decision making, which is the very essence of democracy.

For Stoll (1996a), the promises are far from reality. First of all, access to the Internet is still a privilege for more affluent groups of society, making electronic democracy unrepresentative. Even worse, among the privileged, few read political statements and pay attention to campaigns. Stoll shows an example the only a couple dozen of people visit a candidate's website, despite being an area where companies such as IBM and Prodigy are located and there is a high penetration of PC in the households. Moreover, the Internet encourages short, simple and concise communication, just as television gives sound bites news, so that it is not the place for reflective and reasoned public debate. Instead of involving the public in the decision making, electronic referendum on every issue will bolster short term oriented public policies since the

politicians always try to please the constituency to stay in power. Long term planning that might need some sacrifices in the beginning likely will not be agreed to by the populace.

The ocean of data and information, according to Stoll (1996b), is not necessarily the better. The Internet surely brings some useful material, but it also brings much more low quality and low credibility materials. Since every user is able to upload his or her information, for Stoll (1996b) the Internet "begins to resemble publishers slush piles" (p. 38). Consequently, it puts the burden of selecting the valuable one out of the ocean of the discardable ones on the user. Indeed, the Internet wastes the users' time by making the users to single out the valuable information from the worthless material coming from the endless flow of messages, instead of saving time by providing fast and valid information (Brockman, 1996). The Internet has no many editorial gate keepers setting set standards of quality and advocating for the readers without whom they would not know what is worth reading (Stoll, 1996a). Hence, the Internet provides the users random and overabundance facts and information yet unchecked and unfiltered.

Furthermore, hypertext documents in the cyberspace will make the users lost in the ocean of data and information. According to Stoll (1996a), by enabling users to jump from one document to other texts, hypertext provides a maze of cross references and makes the users never certain where they are at a moment in time. Hypertext documents, which are heavily used in the World Wide Web, lack coherence, because one cross reference might lead to rich and valuable information while the next reference might lead to worthless information or even broken links. Non-linearity nature of hypertext erodes logic, structure, narration, and reasoning way of thinking (Stoll, 1996a). Moreover, since

the web-site authors never know where a reader will come from, they have to make every

page as if it stands on its own. As a result, in order to catch the readers' attention, the web

has trivialized the texts and thinking process by emphasizing graphics and colors (Stoll,

1999).

On the issue of privacy in the Internet, Stoll (1996a) surprisingly is not worried

too much. Stoll points out that to a large extent people do not hide their data and activities

to the related institutions, such as shopping records in the grocery store, political party

affiliation, ATM cards data, electricity and telephone bills, magazines subscription, etc.

People even let their digital avatar follow them around, or otherwise they could not

access the ATMs and could not shop using their credit card. Separated and not

interconnected, these disclosures are not very threatening for the society. The anxieties

are more or less justified when these data are collected, compared, and consolidated.

Despite the ability of the Internet to compare the data faster, Stoll believes that for the

time being the society is protected due to the deep incompatibilities between different

computers and database systems. Furthermore, database about people, according to Stoll,

are quickly out of date and untrustworthy, so that they are not worth the effort to be

correlated.

Furthermore, Stoll believes that commerce in cyberspace would not be viable

(1996a). E-mail, for Stoll, will not replace handwriting letters since it lacks personal

touch and is boring. Moreover, online shopping denies the atmosphere of visiting the

stores and lacks personal touch; besides the choice will be limited. Above all, business

will not succeed on the Internet because there is no way to send money through the

network. Additionally, people will never be certain whether the transaction is valid and trusted. For Stoll (1996b), "Network authentication software can never give the same sense of trust as a face-to-face business transaction. No computer network with pretty graphics can ever replace the salespeople that make our society work" (p. 21).

Stoll wrote about his anxiety when the internet commerce was in its infancy. Interestingly, his second book, *The HighTech Heretic,* which was published in 1999, does not put forward his criticism in this regard—most probably because instead of failing to utilize the Internet, now there are concerns that Internet is being over-commercialized instead. Lessig (2000), for example, delineates how the Internet has been taken over by business, and therefore lost its initial spirit as a technology for encouraging personal liberty and social justice.

Stoll (1999) argues that there is nothing particularly important on the invention of the Internet, let alone the human greatest invention after the discovery of fire. Nor is the Internet more profoundly important and socially shattering than the late of nineteenth century technologies such the telephone, the phonograph, movies, radio, and the internal combustion engine. Stoll, however, concedes that a utopian view of new technology is prevalent, especially in the nascent phase of the new technology. Most of the promises are never materialized, and for Stoll the Internet hype is not an exception. Stoll shows that the telephone was praised as tool for democracy by newspaper editorials in the 1890s by allowing common people call the president directly. Television, in the 1950s, was seen as a blessing for education since it would bring the best teachers into the remote classrooms and the homes of the poor. Despite the governmental subsidies and grants for

educational programming, television now can not be seen as a good education tool. And once promised that satellite would bring global unity and understanding through worldwide television, Stoll satirically points out that the unity through MTV is what now the world has. In Stoll's view, much of the promises promoted by the proponents of the Internet will be vanishing as time goes along.

Internet, Computers, Classroom and Education

Since *Silicon Snake Oil,* Stoll (1996a) has shown deep apprehension regarding of putting computers in classrooms plus the connection to the Internet as if it is a panacea for the current education problems. Indeed, he devotes part of *High-Tech Heretic* (1999) to discuss these issues. For Stoll, it starts from wrong taken-for-granted assumption that computers and the Internet will be useful for the learning process. Stoll argues that the Internet is mainly a data highway and delivers little valuable information, whereas there is a wide gulf between data and information. Data is bits, numbers, and words, meanwhile information is reliable, timely, useful, more organized, and comes with a pedigree (Stoll, 1996b, 1999). Furthermore, information and knowledge are separated by a wide ocean. Ideas, inventions, and inspirations are in the domain of knowledge, not information, let alone data. Beyond knowledge, according to Stoll (1999), lies wisdom— "a quality that is pursued by all" (p. 186). Since the Internet is mainly a highway of data and provides little useful information, consequently it will not bring knowledge to students. For Stoll (1996b),

> Our networks are awash in data. A little of it's information. A smidgen of this
>
> shows up as knowledge. Combined with ideas, some of that is actually useful.

Mix in experience, context, compassion, discipline, humor, tolerance, and

humility, and perhaps knowledge becomes wisdom. Minds think with ideas, not

information. No amount of data, bandwidth, or processing power can substitute

for inspired thought. (p. 194)

The proponents of the Internet in the classroom claim that the Internet will bring

students from far away places together, make them connected with famous scientists, fine

libraries such as the Library of Congress, and homework online helps. Stoll (1996b)

renounces this claim, and remarks that spending time online is isolating and separates

students from teachers, classmates, and family. No famous scientist will have time to

answer e-mail from distant students unknown to them, since they should be busy with

their academic and research projects as well as writing grant proposals (Stoll 1999).

According to Stoll, students, of course, could virtually visit Library of Congress, but the

lure of online games and MTV's home page which is one click away might be too strong

to be resisted.

Furthermore, Stoll (1996a, 1996b, 1999) believes that relying on the Internet and

computer too much will hinder the process of true and critical thinking of the students.

Equating learning with fun is not right, since learning should take work, commitment,

and responsibility. Prepared and quick answers with graphical games rewards for clicking

the mouse regardless right or wrong answers substitutes for reflection and critical

thinking. Instead, according to Stoll (1999), "Thinking, after all, involves originality,

concentration, and intention. . . . Computing's instant gratification—build into the

learning-is-fun mind-set—encourages intellectual passivity, driven mainly by conditioned

amusement" (p. 13). At this point, Stoll echoes what Roszak (1985) has pointed out that computing and rigid logical line of thinking it encourages undermines the capability of instinctive thinking—a kind of thinking that emphasizes process, concentration, and wholeness.

Real experience also will be lost in education which relies too much in the efficacious of computers and the Internet. Stoll maintains that (1996a) "much of what come across the computer screen is a surrogate for experience. . . . Computer displays only weakly intimate the sounds, sights, smells, tastes, and touches of nature" (p. 149). They are only data or information, and they are not knowledge that should be acquired through real experience and not through electronic and online teaching. Process and discovery are more valuable than preprogrammed answers, Stoll (1996b) calls it the tyranny of the right answer (1996b), in education. Therefore, real interaction between good teachers with enthusiastic students is the most important value in education.

For Stoll, the claim that students need computer skills for their future has no basis. Despite the hype if the information age, for Stoll (2001) the future jobs are likely the same jobs have been available for centuries. There will still be "dentists, truck drivers, surgeons, sales people, . . . movie stars, gardeners, forest rangers, . . . lawyers, and politician" (p. 47). These jobs, however, do not need high capability of computing. Rather, they need social skills that will be neglected whenever students spend their time online and sit in the front of the computers.

CHAPTER III

CYBERSPACE, IDENTITY, AND RELIGIOSITY

Identity: From the Second Self to the Life on the Screen

McLuhan (1962, 1965) recognized the relationship between new technology and identity. For him, any technologies are basically the extension of the human body, senses, nervous system, and even consciousness. In regards to extension of senses, McLuhan (1962) argues that if technology is introduced, either from within or from without, culture gives a new stress to one's sense (such as print technology stresses visual senses over auditory senses in preceding oral culture), therefore the ratio among senses is altered. Consequently, McLuhan (1962) asserts that, "We are of no longer the same, nor do our eyes and other senses remain the same. . . . The result is a break in the ratio among the senses, a kind of loss identity" (p. 23).

According to Davis (1998), media technologies are the interfaces between the self and the world beyond. Once a new media technology is introduced, it creates a new interface between the self, the other, and the world beyond. Davis argues that, "The moment we invent a new significant device for communication—talking drums, papyrus scrolls, printed books, computers, pagers—we partially reconstruct the self and its world, creating new opportunities (and new traps) for thought, perception, and social experience" (p. 4). Furthermore, by creating a new interface, media technologies become part of the self in which they form the foundation for the self to construct the reality.

Hence, in the historical context, the issue of identity in cyberspace is a continuation of what mankind has experienced before. However, needless to say that the

ruptures of identity or psyche caused by new technology surely have their own

characteristics and implications. The Internet, thus, has instigated new ruptures of identity

that may be different from previous ruptures. There are efforts to discuss and elaborate on

the psychological aspects and identity issues caused by the Internet (Gackenbach, 1998;

Stone, 1995; Wallace, 1999). Nevertheless, this section will discuss the works of Sherry

Turkle, a professor of the Massachusetts Institute of Technology, who has done

pioneering studies since the mid 1970s and is still continuing to work on this subject.

Background

Turkle is currently the founder and Director of the MIT (Massachusetts Institute

of Technology) Initiative on Technology and Self, founded in 2001, and supported by the

Mitchell Kapor Foundation. As the name indicates, the Initiative's goal is to:

> . . . create a center for reflection and research on the subjective side of technology
>
> and to raise the level of public discourse on the social and psychological
>
> dimensions of technological change. . . . It focuses on how contemporary
>
> technologies become enmeshed in the formation of human identity. ("MIT,"
>
> 2002)

Obviously, the Initiative is establishing Turkle's reputation in the field, i. e. the

psychological relationship between humans and the technology they create, especially in

regards to computer. She has been pursuing this work for almost three decades, since she

joined with MIT in the mid 1970s. The research topics pursued by the Initiative range

from children, identity, and digital culture to nanotechnology and human identity, from

adolescence, technology, and identity to the relevancy of psychoanalysis in digital culture ("MIT," 2002).

Turkle obtained her Ph.D. in Sociology and Personality Psychology from Harvard University. Her dissertation on the emergence of psychoanalytic culture in France (Turkle, 1978) has given her a strong foundation of psychosocial theories and rigorous sociological investigation methods to analyze the relationship between people and computers. Apart from that, Turkle is also a licensed clinical psychologist, and graduated from Boston Psychoanalytic Institute (Turkle, 1995). Turkle became a faculty member at MIT in 1976, and was impressed by the psychological and philosophical discourse that surrounded computers used by her student and faculty colleagues to describe the machine's process (Borckman, 1996; Turkle, 1984). Turkle noticed that terms associated with human mental functioning were frequently used even in the most technical discussion about computers. As such, the language they used carried an implicit psychology that somehow equalized the processes in computers and in people. Furthermore, Turkle was intrigued that computational metaphors were used by her colleagues and students at MIT in thinking and discussing about politics, education, social process, and about the self. For Turkle, this phenomenon was very similar with her research project for her PhD on how psychoanalytic terminologies were widely used in France in the late 1960s, although it was traditionally hostile to psychoanalytic ideas. At that time, psychoanalytic language was used in the rhetoric of political parties, training programs for schoolteachers, even love advice in newspaper columns (Turkle, 1984).

This phenomenon inspired her to do more research, which she then published in *The Second Self* (1984), where she explored the impact of the personal computer on the way people learn and think, and how the computer influence the psychological characteristics of people. Central to her argument is that, as indicated by the title of the book, people interact with computers where the computer "can act as a projection of the self, a mirror of the mind" (1984, p. 15). Turkle's research methodology is ethnographic. She participated, when possible, in her informants' lives and rituals, and interviewed more than four hundred people, about half of them children and half of them adults.

Thus far, Turkle had been concentrating on the one-to-one relationship between stand alone computers and people. However, she turned her attention to how computer-mediated communication, especially that enabled by the Internet which became popular in the late 1980s, has led to the changing of basic human concepts of identity, life, and intelligence. For Turkle, one-on-one, a person alone with a machine, identity transformation has been replaced by another transformation enabled by Internet. In pursuing her research, Turkle (1995) uses ethnographic and clinical observation involving roughly a thousand informants, almost three hundred of them children. Besides interviewing people, Turkle herself was involved in some Multi User Dungeon (MUDs) and Internet Relay Chats (IRCs) to support her research. Her research was published in *Life on the Screen* (1995)*,* which is like *The Second Self* (1984)*,* enriched by interesting case studies and remarkable quotations from her informants. In the following years, some parts of *Life on the Screen* were reprinted in several anthology books and journals (for

example see Turkle, 1996a, 1996b, 1997a, 1997b, 1999), indicating that Turkle's work had been accepted as one of the most important pieces in the field.

Turkle's interests, however, also extends to other objects such as humanoid robots, robotic dolls and pets, and games that simulate people, creatures, and society. Turkle (2001) for example has conducted research on virtual pets Tamagotchi and robotic dolls Furbies to understand how children develop their relationship with the non-biological objects. Although study in how children ascribe personality and emotion to toys is not new, for Turkle "sort alive" virtual pets and dolls are entirely different from the previous toys so that further careful research is needed (Hafner, 2000).

Turkle sees the online multiple identities issue as a part of larger context of relationships between humans and what she calls evocative objects (2002b), relational artifacts or sociable technologies (2002a). Beside Internet and online multiple identities, some other examples of evocative objects are wearable computers, "companion species" such as "live" virtual pets and digital creatures that are specially designed with emotion simulations to interact with people, and "affective computing" in which computers are programmed to reckon their users' emotional condition and respond with their own emotional condition accordingly. Consequently, these evocative objects have compelled us to see the world and ourselves differently, so that Turkle (2002b) asserts, "[The evocative objects] demand a depth psychology of our relationship with them. The computer culture needs psychoanalytic understanding to adequately confront our evolving relationships with a new world of objects."

Turkle (2002a) believes that these new world objects will enhance human emotional and cognitive performance. On one hand, it will provide humans more satisfying relationships with their machines. On the other hand, it also potentially invigorates people's relationships with each other, because "in order to build better sociable objects they will have learned more what makes them social with each other" (p. 157).

Together with numerous articles in scholarly journals and anthology books, Turkle has positioned herself to be one of the most authoritative scholars in her field. For example, she has been named as one of the Top Ten Wired Women by ABC News.com in 2002, one of *Time* magazine's Innovator of the Internet in 2000, one of the 50 most influential people to watch in cyberspace in 1995, and she appeared on the cover of the April 1996 issue of *Wired* magazine.

Computers and the Second Self

In order to understand Turkle's perspectives about issues of self and identity in the Internet, one should first look into her views on the nature of relations between individual people with computers. Indeed, this is Turkle's starting point to explain identity issues in the Internet and the relationships between people and machine in general (computers, pets, dolls, etc). Besides, Turkle has consistently applied the subjective dimension approach in her later studies, after using it for the first time in the early 1980s to describe the relationships between people and computer. Turkle expounds her perspective on these issues in *The Second Self* (1985).

First of all, Turkle does not see computers as rational and constrained by the logical "analytical engine" which helps in information processing for work, education, or entertainment purposes. Instead, Turkle (1985) looks at the computers "in terms of its 'second nature' as an evocative objects, an object that fascinates, disturbs equanimity, and precipitates thought" (p. 13). More than a machine that helps and supports us, the computer affects the way that we think, especially the way we think about ourselves: about life, intelligence, and identity. According to Turkle, "The computer is a 'metaphysical machine,' a 'psychological machine,' not just because it might be said to have a psychology, but because it influences how we think about our own" (p. 16). For Turkle, the urge to think about ourselves is the most important cultural effect of the computer presence.

Turkle (1985) asserts that we shall acknowledge the great diversity of relationships between machine and people, and reject the stereotypes that there is only one type of people and computer encounter—"stereotypes built from images of workers following the rhythm of a computer machine or children sitting at computers that administer math problems for drill" (pp. 14-15). Although the personal computer had not been widely used in daily life in 1980s, Turkle was confident that computers would become commonplace objects in daily life in leisure and learning as well as in work. Hence, "Everyone will have the opportunity to interact with them in ways where the machine can act as a projection of part of the self, a mirror of the mind" (p. 15). Unlike the previous technologies, the computer presences in the people's lives foster new forms of intimacy and a new model of mind as machine.

Turkle (1985) then explores how computers enter into the process of growing up, the culture of hackers, and the impact of artificial intelligence. Using the perspective of developmental psychology, i. e. metaphysical, mastery, and identity stages, Turkle explicates the relations between children and computers. The youngest children, about four to eight years old are concerned with metaphysical questions: causality, life, death, and consciousness. Questions about where things come from, whether things they see are alive or not, are commonly asked by children at this age. By conducting an ethnographic study of over two hundred computer using children, Turkle concludes that they define life on the basis of psychological characteristics, rather than other ways such as motion (thing are alive because they move), growth (things are alive because they grow), and other life activities such as breathing, metabolism, and even intellect. Emotion is the defining characteristic to be alive and human rather than anything else.

Although metaphysical questions continue at the age about eight to ten years old, they are less pressing. Instead, children are preoccupied by the need to master what they can do with computers. Turkle (1985) asserts that children at this stage are dominated by action, not reflection. Challenges such as beating a game and producing astonishing visual effect are what children look for in their relations with computers. Especially in computer games, children begin to experience a kind of second self. Computer games encourage children to identify him or herself with characters from science fiction, war stories, or any characters created by the programmers, and therefore acquire an alternative state of self.

When children get older, there is a return to reflection. However, instead of metaphysical, Turkle (1985) points out that the reflection is insistently about the self. In Turkle's words, "The question of the first stage, What is this machine, and of the second, What can I do with it?, give way to Who am I?" (p. 138). Assertion or searching for identity becomes clear and demanding among these young people, when they are trying to fit themselves into increasingly complex social relationships. Experiments—such as in clothing, youth subculture, music, etc.—are carried on by the adolescence to construct their sense of identity.

In a larger context, computers have challenged ideas about what it is to be human, because they on the border line between mind and not-mind, between life and not-life. According to Turkle (1985), such challenges are not entirely new in history. When Copernicus declared that the Earth was not the center of the universe, the status of humankind was reduced from the center of creation to be an occupant of small tiny planet in the vastness of space. Darwin's assertion that humans are descended from animals, undoubtedly, degraded the status of humans. However, each challenge is followed by reassertion to regain human privileges. In the wake of Copernicus, we recenter ourselves as the intellectuals, not the physical being, of the universe. And we may be kin to the animals, but we are the perfect result of the evolutionary process. As the response to the computer, according to Turkle "We are distinguished from the machines by love and affection, by spiritual urges and sensual ones, by the excitement that attaches to heroism, and by the warmth and familiarity of domesticity" (p. 311).

Identity and the Life on the Screen

In the relationship with the technologies, according to Turkle (1995) there is a complex internal tension in the human mind and culture between acceptance and rejection of analogies to "the machine." On the one hand, people urge that they are different from machines because they have emotions, bodies, and intellect. Regardless of the sophistication of machines, these qualities will never be able to be captured by the machines. On the other hand, there is a tendency for people to play and interact with computer programs by treating them as if they have alive or almost-alive qualities. For Turkle, "Images of machines have ever come closer to images of people, as images of people have ever come closer to images of machines" (p. 177). People are now describing their political, economic, and daily life and thinking in a language that is resonant with a certain form of machine metaphor. In regards of self and identity, Turkle states that "new images of multiplicity, heterogeneity, flexibility, and fragmentation dominate current thinking about human identity" (p. 178).

The metaphor that computers are the second self has been used to describe the identity transforming caused by the relationship of a person alone with a machine. Nowadays, identity transforming is facilitated by the Internet, where users are connected by system of computer networks. For Turkle (1995)

> In the story of constructing identity in the culture of simulation, experiences on the Internet figure prominently, but these experiences can only be understood as a part of a larger context. That context is the story of the eroding boundaries between the real and the virtual, the animate and inanimate, the unitary and the

multiple self which is occurring both in advanced scientific fields of research and in the patterns of everyday life. From scientists trying to create artificial life to children "morphing" through a series of virtual personae, we shall see evidence of fundamental shifts in the way we create and experience human identity. But it is on the Internet that our confrontations with technology as it collides with our sense of human identity are fresh, even raw. In the real-time communities of cyberspace, we are dwellers on the threshold between the real and virtual, unsure of our footing, inventing ourselves as we go along. (p. 10)

While people are increasingly intertwined with technology and with each other via technology, the conventional distance between the technologies and people has become more difficult to maintain, "Are we living life *on* the screen or life *in* the screen?" (p. 21).

Turkle (1995) argues that computers and the Internet are clearly a postmodern phenomenon, which is characterized by such terms as "decentered," "fluid," "nonlinear," and "opaque." This is contrary to the idea of modernism that has dominated the world view of the West since the Enlightenment, which is characterized by such terms as "linear," "logical," and "hierarchical." In postmodern ideas, for example, identity is no longer viewed as unitary and autonomous, but it could be decentered, multiple, and fluid.

First of all, this phenomenon is indicated by the way the interface is used for human-machine relations (Turkle, 1995). In the 1980s, there were two competing interface styles of operating systems, representing the collision of modernism and postmodernism aesthetics. Modernism camp was represented by IBM personal computers (and its clones) with its traditional operating system which is heavily based on linearity,

textual commands, and rules that are laid down in advance. In this perspective, the computer was seen as an extension of mechanical tools to help people to accomplish their tasks—computer in the culture of calculation. Users need to memorize the commands or consult the manual in order to work with such an operating system.

The postmodernism approach was represented by Macintosh which was introduced in 1982. Unlike IBM operating system, Macintosh users did not rely on textual-linear-logical commands to operate the computer. Instead, the graphical icons (thrash, folders, scissors, etc) represented commands and the mouse would help users navigate their way through information as they would through space. Rather than support the aesthetics of calculation and rationality as the IBM operating system did, Macintosh encouraged play, tinkering, and simulation—computer in the culture of simulation. For Turkle (1995, p. 35), "With the Macintosh, exploration was the rule." With the introduction of Microsoft Windows in 1985, where it adopted an iconic style of Macintosh's, the postmodern aesthetic of computer interfaces has been the standard approach ever since—indicating the acceptance of postmodern culture in the computation world. Turkle asserts that many new computer aesthetics are similar with the characteristics of postmodernism described by well known theorist Fredric Jameson, i. e. "precedence of surface over depth, of simulation over the 'real,' of play over seriousness" (p. 44).

Today, according to Turkle (1995) computer culture has shifted from predominantly programming as it used to be in the early development of computer technology to the manipulation of simulation. Programming skill, absolutely, is still

taught in schools for computer professionals, but for the rest of computer users the skill is not required. General users are more likely to think of computers "as fluid simulation surfaces for writing and game playing than as rigid machines to program. Or they are likely to think of computers as gateways to communication" (p. 60). Instead of delving themselves into an instruction manual before using the computer or playing a game, users are invited to learn by playful exploration. At this point, Turkle argues that the process of theoretical tinkering resembles what the French anthropologist Claude Levi-Strauss referred to as bricolage, in which individuals and cultures use the objects around them to acquire and grasp knowledge. As the computer culture becomes more deeply rooted in the society and more widely embraced, the computer will become the gate for individuals and culture to appropriate knowledge, ideas, and the way to look the world. In regards to the World Wide Web, Turkle points out that "bricoleurs are comfortable with exploring the Internet through the World Wide Web. Exploring the Web is a process of trying one thing, then another, of making connections, of bringing disparate elements together. It is an exercise in bricolage" (p. 61).

Beside the postmodern interface, pets, dolls, and artificial intelligence, the Internet is one avenue where postmodernism is experienced by the users (Turkle, 1995). By enabling construction and reconstruction of self, the Internet has become a social laboratory for people to experience multiple identities that characterize postmodern life. For Turkle it has contributed to thinking about identity as multiplicity, and joined psychoanalytic and poststructuralism to the postmodern effort to characterize identity not as a permanent structure in the mind but as a conversational and discourse domain

instead. Sigmund Freud's psychoanalytic theory proposes a decentered view of the self

(Ego, Superego, and Id), meanwhile Jacques Lacan's poststructuralism asserts more

radical decentered ego since "the complex chains of associations that constitute meaning

for each individual lead to no final endpoint or core self" (p. 178).

Turkle (1995) spends a considerable portion of her book explaining the

multiplicity of identity by discussing MUDs (Multi-User Dungoens), where computer

users join in virtual spaces to play and interact with each other. In the MUDs, players are

represented by text or graphical icons with the identity characters (sex, personality,

physical traits, preferences, etc.) of their own choice which are generally different from

their true identity. Thus, not only do the players create the game, they also "create" and

construct themselves. In this sense, the anonymity of MUDs has given people the chance

to explore and play their multiple and sometimes unexpressed identity that otherwise they

can not reveal. Therefore, Turkle argues that, "MUDs are evocative objects for thinking

about human identity and, more generally, about a set of ideas that have come to be

known as 'postmodernism'" (p. 17).

Turkle (1995) stresses that although traditional and face-to-face role playing

games also give chances for the players to change and experience other identities, MUDs

have more profound impact on identities. While in face-to-face role playing the players

assume alternative identities temporarily and in a relatively short time, MUDs offer the

possibility of parallel identities for a character or characters. Much of the excitement of

being involved in MUD is having personal relationships with other MUD fellows, so that

MUD players tend to spend more time online in single log-on. Furthermore, the player

needs to be involved longer, months or even years, in order to maintain those relationships. The routine of playing MUDs becomes part of their daily and real lives, along with the identities they create in each MUD in which they are involved.

Consequently, addiction is a common issue in the discourse about MUDs. However, without rejecting that MUDs indeed might lead to player addiction, Turkle (1995) points out that MUDs could be the place where people find therapeutic environment. Turkle points out that freedom to create any characters in the MUDs encourages some people to use the alternative characters to heal their problems in real life. One player, for example, assumes a character of a good father that he wants his father to be, while in the real life he is ashamed of his abusive and drunken father. The admiration he gains from his MUD fellows makes his MUD experience satisfying and healthy. Choosing different genders in MUDs also could be helpful to develop preferred characters to be implemented in real life. In other cases, players can express their problems, anger, and personal problems freely covered by the anonymity of MUDs. Turkle argues that MUDs, then, could be something in psychotherapy called the ventilation model, where people will become better when they can find a safe place to express their deep feelings. Therefore, some MUDsplayers sense the possibilities for self-discovery, and even self-transformation.

For Turkle (1995), MUDs also might provide its players with what the psychoanalyst Erik Erikson called a psychosocial moratorium. According to Erikson, as quoted by Turkle, adolescent moratorium is a time where the adolescence is relatively tolerated to try new things for them in order to facilitate the development of a core self or

identity. Erikson's idea was developed in the late 1950s and early 1960s to describe the

college years at that time. Today the adolescents grow in quite a different environment

where college students are overwhelmed by the requirements to be ready to compete in

the workplace, and AIDS has made sexual experimentation more dangerous than it used

to be. Therefore, according to Turkle, MUDs and other forms of virtual community, to a

certain extent, has become an alternative for the moratorium of present-day adolescence.

Indeed, not only for the adolescent, MUDs even provide a moratorium for adults by

allowing them to play and step sideward to another reality, similar to vacations that

provide them the opportunity to escape for a while from work and other social habitual

lives.

The metaphor of windows used in a computer interface which enables users to

open several applications at the same time and also encourages the multiplicity of identity

(Turkle 2002b). Motivated by the desire to urge people to work more efficiently by

opening some applications at the same time, windows also became "a potent metaphor

for thinking about the self as a multiple, distributed, 'time sharing' system." The

metaphor is even more powerful if the users open several windows when they are

communicating online in which each window is used for different purposes or different

personae in several MUDs in the same time.

Despite the multiplicity of the self, however, one needs a kind of integration of

the multiple self. For Turkle (1995 p. 258), "Without any principle of coherence, the self

spins off in all directions. Multiplicity is not viable if it means shifting among

personalities that cannot communicate." Flexible but integrated self would be the

postmodern middle path between the extremes of the unitary self as imagined in the past to be what self should be and what to be known as multiple personality disorder. The main characteristic of the flexible self, for Turkle, is that the communication lines between the various aspects of the self are always open. In turn, the open communication will nourish the respect for diversity of selves within one's self as well as the many within others. At the same time, respecting and knowing this diversity will lead to the understanding of one's limitations that nobody can know things completely, both outside worlds and inside one's self.

Turkle, however, alerts her reader to be cautious in embracing the online world. There is a possibility that people will be imprisoned by the screens, when they spend much more time and are too immersed in the more seductive and compelling image than the real life around them. To conclude, Turkle (1995) emphasizes that:

> People can get lost in virtual worlds. Some are tempted to think of life in cyberspace as insignificant, as escape or meaningless diversion. It is not. Our experiences there are serious play. We belittle them at our risk. We must understand the dynamics of virtual experience both to foresee who might be in danger and to put these experiences to best use. Without a deep understanding of the many selves that we express in the virtual we cannot use our experiences there to enrich the real. If we cultivate our awareness of what stands behind our screen personae, we are more likely to succeed in using virtual experience for personal transformation. (pp. 268-269)

Cyber-Spirituality:

The Latest Expression of Eternal Yearnings of Human Soul?

In the predominantly secular and rational modern society, technology and religion are seen as two different domains that represent separate and different, if not opposite, worldviews. It is generally believed that between the spirit and the machine lays an unbridgeable gulf. The modern world with its technological advancements is perceived to be built on the foundation of rationality and a worldly approach, at the expense of religions' spiritual and esoteric approach .While modern science and technology belong to the future, religion seemingly is a domain of the past.

This general assumption has been challenged by some scholars who point out that the gulf is not unbridgeable. In fact, the two are closely connected and have many things in common. According to Noble (1997), a scholar of the history of technology, religion and technology do not depict successive stages of human development, and are neither opposites nor complements. He resolutely states that technological enterprises, in the course of history, are essentially a religious endeavor. According to Noble,

Although today's technologists, in their sober pursuit of utility, power, and profit, seem to set society's standard for rationality, they are driven by instant dreams, spiritual yearnings for spiritual redemption. However dazzling and daunting their display if worldly wisdom, there true inspiration lies elsewhere, in an enduring, other-worldly quest for transcendence and salvation. (p. 3)

When discussing the relationship between spirituality and the information age, Davis (1998) expresses the same tone. According to Davis, metaphysical yearnings never

disappear in the development of modern society. If they can not be seen easily on the surface, they disguise themselves and go clandestinely to infiltrate the cultural, psychological, and mythological motivations of the modern world. He asserts that,

> Regardless of how secular this ultramodern condition appears, the velocity and mutability of the times invokes a certain supernatural quality that must be seen, at least in part, through the lenses of religious thought and the fantastic storehouse of archetypal imagination. (p. 1)

Against that background, this section will discuss cyberspace in religious and spiritual perspectives. However, unlike another sections of this thesis, this part will not discuss elaborately the works of one author at least for two reasons. First, it is difficult to pinpoint an author that can be seen as the leading representative of the discourse on the cyberspace and spirituality who has developed his or her notion in a longer period of time. Some authors (for example Brasher, 2000; Cobb, 1998; Davis, 1998; Zaleski, 1997) have written a book on this subject, but otherwise do not have other relevant significant work. Second, the approaches to this topic are much more diverse compared to the previous section of this thesis. In the discussion of optimistic views, skeptic views, and self and identity on the Internet, an author can be comfortably chosen because of his or her reputation and authority, proven by, among other things, a long track record of interest on the respective subject. To a certain extent, the different approaches or notions of other authors' work can be regarded as some variation of the main idea developed by the authors discussed in each section. Therefore, this section will discuss some topics related to cyberspace and spirituality that are discussed by one or more authors to

understand the diversity of the approaches that have been used. Before that, nevertheless, the arguments that religion and technology are closely related since from the beginning will be discussed as well.

The Divinity and the Technology: Historical Context

According to David Noble (1997), modern technology and religion have never been far separated. Despite the argument that religions are indispensable complements of technology because they provide spiritual sustenance for the dry and rational modern technology having some truth, it ignores that the relationship between the two is much deeper. For Noble (1997, pp. 4-5), "[They] are neither complements nor opposites, nor do they represent succeeding stages of human development. They are merged, and always have been, the technological enterprise being, at the same time, an essentially religious endeavor." Literally and historically, technology and religion have co-evolved together so that the religious belief has always permeated the human technological endeavor.

In the first millennium of Christianity, however, technology or useful arts, as it used to be called, was seen as separated from the religion. In fact, according to Noble (1997), the Church elite look down upon the useful arts, despite that Christ and Paul had been artisans and many of their first followers had come from the labor class. The Church regarded that the useful arts only existed for mankind in its fallen state and they did not have any value as a means of redemption. Humans could not recover their lost perfection due to the Fall through technology, since it could be recovered only by the grace of God.

The relationship of the two began to change in the beginning of the Middle Ages, when technology was seen both as the sign of lost perfection and the possibility of

renewed perfection (Noble, 1997). Technology began to be considered as evidence of the grace of God and as a means of preparation for salvation. The relationship grew stronger after the idea of millenarianism was introduced in the middle of the twelfth century to the teachings of Christianity. The hopes inspired by millenarianism of a new earthly paradise would come before the end of the world encouraged human to pursue perfection in the world. The recovery of the perfection now became a religious project by using any means, including technology. Cathedral buildings, one of the most advanced technological achievements in the 13th century, were undoubtedly driven by religious motives to a certain extent to create a worldly New Jerusalem. The improvement of technical skills in building the cathedrals was certainly not to merely improve the human condition, but to perfect the ability to create a worldly heaven. The worldwide conversion as a precondition of the coming of the millennium encouraged exploration, such as that of Columbus, that in turn advanced the necessary technologies, such as metallurgy, shipbuilding, and weaponry.

Noble (1997) asserts that the spirit of spirituality and salvation was alive well in the progress of the early modern science and technology. Despite his emphasis on utilitarianism and empiricism, for example, the efforts of Francis Bacon were transcendent in essence. For Noble, Bacon's utopian work *The New Atlantis* was not a fantasy, but a foresight of a time when God and man would become co-creators again. Meanwhile, born on Christmas Day and believing himself to be a messiah, Newton was an ardent millenarian. He wrote a treatise speculating what the Kingdom of Heaven and the millennium would be, and privately calculated the time of the second coming. Charles

Babbage, the pioneer of computation after inventing mechanical calculating-machine, asserted that his Calculating Engine was an example of a miracle.

Spiritual and religious themes continue to drive the progress of science and technology until our modern day. According Noble (1997, p. 104), "Masked by a secular vocabulary and now largely unconscious, the old religious themes nevertheless continued subtly to inform Western projects and perceptions." Noble discusses four technologies in which spiritual and religious symbols and expressions are frequently used, such as in the atomic weapon, space exploration, artificial intelligence, and genetic engineering. When Robert Oppenheimer, the leader of the Manhattan Project which built the atomic-bomb, for example, gave the name Trinity to the site of atomic bomb and the test site, he was inspired by a poem that a Resurrection would come after the death. Once used to be perceived where the Heaven was, space and its exploration invoke many religious and spiritual expressions. NASA staff and astronauts give ample examples through their gestures, expressions, and metaphors.

The Metaphysics of Cyberspace

Apparently, cyberspace is more than a breakthrough in computer interface design or in electronic media. It has philosophical roots that can be traced back even to the mysticism of the mathematician Pythagoras, the ancient idealism of Plato, and the metaphysics of Leibniz.

Wertheim (1999) argues that Pythagoras formulated a dualistic philosophy that is embedded in the Western psyche and continues to echo in cyberspace discourse today. According to Pythagoras, the essence of reality is not the four basic elements of nature—

earth, air, fire, and water—but in the immaterial magic of numbers. Pythagoras considered the numbers as gods and associated the numbers with the gods of the Greeks. Furthermore, he asserted that the soul was essentially mathematical homed in the transcendent realm of the number-gods. In the worldly lives, the soul is trapped in the body and yearns to be freed to return to the realm of the transcendental numbers. In this sense, according to Wertheim "We see immediately the Pytagorean undertones in contemporary cybernautic dreams. Whatever is downloaded into computers must necessarily be expressed in terms of numbers—to be precise, in terms of numbers 'zero' and 'one'" (p. 270).

   According to Pythagoras, numbers were also the archetypes of the material world, because numbers themselves had forms. The number of four, for example, could be represented by four dots arranged as a square. Meanwhile, the number of three could be represented by three dots arranged as a triangle. Since all numbers had forms, conversely, according to Pythagoras, every form would have numbers—and therefore numbers were the essence of forms. Wertheim (1999) suggests that the similar perspective is returning in the cyberspace world, since reality in the cyberspace is nothing but patterns of numbers. Therefore, according to Wertehim, "After three hundred years of physicalism, cyberspace helps make explicit once more some of the *nonphysical* extension of human beingness, suggesting again the inherent limitations of strictly reductionsist, materialist conception of reality" (p. 252).

   Meanwhile, Heim (1993) maintains that the relationship between humans and computer is much deeper than is generally thought. He wrote,

> Our love affair with computers, computer graphics, and computer networks, runs
>
> deeper than aesthetic fascination and deeper than play of the senses. We are
>
> searching for a home for the mind and heart. Our fascination with computers is
>
> more erotic than sensuous, more spiritual than utilitarian. . . . The world rendered
>
> as pure information not only fascinates our eyes and minds, but also captures our
>
> hearts. We feel augmented and empowered. Our hearts beat in the machines. This
>
> is Eros. (p. 85)

Furthermore, Heim points out that the obsessive Eros well depicted by Case, the data

prodigy in the novel *Neuromancer,* when he ecstatically was driven back again and again

to the information network. This ecstatic relationship between computers and human,

according to Heim, stems from the idealism of Plato (c. 427-347 B. C.). Idealism urges

that we must not be attracted by the physical sensory world for seeking the true and clear

knowledge, since it is only the outer projection of pure ideas and concepts within us. In

fact, it is the corruption of the flesh that separates humans from the highest forms of

knowledge. Hence, only by emphasizing the mental process and understand the pure

concepts will we understand the real truth. Some of the foundations of computer culture,

such as binary logic, information theory, and mathematics, according to Heim (1999)

resolutely can be seen as the "distant descendants of Plato's ideal forms" (p. 125).

For Heim (1999) cyberspace is the realization of Platonism, since, "Suspended in

computer space, the cybernaut leaves the prison of the body and emerges in a world of

digital sensation" (p. 89). However, cyberspace is not perfectly the same with the realm

of pure ideas Plato imagined, because, however obscure, cyberspace is a vast collection

of well formed entities (the networks, computers, home pages, data bases, etc.). Despite

the differences between cyberspace and the Platonic realm, Heim states that,

"InFORMation [*sic*] in cyberspace inherits the beauty of Platonic FORMS [*sic*]" (p. 89).

In cyberspace, Platonism has been added with certain empirical characteristic. Now, the

dream of inFORMation has supplanted the dream of perfect Platonic FORMS. In this

context, inFORMation is regarded as the highest reality, and all reality should be

understood in terms of patterns of information.

Indeed, the Platonic view still slips quietly in the computer culture, and even to

other sciences such as microbiology which argues that the foundation of reality is

information coded in the DNA. Roszak (1986) has argued long before that it was

surprising how old Platonic spirit emerged in the world of computers, after the materialist

perspectives have been the dominant approach both in scientific endeavors and in general

people's worldview. According to Davis (1998),

> Though nearly all mathematicians, computer scientists, and engineers have long
>
> ago abandoned the Platonic view that numbers refer to a real world more
>
> substantial and perfect than our own, they do not always so easily shed the
>
> *psychological* dynamics of Platonic thought, with its inherent love of abstract
>
> perfection, and its hope that the hidden patterns of the universe boil down to
>
> simple equations. (p. 125)

Moreover, according to Heim (1999) the effort to push Platonism to be more

empirical was started by later Platonists such as philosopher and mathematician Gottfried

Leibniz (1646-1716). Leibniz suggested a universal ideographic system of signs based on

binary logic that could be used to manipulate and process ideas and concepts. This binary

language should be able to symbolize every statement so that it could be processed

logically. Heim notes that "A single system [of signs] would encompass all the

combinations and permutations of human thought. Leibniz longed for his symbols to

foster unified scientific research throughout the civilized world" (p. 94). Later, Leibniz's

idea was developed by mathematician George Boole (1815-1864) and was applied to

electronic circuit by Claude Shannon both of which are very significant for the

development of computer technology.

In formulating his concepts, Leibniz was driven by his metaphysical position. For

Leibniz, human knowledge should imitate a Being. A divine knowledge embraces the

whole path, sees what has happened, and the every possibility of future trails of

knowledge. In Heim's (1999, p. 95) words, "No temporal unfolding, no linear steps, no

delays limits God's knowledge of things. The temporal simultaneity, the all-at-once-ness

of God's knowledge serves as a model for human knowledge in the modern world as

projected by the work of Leibniz." Leibniz's symbol language was trying to emulate

God's way of thinking.

Furthermore, Leibniz's metaphysics of monads, according to Heim (1999) also

silently but deeply has influenced the development of cyberspace. According to Leibniz,

the universe is a vast net that forms between nodes of perception, or souls, which he

called monads. Monads exist in solitude, but they are enthusiastic to pursue their own

goal. They do not have spatial dimensions, but create space as a by-product of their

activities. Moreover, the one and only mental life the monads have is a procession of

internal representation. Realities are representations mediated and coordinated by the Central Infinite Monad known as God, and placed in front of the monads' viewing tools so that the monads perceive the realities through the representations. According to Leibniz, each monad represents within itself the entire universe in concentrated form. Therefore, in Heim's words, "Each microcosm contains the macrocosm" (p. 98). Despite having the same representation of universe, each nomad sees representation placed before them differently, due to the different degrees of clarity and intensity in each monad's mental landscape, instead of physical location of the monads (Davis, 1998; Heim, 1999).

Heim (1999) argues that the inner structure of cyberspace is Leibnizian. He states that "His [Leibniz's] logic, metaphysics, and notion of representational symbols show us the hidden underpinning of cyberspace." (p. 92). Cyberspace has superseded physical space, and freed the cybernauts from their corporeal experience. Cyberspace, by placing representation if realities, has enabled to assemble the already isolated and alienated modern monads.

New Spirituality on the Net

Naturally, cyberspace is not the output of any established theological system. However, according to Wertheim (1999),

It is a repackaging of the old idea of Heaven but in a secular, technologically sanctioned format. The *perfect realm* awaits us, we are told, . . . beyond the network gateways, behind electronic doors labeled '.com.' '.net,' and '.edu. (p. 23),

If the New Jerusalem is open to all who follow the way of Christ, cyberspace open to anyone with computers and Internet access, regardless the race, nationality, age, and gender. The "sins" of the body are promised to be hidden from the view and left behind in the untidy material world, so the imagery of the people in the Heaven—gorgeous, graceful, and winged likes angels. The New Jerusalem is a landscape full with angels and pious people so that nobody will be lonely, while cyberspace offers a place of intimacy and companionship out of increasingly physically and geographically alienated society. It is solemnly promised that one must embrace the Internet to grasp most of human knowledge, similar to the longing of the Tree of Knowledge resided in the Heavenly City. In other words, people do not adopt cyberspace because it is technologically available. Like any other technology adoption, according to Wertheim, people adopt cyberspace because it fulfills their either consciously or unconsciously acknowledged perceived needs, e. g. spiritual needs.

Similar to other technologies, cyberspace also brings and fulfills human dreams of other-worldly places. Indeed, Benedikt (1991), for example, maintains that "the impetus toward the Heavenly City remains. It is to be respected; indeed i can usefully flourish ... in cyberspace" (p. 18). Furthermore, Benedikt contends that the image of The Heavenly City is a religious vision of cyberspace. He points out that all images of the Heavenly City in any traditions have common features, such as weightlessness, radiance, palaces upon palaces, peace and harmony, utter cleanliness, body-free environment, transcendence of nature, and the availability of all things pleasurable. It is the similar images that are promoted by cyber-enthusiasts, when they sing the praises of cyberspace.

Mesmerized by the fascinating technological achievements, many cyber-enthusiasts employ religious and spiritual vocabulary to describe and adore the technology. William Gibson, the science fiction writer who coined the term cyberspace in his 1984 novel, Neuromancer, is quoted as saying (in Ramo, 1996), "It seems as though the Net itself has become conscious. . . . It may regard itself as God, and it may be God in its own terms." Turkle pointed out that people saw the Net as a new metaphor of God (quoted in Ramo, 1996), "God created a set of conditions from which life would emerge. Like it or not, the Internet is one of the most dramatic examples of something that is self-organized. . . . God is the distributed, decentralized system."

Google, the currently most popular search engine which processes over 200 million searches per day, for example, has been equated to the All-Knowing God. Combined with the wireless Internet, according to Cohen (in Friedman, 2003), an executive of a wireless Internet provider, is a little bit like God, "God is wireless, God is everywhere and God sees and knows everything. Throughout history, people were connected to God without wires. Now, for many questions in the world, you ask Google, and increasingly, you can do it without wires, too."

Eastern religious tradition terminologies also have been frequently used. Mark Pesce (in Zaleski, 1997), the co-creator of VRML (Virtual Reality Modeling Language), the protocol for three dimension cyberspace, for example argues that the World Wide Web is the physical manifestation of Ajna Chakra, or the Eye Chakra. In the Kundalini Yoga teachings, human body has seven charkas (spiritual nerve centers of the body). Pesce argues that the earth has similar chakras. The manifestation of Ajna Chakra will

lead to the actualization of the highest chakra, which is Crown Chakra that represents connection with the Divine.

Cobb (1998) offers a more comprehensive approach to find spiritual wholeness in cyberspace in her book, *Cybergrace: The Search for God in the Digital World.* Her experience as communication consultant for high technology industry for more than fifteen years and her background in theology studies have provided her sufficient understanding of these two realms, technology and spirituality, that once she could see no way to reconcile. Cobb asserts that,

> As we reach into the future in search of the age-old spiritual values of the truth, beauty, goodness, and love, cyberspace can be a powerful ally. Through the medium of computation, our spiritual experience can be extended in profound ways. (p. 8)

Failing to understand and honor the exalted divine force that flows through cyberspace, humans will continue to experience the most superficial aspect of cyberspace: alienation and separated self from the bodies and natural world.

Cobb (1998) explores three philosophical concepts developed by Alfred North Whitehead, Theilhard de Chardin, and Ken Wilber to support her notion on the spiritual values of cyberspace. Whitehead, considered by many the greatest Western thinker since Plato, was trained as a mathematician and had come to the conclusion that the fundamental nature of reality could not be fully explained using logic. Therefore he sought more fundamental qualities that underlie the universe and developed a philosophical notion called process philosophy (Cobb, 1998). Whitehead's metaphysics

starts from the understanding that creativity is the very essence of the divine, forming the reality of the universe. According to Whitehead, the fundamental reality of nature is the creative process, instead of material-based entities such as atom, fire, earth, and water. He argues that the basic unit that constitute reality is not a "thing," but an entity he calls an "occasion of experience." Humans are able to perceive realities because the occasion of experience unfolds sequentially and rapidly.

Furthermore, Whitehead divided the occasion of experience into two aspects he called the physical pole and the mental pole (Cobb 1998). The physical pole absorbs influences from the past and an occasion's receptive state. It is predominant in inanimate objects, where the experience of the object is mostly determined by previous occasion. Meanwhile, the mental pole is a process in which information from the past is integrated with alternative possibilities or creative potential in any given moment. Therefore, novelty and creativity are absent from the physical pole, but are present in the mental pole. Every individual occasion is comprised of an ever-changing balance of both physical and mental poles. Since reality, in the Whiteheadian perspective, constitutes discrete occasions where these two poles unfold in a steady stream in time, each occasion is an active process of creativity. Cyberspace, according to Cobb, accords with the Whiteheadian perspective of creativity as the essence of divine. In particular, the feedback loop, one of the basic principles of computing, is the manifestation of the creative and generative process. One simple feedback loop is closer to Whitehead's physical pole, but a complex interconnected huge number of simple feedback loops produce mental poles and generates mental poles that characterize the emergence of

novelty. To push the argument further, Kevin Kelly (in Cobb, 1998), editor of *Wired*

magazine, asserts that computers begin performing some primary lifelike qualities, as the

expression of novelty. The Internet, as the complex interconnected network, undoubtedly

invokes the emergence of novel characteristics which are not possessed by the stand-

alone unconnected computers. In Cobb's words, "The cosmic force that drives the

movement and unfolding of reality is the same force as that which drives the continual,

moment-by-moment emergence of the world of cyberspace" (p. 51).

Using the evolutionary perspective elaborated by Teilhard de Chardin, Cobb

(1998) also argues that cyberspace is the site in which humans will reach a mystical point

called Omega—a point where pure consciousness and absolute unity are concentrated.

Teilhard was a Jesuit priest, but being an enthusiast paleontologist he felt a strong

pantheistic pull that the divine was embedded in the material world. This pull baffled

him, both because pantheism was considered heresy in Jesuit teachings and he himself

experienced transcendent divinity in which God is above and beyond the material world.

Finally, Teilhard concluded that transcendent and immanent Gods should be one God, the

creative entity in the process of spiritual evolution. Cobb points out that Teilhard

produced philosophical works that "daringly blended science and theology in a coherent

worldview that, oddly enough, was utterly prescient about the coming of cyberspace" (p.

77).

Teilhard formulated what he called the law of complexity-consciousness which

pronounced that increasing consciousness will occur with increasing complexity (Cobb,

1998; Teilhard, 1959). The evolutionary process, in Teilhard's opinion, is a continuous

process toward increased complexity and consciousness, and is not only determined by physical characteristics but also by the development of a nervous system, on which the consciousness depends. Therefore, Teilhard divided evolutionary development into three phases. The first phase is the physiosphere where geological evolution, or geogenesis, was the dominant force of evolution. When the complexity reached a certain critical mass, life emerged. Pyhsiosphere was superseded by biosphere, and, although geogenesis did not end entirely, it did not became dominant or replaced by biological evolution, or biogenesis. The emergence of conscious beings marked the beginning of noosphere (*nous* is the Greek for mind), where mind and consciousness evolution, or noogenesis, has become the dominant force of the evolutionary process. According to Teilhard, the noosphere is a stage of evolution typified by a "complex membrane of thought, fueled by human consciousness, enveloping the globe." Ultimately, the increasingly complex planet-wide noosphere and therefore increasingly consciousness noosphere will reach a point of coalescence where "all being is synthesized and organized." The coalescent point is called Omega, "or in traditional terms it is God or pure spirit" (Cobb, 1998, p. 90). These perspectives resolutely were against the view held by the Church, so that Teilhard was forbidden to publish his view and was posted to China (Cobb, 1995).

Writing in the 1950s, Teilhard clearly saw the increasingly complex communication network and technology encircling the globe supporting his evolutionary perspectives. Cyberspace resolutely can be seen as the earth's nervous and consciousness network system, representing the most powerful actualization of the noosphere to date. In a different expression, McLuhan (1964, p. 19) writes, "We have extended our central

nervous system itself in a global embrace. . . . Rapidly, we approach the final phase of the

extension of man—the technological simulation of consciousness." Embracing the

trajectory of noosphere, according to Cobb (1998), enables us to be free from the dark

side of cyberspace. Furthermore, Cobb boldly argues that:

> As the noosphere further concentrates and centers, through the participation of
>
> each of us, the earth does more than find a new evolutionary layer. It finds soul.
>
> The process of noogenesis is ultimately a movement toward the expression of the
>
> spirit of the earth through consciousness. . . . In order for the totality of the earth
>
> to express its deepest spiritual nature, we must learn to come together in our
>
> uniqueness, to embrace and express the treasure that is each of our souls. (p. 96)

Teilhard's influence on thinking about cyberspace is incalculable. Nearly every

formulation about the arising of global consciousness or a global brain find its roots in

interpretations of Teilhard's thought. Combined with James Lovelock's (1979) notion of

Gaia, which argues that the planet Earth is a living superorganism, Teilhard's

metaphysical global consciousness has attracted the proponents of the internet as a global

nervous system. One example is Louis Rosetto, the *Wired* magazine co-founder, who

said, "The more minds that connect, the more powerful this consciousness will be. For

me, this is the real digital revolution—not computers, not networks, but brains connecting

to brains" (in Davis 1998, p. 297). And for John Perry Barlow, "The point of all evolution

up to this stage is the creation of a collective organization of Mind" (in Davis 1998, p.

297). Nevertheless, unlike Cobb, these proponents of global consciousness do not

necessarily embrace Teilhard's religious inclination which is deeply rooted in Christian mysticism.

A holistic approach, one of religions' characteristics, is also applicable to cyberspace. Cobb (1998) explores the concept of *holon*, which means something is both whole and part, or a whole/part, expounded by Ken Wilber to the cyberspace. The starting point is that, according to Wilber, every single thing in the world that is a holon, both a whole in itself and a part of larger system (Cobb 1998). A single person, for example, is a whole in her or himself, but at the same time she or he is the part of larger reality. Likewise, he or she is constituted of parts which in each of themselves is a whole.

The collection of individual holons performing a coherent act similar to a single entity is called social holon. A social holon, in turn, might be considered as a individual holon in a larger context, instead of a collection of smaller ones. Having individual ants tightly united, an ant colony, for example, is a social holon that can be seen as a "superorganism" with its own characteristics beyond individual characteristics of the ants. In this line, Cobb (1998) maintains that cyberspace as a totality is utterly a new kind of social holon. It iscertainly composed of millions of connected individuals, but at the same time it is a coherent environment with emergent characteristics beyond the individuals. Furthermore, every holon seeks the way to reach its next level of development. Following this perspective, Cobb (1998) argues that,

> We coevolve with cyberspace as both we and it seek the next steps along the
>
> evolutionary path. In concert with cyberspace, we stand at the cusp of the highest

> expression of rationality, the noosphere, peering into the next level of theosphere,
>
> the realm of the truly transpersonal stages of awareness. (p. 118)

In the theosphere lies the paradox, that is while it exists beyond previous spheres (noosphere, biosphere, and physiosphere), it also at the same time interpenetrates all of them.

<div align="center">Religious Cyber-Experience of the Devotees</div>

The theorists' perspectives elaborated in the previous section have indeed provided many insightful approaches on the relationship between cyberspace and religion or, more accurately, spirituality. On the other side, however, it would be interesting to know how the religions devotees themselves perceive cyberspace in their own religions context. One anticipated common perspective is, of course, that cyberspace is more or less similar to other means of communication, which is very useful to broaden religion outreach (see, for example, articles in Hadden and Cowan, 2000a; Bunt 2000, 2003). However, there are some perspectives that go further by considering the Internet as has religious and spiritual values. This section will discuss some perspectives on cyberspace proposed by the adherents of some religions.

Judaism

Yosef Y. Kazen is a rabbi of the Chabad-Lubavitch, a sect branch of Orthodox Hasidic Judaism, and is the director of the sect's web site (Zaleski, 1997). Kazen and other members of the sect have high hopes for modern technologies. They follow their spiritual leader, Rabbi Schneerson, who stated in the early 1980s that the inherent unity in the universe was increasingly revealed by the advance of scientific understanding. For

Kazen, the concept of inherent unity in the world is very strongly shown through the

Internet, even more than through radio and television. Computer-networked technology

can be seen as a holy technology serving a holy end. Despite that there are haves and

have-nots, at the end, every one will be participating regardless of how much. In this

sense, for Kazen and the Chabad, the Internet is a means toward the era of the Messiah.

However, there are religious practices that can not be transferred online. According to

Kazen (in Zaleski, 1997), a minyan, for example, requires the quorum of ten people that

gather physically. The quorum is needed for a minyan, the communal pray and worship,

because the physical bodies represent different level of godliness.

For Rosen (2000), the Internet has a lot of common with the Talmud, "Talmud . . .

bears a certain uncanny resemblance to a homepage on the Internet, where nothing is

whole in itself but where icons and text boxes are doorways through which visitors pass

into an infinity of cross-referenced texts and conversations" (p. 9). The Internet, he

argues, is a "world of unbounded curiosity, of argument and information, where anyone

with a modem can wander out of the wilderness for a while, ask a question and receive an

answer" (p. 10). Likewise, the Talmud is, for the Jewish, a place where everything exists,

if only one knows how and where to look. The Talmud consists of a variety of ancient

stories, traditions, and rabbinical positions on an abundance of topics; the Internet

likewise comprises almost innumerable web sites on almost every subject. Furthermore,

the Talmud offers virtual homes for an uprooted culture, while the Internet suggests a

similar sense of Diaspora, a feeling of being everywhere and nowhere. Rossen ponders

"Where else but in the middle of Diaspora do you *need* a homepage?" (p. 14).

Islam

A substantial number of individual Muslims and Islamic organizations have embraced the Internet in numerous ways (see Bunt 2000, 2003). However, generally the Internet is viewed as another new tool of mass communication that needs to be used for the interest of Islam. Seyyed Hassan Khomeini encapsulates this perspective in his inauguration speech of an Internet site dedicated to his grandfather, Ayatullah Ruhullah Khomeini, the leader of Iran's Islamic Revolution

I am sure that with love, faith and commitment, the uses of technology and modern science have opened a new window to the world so that people around the world would become more and more acquainted with the genuine culture of Islam and its capabilities (in Bunt, 2000, p. 11).

Furthermore, the Internet also has been used as the instrument to carry out other Islamic practices which have traditionally employed older media, such as *ijtihad* (independent judgment based on Islamic sources), *fatwa*s (religious advices), etc. (Bunt, 2000, 2003).

A more thoughtful perspective, moreover, can be found from one of the traditions of sufi or Islamic mysticism. Sheikh Hisham Muhammad Kabbani is a sheikh (master-teacher) of the Naqshbandi-Haqqani Sufi Order of America (Naqshabandi Sufi order is one of the main order in the esoteric-mysticism Islam). Kabbani asserts that spirituality is a kind of energy that can be transmitted and received, and human beings are receivers and transmitters at the same time. According to Kabbani, "This is what we see also on the

Internet and in the sophisticated equipment nowadays—that everything receives and

transmits" (Zaleski, 1997, pp. 61-62). However, spirituality through the Internet is just a

beginning, since on the next level people necessarily need to have real connections

physically with the master giving guidance through the spiritual journey. Furthermore,

Kabbani asserts that the Internet is energy which the twin of spirituality.

> This Internet is energy. It's a kind of energy, it is coming up on that screen, but it
>
> is energy. . . . Every atom, if you bring [the chips in the computer] down and open
>
> that atom, you can see the nucleus, and around the nucleus these electrons or these
>
> neutrons that are swinging, they are turning around the nucleus in a speed that is
>
> so huge.
>
> So you see everything is coming from energy. And that's why Newton
>
> said energy is not lost. Energy is always there. And that's why we believe that
>
> energy, spirituality, is always there. So we find spirituality and energy are twins.
>
> You can not split them. And that's why we are going to see in the twenty-first
>
> century more advanced technologies that are slowly, slowly going to see
>
> everything come out, and everyone is going to say, "We believe in spirituality that
>
> is dominating and controlling the world." Because this is spirituality, and it is a
>
> kind of energy. (in Zaleski, 1997, p. 64)

Christianity

Bishop Galliot used to be the Roman Catholic bishop of the diocese of Euvreux,

in Normandy. In the early 1990s, he frequently spoke about controversial issues such as

priestly celibacy, homosexuality, and the ordination of women (Zaleski, 1997). In 1994,

he also became deeply involved in caring for homeless people in Paris, and became the advocate for the civil rights of the homeless (Cobb, 1998). Unhappy with Bishop Galliot's activities and outspokenness, the Vatican called him to Rome and informed him that in twenty hours he would not be longer the bishop of Efreux. Several months later, the Pope announced that Bishop Galliot was moved to the diocese of Partenia. It turned out that Partenia is a place in desert of Algeria which used to be a diocese in the 4th century. Now, physically, Partenia does not exist.

Knowing that Partenia no longer existed, Bishop Galliot moved the diocese into cyberspace, into a virtual diocese. According to Bishop Galliot, one of the reasons why the Christianity was so difficult to be crushed by the Roman Empire was because the early Church was a kind of Internet. He maintains that "the early Christians understood that what was most important was not to claim physical power in a physical place but to establish a network of believers—to be online" (Cobb, 1997, p. 75). As for Partenia, he states that "it existed in the mind of God, and now exists as a series of electrons racing through the world" (in Cobb, p. 76), Leo Sheer, a French intellectual, suggested the idea of virtual Partenia to Bishop Galliot. The idea of a virtual bishop reverberated with nature of the cyberspace since "the mind of God is imitated by the virtual structure of the Internet, where the difference between the physical actuality and real existence has at last been breached" (Cobb, p. 75).

CHAPTER IV

CONCLUSION

The purpose of previous chapters of this thesis has been to analyze some

approaches used to explain the Internet phenomenon. There is a consensus among

thinkers discussed in the previous chapters that the Internet is a new phenomenon that

will play a central role in society and therefore will transform humanity as well.

However, beyond this observable consensus, attempts to understand and explain what is

happening in society and with individuals in relation to the Internet and cyberspace break

down.

Recognizing this, I have proposed a broad framework to map the conceptions that

have been developed by writers on this subject. This framework has examined those

approaches in two broad categories, namely social and individual approaches. The social

approach—which describes how cyberspace has been affecting and will affect the society

as a whole—has been divided into two perspectives. First, the optimistic view sees

cyberspace as the inevitable technology that will bring a brighter future to humankind.

Secondly, and to the contrary, the skeptic view holds that the Internet will degrade

humanity, so technology should be used wisely. The individual approach, which

describes how cyberspace will affect people at the individual level, also has been divided

into two perspectives. The reason for this is that not only does humanity change and

influence society, environment, and culture through technology, but the technologies also

change the nature of humans. First, this thesis discusses how the Internet affects and

changes the self and identity of the people; and, secondly, how the Internet might affect even the deeper qualities of humankind, which is its spirituality and metaphysics.

In the social, individual, and self and identity approaches, I have chosen one thinker to represent the subject, and then I comment quite extensively on their notions of those particular issues. However, in discussing the notion of the spirituality and metaphysics of the Internet, I have not singled out one thinker to represent this perspective; instead I have discussed this theme by drawing on ideas from several thinkers. Unlike the three other perspectives, there is no single author who has devoted her or his career to a continuous discussion of this topic. In addition, from the other perspectives we can conveniently pick one author to represent the particular approach since other authors' thoughts, despite their differences and variations, can be considered to be represented by the author examined in this thesis. Conversely, the span of topic discussion on the spirituality and metaphysics of the Internet is too diverse to be represented by one author.

While sketching the approaches mentioned above, no personal evaluation or critique on those approaches was offered. This is necessary because the first aim of this thesis is to offer the landscape of the theoretical proposal as completely as possible. In this concluding chapter, however, I will present my comments on the approaches laid out in the previous chapters. Moreover, I will present very briefly some of the other theoretical approaches and issues on the Internet and cyberspace which are not discussed in this thesis.

On the Optimists

Howard Rheingold's position on the relationship between the Internet and society is best described by himself as "cautious-optimistic." Reading his books, one cannot fail to notice his strong faith in the progress promised by the new technologies and his belief that new technologies will bring a new and better day than today. However, some reservations on progress are also easily observed in his books. Therefore, Rheingold (1998) admits that, "I lack the certainty of the true believers—both the orthodox technophiles and the convinced technophobes." In *The Virtual Community* (1994, 200a), for example, he coins the term disinformocracy to depict the possible danger situations brought about by the new technologies; namely the commodification of public sphere by the commercial interests; the surveillance and intrusion of privacy; the hyper-realism of virtual communities. Rheingold reiterates his concerns about the possible dark sides of the new technologies in his next book, *Smart Mobs.* He suggests that the smart mob technologies—e.g. peer-to-peer networks, wireless communication, and ubiquitous computing—could endanger the liberty of society since always-on capabilities could bring always-on surveillance as well. Furthermore, he argues that is possible that online and hyper-connected environments will degrade the quality of life and psychological well-being, especially in the one's personal relationships. Finally, smart mob technologies might lead to the situation described by technology critics such as Jacques Ellul in which humanity could not avoid the omnipresent quantification and mechanization on human life.

However, Rheingold believes that these possible dangers can be avoided since humans have the ability to make choices. Rheingold believes that the destiny of humankind is in the hands of humans themselves, with the condition that there is a widespread literacy of the use and development of technology. The necessity of human awareness and action in using and shaping technology is prevalent in Rheingold's books published even before *The Virtual Community* and *Smart Mobs.* For example, he writes that "It is up to us to decide what *human* means, and exactly it is different from *machine,*" in *Tools for Thought* (2000b, p. 319); and, "Virtual Reality vividly demonstrates that our social contract with our own tools has brought us to a point where *we have to decide fairly soon what it is we as humans ought to become,"* in *Virtual Reality* (1991, p. 387). On the virtual community, Rheingold (2000a) asserts that humans themselves hold the key of their future, "Armed with knowledge, guided by a clear, human-centered vision, governed by a commitment to civil discourse, we citizens hold the key levers at a pivotal time. What happen next is largely up to us" (p. 321) (Emphasis in original). Lastly, in *Smart Mobs* (2003b) he asserts that "The convergence of smart mob technologies is inevitable. . . . in this interval before the new media sphere settles into its final shape, what we know and what we do matters" (p. 215). In other words, Rheingold does not subscribe to the opinion that technology is an autonomous and independent factor in the society. He believes that the course of technological development can be steered by human actions, and therefore humans have the capability to avoid the possible catastrophes caused by technology. In this regard, according to Rheingold, awareness of the possible dangers of the technology and the understanding of

how the technology develops and operates are the key to guide the technology. In other words, we need a kind of technology literacy in this respect.

However, Rheingold offers very little about how to propagate the new technology literacy and what workable efforts need to be done to avoid the disinformocracy and the dark sides of the smart mobs. Only in several most articles (2003a, 2003c) does he clearly recommend that something needs to be done in the area of law and regulation pertaining to the new technologies. Worrying about the latest developments—such as the recording industry's objection to file sharing, the promotion of strict digital rights management that benefit the industry, the unwillingness of telephone and cable companies to carry Internet traffic that competes with their own content offerings, extension of the copyright to the digital domain, the consolidation of media, etc.—Rheingold (2003c) maintains that if the trends go unchecked,

> In a few years we will no longer be 'users,' free to reshape the technology
> as we choose, but 'consumers,' whose only liberty will be the freedom to
> decide which brand to buy. . . . It all depends on what kinds of laws and
> restrictions will be burned into next-generation hardware and operating
> systems. . . . The time to know, speak and act is now. The technology is in
> your hands. Use it well if you want to keep it that way.

Furthermore, Rheingold (2003a) believes that smart mob technologies provide the tools for peer-to-peer, self-organized, citizen-centric movements to demonstrate real political influence. Failing to do so, the benefit of the smart mob technologies for society will recede to be a utopian myth and the dark side of smart mobs will prevail.

On the Skeptics

Stoll's criticism on the Internet stems from his concerns that the Internet has been over-hyped as a panacea for the future of humankind. As such, the Internet has been applauded very highly and has been adopted in most fields of life without any reservations. According to Stoll (1996), "Over-promoted, the small, intimate benefits of the Internet are being destroyed by their own success" (p. 10). Stoll (1999) reminds his reader that hypes have always accompanied the development of technology and most of the promises promoted by the fervent proponent of the technology have vanished as time goes along. Unlike some enthusiasts who regard the Internet as an ultimate technology that will bring profound changes without precedence in the human history, Stoll (1999) argues that there is nothing particularly important about the invention of the Internet. We have had some previous technologies—such as the phonograph, radio, internal combustion engine, etc.—that also brought fundamental changes in the human culture and environment.

Surprisingly, despite his harsh criticism on the over-hyped Internet, Stoll (1996) believes that commercialization and intrusion of privacy, two aspects that also mentioned by Rheingold (1995, 2003b) as the dark sides of the Internet, are not threats for society. According to Stoll, the lack of personal touch, the difficulty to build mutual trust among the parties involved in the electronic commerce, the difficulty to send money through networks, and the like, will make commerce in cyberspace not viable. Moreover, Stoll believes that individual privacy will not be really threatened in the age of cyberspace,

since we are protected by the incompatibilities of many database systems in which our data might be stored (e. g. banking systems, magazine subscription, grocery stores, etc.).

Apparently Stoll is wrong in these two aspects. First of all, many studies have shown that commercial activities in the Internet keep growing rapidly. According to the report of the Pew Internet and American Life Project ('Internet Activities,' 2003), 83 percent of those with Internet access in the U.S. use the Internet to research a product or service before actually buying it, and 61 percent of those with Internet access actually have used it for buying products. Accordingly, the market value of e-commerce is also expanding. According to Forrester Research ('Statistics,' 2003), the value of the U.S. online sales is about 95.7 USD billion, and is estimated will attain 229 USD billion in 2008. The statistics issued by E-Marketer ('Statistics,' 2003) have also shown the steep increase in online sales in the U.S. Meanwhile, 44 percent of Western European users shopped throughout the year (Robinson 2003).

Apparently the possibility of online transaction fraud does not deter people from conducting online commerce. One also must remember that fraud does happen also in "off line" businesses, from personal cheating in transactions between individuals to the corporation frauds such as in the cases of Enron and Martha Stewart. Furthermore, despite cases of payment fraud in online sales, a measure of trust in online transactions has been gradually established. One of the most obvious examples would be eBay, the largest person-to-person online auction site, established in 1995. This is one of e-commerce companies that have successfully applied a trust or reputation mechanism, called the Feedback forum, in its business. Experience with eBay provides evidence

(Rheingold 2003b) that online transactions are workable: in 2000, transactions on eBay were worth more than US $ 5 billion; by 2002 eBay had more than 42 million registered users; in 2002 eBay reported that only 27 out of 2 million transactions over a four-month period were considered to be dubious and might involve possible criminal fraud. Consequently, 99.99 percent of the auction transactions were successfully completed.

In the Feedback Forum, buyers and sellers have an opportunity to give feedback—in a numeric rating of +1 (positive), 0 (neutral), or –1 (negative)—about each other after completing a transaction. Both parties also have the opportunity to respond to the negative comments that they feel are unfair. Over time and over many transactions, the sellers who are consistently honest and provide good service (item description, shipment, packaging, etc.) will build up substantial reputation (rating) scores, which need to be maintained to attract bidders. Resnick and Zeckhauser (2001), using transactional data from eBay, show that more than half of the transactions receive feedback, and for negative and neutral feedback amount to 0.3 percent combined. Most of the transactions were among strangers; therefore they must have relied on the reputation system, since only 17.9 percent of all sales involved a buyer and seller who had done transactions with each other before. In short, contrary to Stoll's argument, online transactions appear to be workable, and trust between sellers and buyers can be built.

Stoll's assertion (1996) that privacy will not be an issue in the Internet is also incorrect. His main argument is that there are incompatibilities between various existing database systems, so that they can not communicate with each other to perform an effective surveillance. However, the development of database technology, along with the

habit of society members to perform their daily life digitally (e.g. shopping, credit cards, etc.), has facilitated the databases communication effectiveness, so that a particular person's data and, for example, purchasing habits, can be searched. Studies by Whitaker (1999) and Brin (1998), for example, explain that vast amounts of personal data have been collected by corporations for their commercial purposes. According to Whitaker, instead of monolithic Orwellian Big Brother, surveillance will be conducted by a myriad of "Little Brothers" with little or no accountability.

Interestingly, among the pundits discussed in this thesis, it is only Stoll who has the technical expertise in the field of computing and the Internet. He was known as a computer security expert, thanks mainly to his success in investigating the attack on the U.S.' military and strategic computer networks. In this regard, however, Stoll is not alone, since there are other people with different types of background in computing who have been critical of—or at least have offered warnings about—the possible danger of networked society. Rawlins (1996), for example, a professor of computer science at Indiana University and a specialist in Artificial Intelligence (AI), warns in his *Moths to the Flame, The Seductions of Computer Technology* that the future offered by information technologies is not necessarily a bright one. Indeed, according to him, "Our near future will be a complex, exciting, but also frightening place" (p. x). Another criticism comes from Valovic (2000), former editor-in-chief of *Telecommunications* magazine and a research manager with International Data Corporation, in his book, *Digital Mythologies, the Hidden Complexities of the Internet.* Valovic claims that during his leadership, *Telecommunications* was the first media outlet that broke the story about

the Internet's move into commercial markets in 1991 after its previous limited use in the

academia and military. On the fast-growing implementations of the Internet, he states that

"I am convinced that we cannot afford the luxury that we have had with other

technologies of saying implement first and ask questions later" (p. xiii). The last example

comes from Talbott (1995), an editor of O'Reilly & Associates, a leading publisher of

computer and Internet books, with his book: *The Future Does Not Compute:*

Transcending the Machines in Our Midst. Talbott has thirteen years working experience

in the field, including computer programming responsibilities in addition to technical

writing. He comes to conclusion that "if we continue assimilating our lives to computers

according to the tendencies already broadly active in society—and those tendencies show

every sign of retaining their grip upon us—then we will finally lose ourselves" (p. 20).

Utopian and Dystopian Views on Technology

Putting it in a broader context, Rheingold's optimism and Stoll's skepticism on

the role of Internet in society could be seen as the continuation of and a subset of

everlasting conflicting visions of technology, namely between the utopians and the

dystopians. Since the dawn of modern science in the sixteenth century, and especially

since the industrial revolution in the eighteenth century, these conflicting views have

arisen along with the inventions of increasingly complex technological innovations. The

disagreement on the strong belief of technological advancement has been expressed in

social movements as carried out by the Luddites in the early nineteenth century (Sale

1995). It also has been expressed in literary form, as shown by renowned work of Marry

Shelley (1987), *Frankenstein, or the Modern Prometheus,* which was published in 1818.

Indeed, the hopes and the fears have been going together with the advancement of technology. As Tiles and Oberdiek (1995, p.1) succinctly put it, ". . . technology promises to confer god-like powers of control over nature; but it is not clear that mortals are sufficiently god-like to be able to wield this . . . power wisely." Therefore, by emphasizing one aspect, the hopes or the fears, many scholars, writers, and thinkers fall into one of the two opposing perspectives: the utopians or the dystopians. Borrowing the definition offered by Gendron (1977), when he discussed these two perspectives that had been developed in the 1960s and 1970s,

> Utopians believe that technological growth, if unimpeded by any major
>
> disaster, will in the long run bring about the demise of every major social
>
> evil. The believe that it will eliminate scarcity and disease, that it will
>
> significantly improve communication and education, and that will
>
> undermine the environment conditions which reinforce aggression,
>
> prejudice, sectarianism, nationalism, oppression, and exploitation. (p. 3)

The dystopian perspective, as its name suggests, views technology in a diametrically contradictory way from the utopian perspective. According to Gendron,

> Dystopians believe that technological growth in the long run generates or
>
> intensifies many more social evils than it reduces or eliminates. According
>
> to them, while technology is creating affluence and collective power over
>
> nature it is undermining freedom and democracy; it is stimulating the

growth of bureaucracy and the use of techniques of mass manipulation; it

is cutting human from nature, their bodies, and their fellow humans; it is

making work more tedious, unchallenging, and psychologically unhealthy;

and it is increasing the dangers of annihilatory war and ecological

catastrophe. (p. 3)

Despite being taken from a relatively old book published in 1977, the lengthy

quotations above are still relevant in the debate as to whether the Internet will bring

benefit or harm to humankind. The optimistic views presented by the likes of Rheingold

(2000a, 2002), Gates (1995), Dyson (1997), Negroponte (1995), etc. reverberate with the

concerns voiced by their early utopian counterparts. Accordingly, dystopians themes are

clearly prevalent in the writings by the likes of Stoll (1996, 1999), Slouka (1995), Tabbot

(1995), Sale (1995), etc. As the newest communication technology, the Internet has

inherited the hopes and fears of technology; whether the Internet will exalt humanity, or

will degrade it. Given the fact that these opposing perspectives have been present in the

course of history of technology, we could expect that they would be present as well in

responding new coming technologies in the future.

Although these two perspectives are on the almost opposite ends of the spectrum,

they actually share a common assumption regarding technological determinism. The

technological determinism perspective holds that technology is the primary casual factor

of change in human history, and therefore people more or less play fewer roles, if not

passive roles, in social changes. While the optimists enthusiastically look forward to

changes brought by technologies, the skeptics grieve for the changes that they see as

imposed on a more or less powerless society. This simplistic view of the relationship

between technology and society is quite popular among the general public, because

effects of technology can be easily seen in everyday life. The intellectual roots of the

technology determinism perspective even can be traced back as far as the Enlightenment

Age in the eighteenth century when science and technology progress was the spirit of the

age. Technological determinism gradually became a popular belief in late of nineteenth

century through artists and writers, as noted by Smith (1994),

> Inspired by their contact with great inventions of the age, writers and artists often
>
> purposely endowed steamboats, railway locomotives, machinery, and other
>
> inanimate objects with life-like qualities in order to cultivates emotions of
>
> wonderment, awe, magic, and, at times, even dread in their audiences. . . . [This]
>
> added another dimension to the growing popular belief in technology's power to
>
> shape the course of human history. (p. 8)

Furthermore, Smith (1994) argues that the belief in the promise of technological progress

is increasingly embedded in society in the twentieth century, through popular culture.

This is evident especially through advertising on technological products.

> Using psychological concepts of association and suggestion, neatly packaged in
>
> colorful and briefly worded appeals that excited mental images, advertisers
>
> encouraged people to believe that technology, broadly construed, shaped society
>
> rather than the other way around. . . . technology became idolized as the force that
>
> could fix the economy and deliver on the legendary promise of American life.
>
> (Smith, 1994, p. 13)

Although Smith's concern is technological determinism in the US, one could

conveniently apply the analysis to the other parts of the world. Also, high promise and

the sense of inevitable progress of the latest computer technology and the Internet, so that

they will shape the course of society's development, can be easily found in its advertising.

Nevertheless, at least within academic circles, technological determinism has

been criticized because it offers a rigid view of relationship between society and

technology. It also overlooks a reciprocal interaction between "humans and machines."

Further discussion of this elusive issue is certainly beyond the scope of this thesis, since

such a discussion will fall into a broader philosophical discourse. For example, to resolve

the conflicting optimistic and pessimistic views on technology, it is necessary to include

the issue of values in the development of technology (Tiles and Oberdiek 1997). The

issue of so called agency is relevant (Lister, Dovey, Giddings, Grant, and Kelly 2003)

against cause and effect debates that belong mainly to the natural sciences. In humanities

studies, the agency issue is crucial in a discussion of the relationship between people and

its culture and environment; whereas in philosophy it concerns the elusive issue of free-

will and determinism.

<div align="center">On Self and Identity</div>

Turkle's groundbreaking book, *Life on the* Screen, has been referred to by many

studies on psychological aspects of the Internet. As Bell (2001, p. 211) puts it succinctly,

"As a model of one way of researching issues of identity on-line, it is unbeatable."

However, further exploration of self and identity in cyberspace needs to consider at least

two aspects. First, Turkle's main study was about online game MUD and Internet Relay

Chat (IRC) in the first half of 1990s, when MUDs and IRCs were still text-based

communication. The development of Internet technologies and broadband connections

has made graphic-based online games possible. Second, according to research conducted

by the Pew Internet and American Life Project ('Internet Activities,' 2003), only 42% of

American Internet users state that they download files such as games, videos, or pictures

when they go online. The number of American Internet users that play online games is

even smaller, 36 percent. Meanwhile, only 25 percent of American Internet users

acknowledge that they participate in online discussions or chat in a chat rooms. There are

many more popular online activities for American Internet users, such as sending email

(92 percent), using a search engine to find information (88 percent), doing research a

product or research before buying it (86 percent), searching a map or driving direction

(79 percent), looking for information on a hobby or interest (76 percent), etc. In other

words, the issues of self and identity as expounded by Turkle in her books might not be a

widespread phenomenon, because the main activities of Internet users do not really relate

with concealing or exposing identity.

Using the broader framework of psychological implications of the Internet

proposed by Gackenbach (1998)—which is intrapersonal, interpersonal, and

transpersonal implications—Turkle's notions fall in the category of intrapersonal

implications of the Internet. Intrapersonal implications deal with issues such as the

question of whether Internet use may add to and deepen or, on the contrary, distract self-

awareness, the consequences of having several different persona while online, the

possibility of the domination of the superficiality over the true self, etc. Meanwhile,

interpersonal implications are related to issues of online communication with others, such as how online communications maintain or interfere with personal relationships, how people keep a sense of community in the online relationship, etc. Lastly, the transpersonal approach discusses issues of shared consciousness, the possibility of the emergence of some sort of global brain, and whether the Internet will evolve to be a system sufficient complex enough to become self-organizing and having self-awareness, etc.

<div align="center">On Spirituality</div>

The relationship between media and religion and spirituality has not begun with the pervasiveness of the Internet. Indeed, religious purposes and expressions have been one of the most prominent uses of any new media. As Hadden and Cowan (2000b) note, for example,

> The first book off Gutenberg's famous printing press was the Bible. On Christmas Eve, 1906, the world's first radio broadcast was a religious service which included a violin solo of Gounod's 'O Holy Night' and readings from the Gospel of Luke. (p. 7)

Furthermore, Fore (1987), for example, argues that television has started taking over the role traditionally served by the church, such as shaping systems of values and belief patterns, expressing cultural essences and assumptions, providing a way to see the world, etc. He contends that, "Television today, whether the viewers know it or not, and whether the television industry itself knows it or not, is competing not merely for our attention and dollars, but for our very soul" (p. 24). This means that television is itself becoming a kind of religion.

Actually, the discourse on the relation of media technology with religion is only the continuation of the bigger discourse on the relation between religion, or spirituality to be exact, and technology. This discourse also has taken in many forms—from the religious anti-technology to religious pro-technology. However, the common belief is that technology, together with modern science, has replaced religion in providing values, sense of purposes, rituals, and the like for modern men and women. Science and technology are not produced by any theological system, and are generally believed to move forward at the expense of religion.

In discussing the relation between technology and religion, I will use a framework put forward by Barbour (1993), a preeminent figure in the discourse of the relationship between science and religion, in his book *Ethics in an Age of Technology.* He categorizes the views of technology into three headings: Technology as Liberator, Technology as Threat, and Technology as Instrument of Power. Technology as Liberator views technology optimistically because of the belief that technology will bring prosperity, freedom, and material progress, as well as its potential for liberating humankind from their plights, such as hunger, disease and poverty. On the other hand, Technology as Threat criticizes technology since it is uncontrollable and brings many consequences such as uniformity in mass society, impersonality, manipulation, alienation of workers, environmental devastation, etc. Meanwhile, Technology as Instrument of Power sees technology as "neither inherently good nor inherently evil but is an ambiguous instrument of power whose consequences depend on its social context" (p. 15). In other words, technologies are socially constructed.

According to Barbour (1993), each of the headings has its own supports from sociologists, political scientists, historians, philosophers and—which is most relevant for the discussion of this theses—theologians. In the Technology as Liberator camp, he puts theologians such as Harvey Cox, Norris Clarke, and, of course, Teilhard de Chardin. Cox sees that technology supports Christianity in view of its desacralized and controlled nature, so that technologies can be used for human welfare. Furthermore, Clark considers that technology enables us, the cocreators with God, to be free from the confinement of nature, which is the victory of spirit over matter. Teilhard, as we have seen in the previous chapter, contends that technology will bring human to the unification with God in the Omega Point. In short, theologians in the Technology as Liberator camp see that technology and spiritual development are linked together, and they overlook the negative potential of technologies.

Along this line, Newman (1997) argues that religion has been involved with technology since the earliest religion. In both ancient Egypt and Mesopotamia, for example, technological works (buildings, temple, etc.) were built to worship gods by craftsmen belonging to guilds related to religious organizations. Furthermore, the detailed description of the building of Noah's ark, and descriptions of other technologies such as gates, walls, palaces and the likes in the Bible should indicate that the relation between technology and religion is not as distant as the religious anti-technologists believe.

On the other hand, there are also theologians who belong to the Technology as Threat camp. Barbour (1993) points out that Paul Tillich, among others, asserts that religious commitment and experience are emasculated by the impersonality, rationality

and mechanical nature of technology. Meanwhile, Gabriel Marcel argues that the pervasive technological-centric view has driven out a sense of the sacred that belongs to spiritual experience. Furthermore, by superseding religion as the core element of the culture, many critics point out that technology in turn behaves like religion and provides a system of faith for a culture. As Stahl (1999, p. 13) asserts, "Throughout both industrialized and developing worlds, the One True Faith remains ascendant. Neither Christianity nor Islam, Liberalism or Marxism, the One True Faith is technological mysticism: faith in the universal efficacy of technology." For Stahl, technology is an implicit religion, because it has "symbols and rituals directed to the numinous which are located outside formal religious organizations" (p. 3). Technology, on its own way, also deals with fundamental questions which used to belong to religion realm, such as "What makes humans human?" "Who are we and what is our place in the universe?" "What must we do to be saved?" etc. Facing the challenges posed by technology, some religious people, Newman (1997) calls them religious anti-technology, express their grief and point out that technology has desiccated the human soul. Central in the religious anti-technology position is that technology and religion are competing with each other in human life.

Even Jacques Ellul, who is considered as "the founding father of the contemporary anti-technological movement " (Newman, 1997, p. 16), and whose *Technological Society* is the book that can not be overlooked in anti-technology discussion, could not avoid resonating with his religious beliefs in his works. Although discussions in his works do not employ religious terminologies and framework, Ellul was

inspired by his religion. A devout Protestant Christian, Ellul devoted his time also to the respectful application of Scriptural insights. Newman asserts that,

> The sense of the paramount importance of Divine grace is a significant force that shaped Ellul's attitude toward facing both the dehumanization produced by technological society and the problem of witnessing without corrupting the faith that one seeks to instill. (p. 19)

Despite that there are theologians in those two camps, a larger number of theologians, according to Barbour (1993), view technology as a neutral instrument whose positive and negative impacts depend on how it is used. Egbert Schuurman, for example, sees the potency of technology to be the God's instrument to love and serve all creatures, despite the negative effects of technology. Technology, in Schuurman's view, can be incorporated into God's work of creation and redemption. For Barbour, this position is more consistent with the biblical perspectives then two other previous camps when he says,

> Preoccupation with technology does become a form of idolatry, a denial of sovereignty of God, and a threat to distinctively human existence. But technology directed to genuine human needs is a legitimate expression of humankind's creative capacities and an essential contribution to its welfare. . . . The biblical understanding of human nature is realistic about the abuse of power and the institutionalization of self-interest. But it also is idealistic in its demands for social justice in the distribution of the fruits of technology. It brings together celebration of human creativity and suspicion of human power." (pp. 18-19)

I agree with the third position as well. In the case of cyberspace, its positive and negative consequences on spirituality are socially constructed. I have discussed in the previous chapter the enthusiasm to incorporate cyberspace into our spiritual experience. Some authors show that religious archetypes pervade cyberspace, while some others try to envision philosophical explanations on the spirituality of cyberspace. All those perspectives are useful as heuristic tools to understand the cyberspace phenomenon in relation to human spirituality or the cyberspace phenomenon in general, but they overlook the role of human action.

More specifically, in addition to my concordance with Barbour's position above, I argue that the spiritual meaning of cyberspace depends whether we want or do not want to have a spiritual meaning of cyberspace. I found my standpoint is quite similar with Thomas Friedman's stance in his expanded version book, *The Lexus and the Olive Tree*. Friedman (2000), the winner of two Pulitzer Prizes, and a regular columnist in the *New York Times*, says that if God is viewed as the actor who endlessly intervenes through divine acts, what he calls Biblical God, then there is no God in cyberspace. It is simply because the most popular websites content have nothing to do with God or spirituality, but pornography, gambling and pop music. Friedman says that his view on god is post-biblical, but grows out from his Jewish tradition. In this view,

> We make God present by our own choices and our own decisions. In the postbiblical view of God, . . . God is always hidden, whether in cyberspace or in the neighborhood shopping center, and to have the God in the room with you, whether it's a real room or a chat room, you have to bring him there yourself by

your own behavior, by the moral or immoral choices and mouse clicks you make.
. . . We are responsible for making God's presence manifest by what *we* do. And
the reason that this issue is most acute in cyberspace is because no one else is in
charge there. There is no place in today's world where you encounter the freedom
to choose that God gave man more than in cyberspace. . . . God is not in
cyberspace, but He wants to be there—but only we can bring Him there by how
we act there. (p. 469)

Two Other Approaches to Cyberspace

The purpose of this thesis has been modest, that is to provide some approaches to
cyberspace that I believe could be regarded as a "rough map" of the theories of
cyberspace. That said, there are many other approaches to cyberspace that are not
included in this thesis, primarily because of the time and scope limitation in this thesis.
However, I would mention briefly two additional important approaches.

One of the approaches has been overlooked is the discussion of the nature of the
Internet as a medium. While the previous chapters essentially discuss the effect of the
Internet on society and the individual, they do not deal with questions such as what the
characteristics of Internet as a medium are. In this regard, McLuhan's maxim comes
readily to be a starting point. McLuhan (1964) asserts that the content of any medium is
always another medium. McLuhan maintains, "The content of writing is speech, just as
the written word is the content of print, and print is the content of telegraph" (p. 23-24).
However, unlike McLuhan's illustrations, the content of the Internet is not only one other
medium. Therefore, Bolter and Grusin (2000) offer a more comprehensive analytical

framework of new medium by proposing what they call remediation. Remediation is the refashioning of prior media forms in the new medium, through the double logics of hypermediacy (or multimediacy) and immediacy (or transparency).

As its name suggests, in the logic of hypermediacy the new media refashion many prior media forms in a fragmented visual space. According to Bolter and Grusin (2000, p. 31), "The practice of hypermediacy is most evident in the heterogeneous 'windowed style' of World Wide Web pages, the desktop interface, multimedia programs, and videogames." The media mentioned by Bolter and Grusin are characterized by the eclectic amalgam of texts, sounds, pictures, and videos in many representation windows in such a way that it reminds the viewer of the medium. Conversely, the new medium also seeks immediacy or transparency so that media that are remediated are forgotten by the viewer. The logic of immediacy persuades the viewer so that they perceive the authentic and unmediated experience. Hypermediacy (in which viewers *look at* the medium) and immediacy (in which viewers *look through* the medium), according to Bolter and Grusin, are the ways in which McLuhan's "the content of any medium is always another medium" works. In the rhetorical approach, these two logics can be considered as rhetorical strategies in the environment of digital media.

While Bolter and Grusin (2000) extend McLuhan's (1964) ideas by pondering the ways the old media are migrated into the new media, Manovich (2001) looks into the ways the previous mode of interaction between media and human (or cultural interface, as he calls it) is utilized in the new media. Manovich maintains that the language of new media is made up from already familiar cultural interfaces, namely printed word, cinema,

and general-purpose human-computer interface. The terminologies of printed word,

cinema, and human-computer interface (HCI) do not refer to a particular media object;

instead they point out a larger cultural tradition. Hence, according to Manovich, the

printed word does not refer to, for example, a novel or magazine, but refers to the

conventions of printed media, that is "a rectangular page containing one or more columns

of text, illustrations or other graphics framed by text, pages that follow each other

sequentially, a table of contents, and index" (p. 71). Likewise, cinema refers to "mobile

camera, representation of space, editing techniques, narrative conventions, spectator

activity" (p. 71). And HCI refers to "principles such as direct manipulation of objects on

the screen, overlapping windows, iconic representations, and dynamic menus" (p. 71).

These three cultural interfaces are the resources in organizing information, and therefore

the resources of meaning making in the new media.

As described above, Bolter and Grusin's remediation (2000) and Manovich's

cultural interfaces framework (2001) are very useful for analyzing the meaning making

process of websites. Although a new medium can be said to be remediation of older

media or uses the three cultural interfaces, the new medium never remediates or uses the

cultural interfaces in the same ways they are employed in the older medium. CNN's

website, for example, does not fully remediate its television shows. Not only does the

website carry only portions of the news or programs (clips) due to the bandwidth

limitation, it also incorporates texts and sounds. In other words, in the meaning making

process in the new medium, the older media or the three cultural interfaces interact and

negotiate with each other and form a kind of media hybridity. Furthermore, other factors

such as the available technology, economic considerations, as well as audience

constraints play an important role in the appearance of the new media.

In the context of website analysis, Fagerjord (2001, 2003) argues that the rhetoric

of websites is different from the rhetoric of older media, because the website is a

composite as well as compromise among media forms, technology, economy, and social

practices. Therefore, Fagerjord (2003) proposes what he calls rhetorical convergence,

which emphasizes "how different styles and sign systems are combined into complex

texts and thus also complex signification and reader selections and processes of semiosis"

(p. 307). To sum up, rhetorical convergence may be viewed as mathematic-equation-like,

as follows:

Topic + Intended Effect + Audience social setting + Audience's Use of

Media + Economy +Technology +Traditions and Conventions = Rhetoric

(p.315)

Fagerjord argues that by considering factors in the equation, one will gain a better

understanding the web as a medium.

A second approach will be briefly discussed is in a political economy and legal

framework, represented by Saphiro (1999) and Lessig (1999, 2001). Both writers argue

that cyberspace is falling into the hands of corporate interests, thanks to current

developments such as technologies that enable content providers control over access,

extension of intellectual property right to the cyberspace realm, and the growth of closely

controlled broadband networks (cable, satellite, etc.). Although cyberspace technologies

might empower individuals to regain control from big corporations and government,

those overpowering institutions will not relinquish their privileges. Instead they are trying

to limit the civic autonomy enabled by the digital technology. Saphiro points out that

while the personalization capability offered by many websites conveniences for the user,

at the same time it delivers individuals' data and preferences to big corporations for

future use. Every individual's activities in the internet can be tracked, recorded, and

analyzed, and subject to hermetic surveillance of commercial interests. For this reason,

Saphiro promotes, among other things, the establishment the PublicNet, the cyberspace

equivalent of public broadcasting, and public access for cable networks, as venues where

alternative voices and arts can be presented. He even goes further by suggesting that large

Internet sites and browsers be required to provide a PublicNet icon so that users are only

a click away from PublicNet. This would ensure that it is not neglected in the competition

with commercial media.

Meanwhile, Lessig dismisses the common belief that cyberspace cannot be

regulated, since cyberspace actually is comprised of codes that enable the software and

hardware functions to make cyberspace what it is. As Lessig (1999, p. 61) points out, ". .

. cyberspace will not take care of itself. Its nature is not given. Its nature is its code, and

its code is changing from a place that disabled control to a place that will enable an

extraordinary kind of control." According to Lessig, commerce is making the shift to

controlled cyberspace, by imposing Internet architecture and software codes that enable,

among other things, content encryption, online profiling, and closed infrastructure. Thus,

the battle between control and freedom in cyberspace is the battle about the architecture

of the Internet—that is about what code will be implemented in the Internet. First of all,

the Internet architecture should be made open and non-proprietary, such as the WWW. In this regard, Lessig believes that the government should play important roles in deciding whether an architecture would be regulable or not. Moreover,

> The government could take steps to transform an architecture from unregulable to regulable. . . . Government's power to regulate code, to make behavior within the code regulable, depends in part on the character of the code. Open code is less regulable than a closed one; to the extent that code becomes open, government's power is reduced. (p. 107)

Later, Lessig (2001) follows up his ideas by employing the concept of commons, a resource in which everyone enjoys equal and free access (another example of commons is public roads and highways). For Lessig, the Internet used to be a commons in which creativity and innovation were nourished by the freedom of using others' innovations and inventions. Nowadays, the patent and copyright laws on the Internet introduced by private companies have curtailed the commons nature of the Internet. Since, according to Lessig, free resources were origins of an astonishing development of creativity on the Internet, the impoverished commons will hinder creativity and innovation. Nevertheless, Lessig asserts that not every aspect of the Internet is commons. He admits that the architecture of the Internet is comprised of three layers: the physical layer of the Internet, the code layer, and the content layer. The physical layer, which is the telecommunication infrastructure, and the content layer, which consist of textual and audio-visual transmission, could be in the hands of private companies. However, the code layer, according to Lessig, should remain common for everyone to use. Unfortunately, the

commercial interests have conquered even the layer code, as Lessig comments

sorrowfully in the last sentences of his book:

> We move through this moment of an architecture of innovation to, once
>
> again, embrace an architecture of control--without noticing, without
>
> resistance, without so much as a question. Those threatened by this
>
> technology of freedom have learned how to turn the technology off. The
>
> switch is now being thrown. We are doing nothing about it. (p. 268)

<center>Cyberspace in the Perspectives of the Other</center>

As I mentioned in the Chapter 1, the thinkers on cyberspace discussed in this

thesis come from developed countries, especially the U.S. Therefore, unavoidably,

societies they describe are societies in the developed world. Whether the same impacts

will be experienced in the same way by societies in the developing and under-developed

countries of Asia and Africa is open for further investigation. Even for the advanced non-

Western societies with high Internet penetration but with different cultures, such as Japan

and Korea, the impact of the Internet might be different. When McLuhan (1962; 1964)

proposed that movable type print technology brought about the sense of individualism,

which in turn led to a sense of nationalism, we could ask whether the same impacts will

be found in communal societies in Asia and Africa. Although Anderson (1983) argued in

Imagined Communities that print capitalism gave birth to nationalism in the colonized

countries, he did not mention the effect of print technology in individualizing societies.

The same reasoning could be applied to theories on cyberspace. For example, Turkle's

(1984; 1985) notions on the multiplicity of identity among postmodern people as

reflected by, among other things, their interaction with the Internet and computer technologies, might not be experienced in the same way by societies in the developing countries. These questions so far largely remain unanswered. This amounts to a theoretical hole for societies that have experienced a "shortened time of literacy and modern period," now being exposed to postmodern technologies and cultural values.

Ziauddin Sardar (1996) is one among few who has tried to deal with these questions by conceptualizing the Internet as the new terrain where the West will continue to exercise its colonization power. Sardar argues the conquest of new territories has been an obsession of Western civilization, and therefore it is not surprising that metaphors such as "new frontier" and "new continent" have been used to describe cyberspace. For him, "To look at the inner reality of the West, the darker side it projects on to Other cultural and mental landscape, we must look at the West's latest conquest, the new domain that it has colonized: cyberspace" (p. 15). In the race to colonize cyberspace, according to Sardar, the Other is once again waiting passively to be dominated by the West. Furthermore, the conquests have followed a basic and linear pattern, where the military plays the pioneering roles. As we know, the Internet and its related technologies, such as virtual realities and simulation technologies, were previously developed by the military prior to its commercialization. According to Sardar,

> Once the military has opened up the new frontier, the settlers can move in to play
> their games, to explore, colonise and exploit the new territory taking us back to
> mythic times when there were other worlds (Islam, China, India, Africa, America)
> with resources beyond imagination and riches without limits. (p. 21)

Final Remarks

After presenting these notions of cyberspace, it is the time I offer my personal reflection. Essentially, my position is closer to Rheingold's "cautious-optimistic." Hence, I believe that the Internet as a new medium brings hopes to enhance human life, without neglecting the possibility that it might degrade human life. I agree with the late Ong (1986), a Jesuit priest and a prominent scholar on communication studies, when he said, "Technologies are artificial, but—paradox again—artificially is natural to human beings. Technology, properly interiorized, does not degrade human life but on the contrary enhances it" (p. 32). The properly interiorized technologies will enhance human life, in terms of social life as well as individual life and psychological well-being. Although Ong talks about writing as what he calls properly interiorized technology, I argue that his statement remains relevant and true for the Internet. Writing was a technology artificially introduced to the human life and was not free from objections—and Plato himself was one of the forceful critics. According to Ong (1986),

> The fact that we do not commonly feel the influence of writing on our thoughts shows that we have interiorized the technology so deeply that without tremendous effort we cannot separate it from ourselves or even recognize its presence and influence. (p. 24)

The question, however, is what needs to be done to make technology properly interiorized. Ong does not explain how writing is properly interiorized, let alone explain the interiorialization any other technologies. To answer the question, I believe, we have to carefully comb the history of technology, and set up the criteria of properly

interiorized technologies before starting to analyze technologies that have been introduced in human life. Such a study, of course, is beyond the scope of this thesis.

Nevertheless, at this point it is sufficient to follow Rheingold's suggestion that we need more widespread cyberspace literacy to prevent the society from falling into the dark side of cyberspace. It is the literates who have the responsibility to carefully safeguard the development of cyberspace by exposing possible dangers. Furthermore, we need these literate to go beyond Rheingold's suggestion by actively being involved in activities such as social movements, advocacy groups, consumer protections, policy watchdogs, etc. I believe it is the literates', as the French would say, *noblese oblige* to play the important roles in the ongoing process of interiorization of cyberspace technology.

A kind of map, despite being a rough and simple map, will be very useful to start a journey. This thesis has been attempting to draw a simple map of the notions on cyberspace to assist us, as users and critics, to influence and intervene in helping to shape cyberspace as an interiorized technology.

List of References

Anderson, B. (1983). *Imagined Communities: Reflections on the Origin and Spread of Nationalism.* London: Verso.

Barbour, I. G. (1993). *Ethics in an Age of Technology.* San Francisco: HarperSanFrancisco.

Bell, D. (2001). *An Introduction to Cybercultures.* London and New York: Routledge.

Benedikt, M. (1991). Introduction. In M. Benedikt (Ed.), *Cyberspace: First Step.* Cambridge, MA and London: The MIT Press.

Bestsellers. (1990, May 20). *The New York Times,* Section 7, p. 50.

Bolter, J. D., & Grusin, R. (2000). *Remediation: Understanding New Media.* Cambridge, MA: The MIT Press.

Brasher, B. (2001). *Give Me that Online Religion.* San Francisco: Jossey-Bass.

Brin, D. (1998). *The Transparent Society: Will Technology Force Us to Choose Between Privacy and Freedom?* Reading, MA: Addison-Wesley.

Brockman, J. (1996). *Digerati: Encounters with the Cyber Elite.* San Francisco: Hardwired.

Brook, J. and Boal, A (Eds.). (1995). *Resisting Virtual Life: The Culture and Politics of Information.* San Francisco: City Lights.

Bunt, G. R. (2000). *Virtually Islamic: Computer-Mediated Communication and Cyber Islamic Environments.* Cardiff: University of Wales Press.

Bunt, G. R. (2003). *Islam in the Digital Age: E-Jihad, Online Fatwas and Cyber Islamic Environments.* London and Sterling VA: Pluto Press.

Carlson, J. (2003, February 6). Internet is a Tool, Not a Crutch, Web Historian Says. *Iowa State Daily.*

Cobb, J. (1995, June). A Globe, Clothing Itself with a Brain. In *Wired* 3 (6).

Cobb, J. (1998). *Cybergrace: The Search God in the Digital World.* New York: Crown Publishers, Inc.

Davis, E. (1998). *Techgnosis: Myth, Magic + Mysticism in the Age of Information.* New York: Harmony Books.

Donnel, J. J. (1998). *Avatars of the Word: From Papyrus to Cyberspace.* Cambridge MA and London: Harvard University Press.

Dyson, E. (1997). *Release 2.0: A Design for Living in the Digital Age.* New York: Broadway Books.

Eisenstein, E. (1983). *The Printing Revolution in Early Modern Europe.* Cambridge: Cambridge University Press.

Ellul, J. (1964). *The Technological Society.* New York: Vintage Books.

Fagerjord, A. (2001). Rhetorical Convergence: Studying Web Media. Retrieved October 20, 2003 from http://www.media.uio.no/personer/andersf/prosjekt/dac2001.shtml

Fagerjord, A. (2003). Rhetorical Convergence: Studying Web Media. In G. Liestol, A. Morrison, T. Rasmussen (Eds.), *Digital Media Revisited: Theoretical and*

Conceptual Innovation in Digital Domains (pp. 293-325). Cambridge, MA: The MIT Press.

Fore, W. F. (1987). *Television and Religion: The Shaping of Faith, Values, and Culture.* Minneapolis: Augsburg.

Friedman, T. L. (2000). *The Lexus and the Olive Tree: Understanding Globalization.* New York: Anchor.

Friedman, T. L. (2003, June 29). Is Google God. In *The New York Times.*

Gackenbach, J., (Ed). (1998). *Psychology and the Internet: Intrapersonal, Interpersonal, and Transpersonal Implications.* San Diego: Academic Press.

Gates, B. (1995). *The Road Ahead.* New York: Viking.

Gendron, B. (1977). *Technology and the Human Condition.* New York: St. Martin's Press.

Greenspan, R. (2003, December 5). Western European E-Com to Reach Nearly €100B. *CyberAtlas.* Retrieved December 10, 2003 from http://cyberatlas.internet.com/markets/retailing/article/ 0,,6061_3287571,00.html

Hadden, J. K., and Cowan, D. E. (Ed.) (2000b). *Religion on the Internet: Research Prospect and Promises.* Amsterdam: Elsevier Science.

Hadden, J. K., and Cowan, D. E. (2000b). The Promised Land or Electronic Chaos? Toward Understanding Religion on the Internet. In J. K. Hadden and D. E. Cowan, *Religion on the Internet: Research Prospect and Promises.* Amsterdam: Elsevier Science.

Hafner, K. (2000, May 25). What Do You Mean, 'It's Just Like a Real Dog?' Interview with Sherry Turkle. *The New York Times,* p. G1.

Heim, M. (1993). *The Metaphysics of Virtual Reality.* Oxford and New York: Oxford University Press.

Internet Activities. (2003). *Pew Internet and American Life Project.* Retrieved December 10, 2003 from http://www.pewinternet.org/reports/chart.asp?img=Internet_Activities_11.6.03.htm

Kraut, R., et. al. (1998). Internet Paradox: A Social Technology that Reduces Social Involvement and Psychological Well Being? *American Psychologist,* 53 (9), pp. 1017-1031.

Kaku, M. (1998). *Visions: How Science Will Revolutionize the 21st Century.* New York: Anchor Books.

Keyboard Debate (1995, December 1995). *Newshour Online.* Retrieved February 11, 2003 from http://www.pbs.org/newshour/bb/cyberspace/cyberspace1227b.html.

Lessig, L. (1999). *Code and Other Laws of Cyberspace.* New York: Basic Books.

Lessig, L. (2001). *The Future of Ideas: The Fate of the Commons in a Connected World.* New York: Random House.

Lister, M., Dovey, J., Giddings, S., Grant, I., and Kelly, K. (2003). *New Media: A Critical Introduction.* London and New York: Routledge.

Lovelock, J. E. (1977). Gaia: a New Look at Life on Earth. New York: Oxford University Press.

Manguel, A. (1996). *A History of Reading.* London: HarperCollins Publishers.

Manovich, L. (2001). *The Language of New Media.* Cambridge, MA: The MIT Press.

Markoff, J. (1988a, April 18). Breach Reported in U.S. Computers. *The New York Times,* p. A1.

Markoff, J. (1988b, October 24). Computer Hacker in Britain Said to Enter U.S. System. *The New York Times,* p. D1.

Markoff, J. (1988c, November 4). 'Virus' in Military Computers Disrupts System Nationwide. *The New York Times,* p. A1.

Markoff, J. (1988d, November 5). Author of Computers 'Virus' is Son of NSA Expert on Data Security. *The New York Times,* p. A1.

Markoff, J. (1989, March 3). West Germans Raid Spy Ring that Violated U.S. Computers. *The New York Times,* p. A1.

McLuhan, M. (1962). *The Gutenberg Galaxy: The Making of Typographic Man.* Toronto: University of Toronto Press.

McLuhan, M. (1964). *Understanding Media: The Extension of Man.* New York: McGraw-Hill Book Company.

MIT Initiative on Technology and Self. (2002). Retrieved April 20, 2003 from http://web.mit.edu/sts/techandself/ welcome.html

Mitchell, W. J. (1995). *City of Bits: Space, Place, and the Infobahn.* Cambridge, MA: MIT Press.

Negroponte, N. (1995). *Being Digital.* New York: Knopf.

Newman, J. (1997). *Religion and Technology: A Study in the Philosophy of Culture.* Westport, CN and London: Praeger.

Noble, D. (1998). *The Religion of Technology: The Divinity of Man and the Spirit of Invention.* New York: Alfred A. Knopf.

Ong, W. J. (1982). *Orality and Literacy: The Technologizing of the Word.* London and New York: Routledge.

Ong, W. J. (1986). Writing Is a Technology that Restructures Thought. In G. Baumann (Ed.), *Written Word, Literacy in Transition,* pp. 25-50. Oxford: Clarendon Press.

 "Population Explosion." (2003). *Cyberatlas.* Retrieved November 1, 2003 from http://www.cyberatlas.internet.com/big_picture/ geographics.html

Putnam, R. D. (1995). Bowling Alone: America's Declining Social Capital. *Journal of Democracy,* 6 (1), pp. 65-78.

Ramo, J. C. (1996). Finding God on the Web. In *Time,* December 16, vol. 149 no. 1.

Rawlins, G. J. E. (1996). *Moths to the Flame: The Seductions of Computer Technology.* Cambridge, MA: The MIT Press.

Resnick, P., and Zeckhauser, R. (2001). *Trust among Strangers in Internet: Empirical Analysis of eBay's Reputation System.* Retrieved November 12, 2003 from http://www.si.umich.edu/~presnick/ papers/ebayNBER/index.html

Rheingold, H. (1987). *The Cognitive Connection: Thought and Language in Man and Machine.* New York: Prentice Hall Press.

Rheingold, H. (1991). *Virtual Reality.* New York: Summit Books.

Rheingold, H. (1994). *The Virtual Community: Homesteading on the Electronic Frontier.* New York: Harper Collins.

Rheingold, H. (1998). *Technology 101: What Do We Need to Know about the Future We're Creating.* Retrieved March 28, 2003 from http://www.rheingold.com/texts/techcrit/technophiles.html

Rheingold, H. (2000a). *The Virtual Community: Homesteading on the Electronic Frontier.* Revised edition. Cambridge, MA: The MIT Press.

Rheingold, H. (2000b). *Tools for Thought: The History and Future of Mind-Expanding Technology.* 2nd ed. Cambridge, MA: The MIT Press.

Rheingold, H. (2000c). Community Development in the Cybersociety of the Future. In D. Gauntlett (Ed.), *Web.Studies: Rewiring Media Studies for the Digital Age.* London: Arnold.

Rheingold, H. (2003a). From the Screen to the Street. *In These Times,* October 10. Retrieved December 10, 2003 from http://inthesetimes.com/comments.php?id=414_0_1_0_M

Rheingold, H. (2003b). *Smart Mobs: The Next Social Revolution.* Cambridge, MA: Perseus Publishing.

Rheingold, H. (2003c). The War over Innovation. *CIO Magazine,* Fall-Winter. Retrieved December 10, 2003 from http://www.cio.com/archive/092203/rheingold.html

Rhuskoff, D. (1994). *Cyberia: Life in the Trenches of Hyperspace.* New York: HarperCollins Publishers.

Roszak, T. (1986). *The Cult of Information: The Folklore of Computer and the True Art of Thinking.* New York: Pantheon Books.

Rosen, J. (2000). *The Talmud and the Internet: A Journey between Worlds.* New York: Farrar, Straus and Giroux.

Sardar, Z. (1996). alt.civilizations.faq: Cyberspace as the Darker Side of the West. In Z. Sardar & J. R. Ravetz (Eds.), *Cyberfutures: Culture and Politics on the Information Superhighway* (pp. 14-41). New York: New York University Press.

Sale, K. (1995). *Rebels against the Future: The Luddites and Their War in the Industrial Revolution.* Reading, MA: Addison-Wesley.

Shapiro, A. L. (1999). *The Control Revolution How the Internet is Putting Individuals in Charge and Changing the World We Know*. New York: PublicAffairs.

Shelley, M. W. (1987). *Frankenstein, or the Modern Prometheus.* Philadelphia: Courage Classics Books.

Slouka, M. (1995). *War of the Worlds: Cyberspace and the High-tech Assault on Reality.* New York: BasicBooks.

Smith, M. R. (1994). Technological Determinism in American Culture. In M. R. Smith and L. Marx, *Does Technology Drive History? The Dilemma of Technological Determinism,* pp. 1-35. Cambridge MA and London: The MIT Press.

Stahl, W. A. (1999). *God and the Chip: Religion and the Culture of Technology.* Ontario: Wilfrid Laurer University Press.

Staples, S. (2002, June 6). Techno Dissenter. *Ottawa Citizen,* p. F2.

Statistics for Online Purchases. (2003). *E-Paynews.com.* Retrieved December 10, 2003 from http://www.epaynews.com/statistics/purchases.html#45

Stoll, C. (1989a). *The Cuckoo's Egg: Tracking a Spy Through the Maze of Computer Spionage.* New York: Doubleday.

Stoll, C. (1989b, December 3). *The Cuckoo's Egg.* Transcript of the interview aired by C-SPAN. Retrieved February 11, 2003 from http://www.booknotes.org/Transcript/

Stoll, C. (1996a). *Silicon Snake Oil: Second Thoughts on the Information Superhighway.* New York: Anchor Books, Doubleday.

Stoll, C. (1996b, May 19). Invest in Humanware. *The New York Times*, p. A15.

Stoll, C. (1999). *High-Tech Heretic: Why Computers Don't Belong in the Classroom and Other Reflections by a Computer Contrarian*. New York: Doubleday.

Stoll, C. (2001, October). Who Needs Computers? *School Library Journal,* 47 (10), pp. 46-49.

Stone, A. R. (1995). *The War of Desire and Technology at the Close of the Mechanical Age.* Cambridge, MA and London: The MIT Press.

Swerdlow, J. L. (1999). The Power of Writing. *National Geographic,* 196 (2) , pp. 110-133.

Talbott, S. L. (1995). *The Future Does Not Compute: Transcending the Machines in Our Midst.* Sebastopol, CA: O'Reilly & Associates, Inc.

Teilhard de Chardin, P. (1959). *The Phenomenon of Man.* New York: Harper & Row Publisher.

Thompson, N. (2003, April 30). Hunting Hackers with a Virtual Jar of Honey. *The International Herald Tribune,* p. 14.

Tiles, M., and Oberdiek, H. (1995). *Living in a Technological Culture: Human Tools and Human Values.* London and New York: Routledge.

Turkle, S. (1978). *Psychoanalytic Politics: Freud's French Revolution.* New York: Basic Books.

Turkle, S. (1982). The Subjective Computer: A Study in the Psychology of Personal Computation. In *Social Studies of Science,* 2 (2), pp. 173-205.

Turkle, S. (1984). *The Second Self: Computers and Human Spirit.* New York: Simon and Schuster.

Turkle, S. (1995). *Life on the Screen: Identity in the Age of the Internet.* New York: Touchstone Book.

Turkle, S. (1996a). Construction and Reconstruction of the Self in Virtual Reality. In T. Druckery (Ed.), *Electronic Culture: Technology and Visual Representation*, pp. 354-365. New York: Apperture.

Turkle, S. (1996b). Rethinking Identity through Virtual Community. In L. H. Leeson (Ed.), *Clicking in: Hot Links to a Digital Culture,* pp. 116-122. Seattle WA: Bay Press.

Turkle, S. (1997a). Growing Up in the Culture of Simulation. In P. J. Denning (Ed.), *Beyond Calculation: The Next Fifty Years of Computing,* pp. 93-104. New York: Copernicus.

Turkle, S. (1997b). Multiple Subjectivity and Virtual Community at the End of the Freudian Century. *Sociological Inquiry,* 67 (1), pp. 72-84.

Turkle, S. (1999). Cyberspace and Identity. *Contemporary Sociology,* 28 (6), pp. 645-648.

Turkle, S. (2000). Who Am We? In R. Baird, R. Ramsower, S. Rosenbaum (Eds.), *Cyberethics: Social and Moral Issues in the Computer Age,*), pp. 129-141. Amherst, NY: Prometheus Book.

Turkle, S. (2002a). Sociable Technologies: Enhancing Human Performance when Computer is not a Tool but a Companion. In *Proceeding Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology, and Cognitive Science.* Retrieved February 12, 2003 from http://www.wtec.org/ConvergingTechnologies

Turkle, S. (2002b). *Whither Psychoanalysis in a Computer Culture?* Retrieved February 12, 2003 from http://www.kurzweillai.net/articles/art0529.html?printable=1

Turkle, S., Salamensky, S. I. (2001). Technotalk: E-Mail, the Internet, and Other "Compversation." In S. I. Salamensky (Ed.), *Talk, Talk, Talk: The Cultural Live of Everyday Conversation,* pp. 225-245. New York: Routledge.

Valovic, T. (2000). *Digital Mythologies: The Hidden Complexities of the Internet.* New Brunswick, NJ: Rutgers University Press.

Wald, M. L. (1995, April 30). A Disillusioned Devotee Says the Internet is Wearing No Clothes: Conversation with Clifford Stoll. *The New York Times,* Section 4, p. 7.

Wallace, P. (1999). *The Psychology of the Internet.* Cambridge: Cambridge University Press.

Weirtheim, M. (1999). *The Pearly Gates of Cyberspace: A History of Space from Dante to the Internet.* New York and London: W. W. Norton & Company.

Whitaker, R. (1999). *The End of Privacy: How Total Surveillance Is Becoming a Reality.* New York: New Press.

Young, K. (1998). *Caught in the Net: How to Recognize the Signs of Internet Addiction, and a Winning Strategy for Recovery.* New York: John Wiley.

Zaleski, J. (1997). *The Soul of Cyberspace: How Technology is Changing Our Spiritual Lives.* San Francisco: HarperEdge.