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The Virtual Stage:
Play, Drama, and Agency
in Communications

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A dissertation submitted to the Faculty of Graduate Studies
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy

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Abstract

This dissertation responds to a recent zeitgeist and climate of controversy surrounding issues of "virtuality" and "simulation". Such terms are treated as problematic and essentially contested when framed in reference to notions of a fixed observable "reality" rather than considered in terms of socially constructed facts, relationships and identities. The concept of the "virtual stage" advanced in this thesis, refers to the current historical moment in communications technology development as well as to the dramaturgical perspective which informs the theoretical approach and argument.

In this dissertation, virtual reality is treated not as a single technology or corpus of machines, but following conventions established in recent telepresence research as an experience which can obtain in varying degrees by means of a host of communications media.

Several complementary approaches are proposed and examined as a provisional framework for the study of emerging contemporary discourses of virtuality. Issues of virtuality are discussed from the perspective of historical cases which invite comparison and suggest a palimpsest of earlier technological modes of communication within contemporary situations. The social construction of technology approach

is introduced following recent suggestions for marrying this approach to the Canadian tradition of socio-historical study of communication technology. Finally, play and dramaturgical theory are offered as a model for understanding how community and individual identity are constructed and maintained in some forms of computer mediated communication (video games, MUDs, and IRC) while allowing for potentially plausible notions of human agency.

Résumé

Cette thèse se veut une réponse au débat que provoque présentement les notions de «virtualité» et de «simulation». L'utilisation de ces termes suscite une problématique lorsqu'ils font référence à une réalité observable plutôt qu'à une construction sociale, des relations et des identités. Le nouveau concept «virtual stage» proposé dans cette thèse, fait référence à l'actuel moment historique dans le développement des technologies de communication, ainsi qu'à des perspectives de dramaturgie développées dans notre argumentation théorique.

Dans cette thèse, nous traiterons de la réalité virtuelle non pas comme un seul ensemble de technologies ou de machines, mais en suivant les conventions établies dans le cadre des recherches actuelles sur la «téléprésence», en tant qu'expérience obtenue en variant les degrés de ressources de différents médias de communication.

Plusieurs approches complémentaires sont présentées dans un cadre théorique permettant l'analyse de l'émergence des discours contemporains sur la virtualité.

D'autre part, des questions sur la virtualité sont débattues en partant de l'étude de différents cas historiquement reconnus. En comparant ces derniers avec l'expérience de la

réalité virtuelle on a pu mettre en lumière un possible palimpseste des premiers modes technologiques de communication à l'intérieur de la situation technologique actuelle. L'approche de la technologie en termes de construction sociale est introduite en considération de récentes propositions théoriques suggérant l'hypothèse d'un lien entre l'approche socio-historique développée dans la tradition canadienne des études sur les technologies de communication qui deviendrait alors un outil nous permettant d'étudier cette flexibilité d'interprétation de l'émergence et de la convergence des technologies de communication. Enfin, une théorie s'inspirant du théâtre et de la dramaturgie est proposée comme modèle d'interprétation pour comprendre comment notre communauté et notre identité individuelle se construisent et se maintiennent dans les différentes formes de médiatisation de la communication informatique (jeux vidéo, «MUD's»; jeux à utilisateurs multiples sur réseaux informatiques et «IRC»; plateformes de conversation sur internet) alors qu'elle reconnaît la potentialité et la vraisemblance des notions d'intermédiaire humain.

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Introduction

A spate of literature has recently appeared which anticipates an era of "*Being Digital*" (Negroponte, 1995), or explores the "*City of Bits*" (Mitchell, 1995), "*The Virtual Community*" (Rheingold, 1993), or "*CyberSociety*" (Jones, 1995). Other offerings, such as *Silicon Snake Oil* (Stoll, 1995) and *Resisting Virtual Life* (Brook and Boal, 1995), reinforce the zeitgeist of virtuality if only by resistance or opposition to it. Virtuality is perhaps another incarnation of the metaphor of "virtual reality" which Brenda Laurel suggested was already obsolete in 1991.¹ However, the drive toward simulation and the construction of artificial realities persists. Sherry Turkle (1995) sees this interpretive evolution as part of a more general discursive trend from a modernist preoccupation with calculation and depth (i.e. a drive to search for root causes) to a postmodernist interest in simulation and surface.² Postmodernism and its characterizations in the above and other literatures³ through references to fragmentation, untethered semiotics and decentered subjectivity, are threads which vividly embroider the literature of virtuality and its relata. Our selves are often described as extended cyborgs (Mitchell, 1995). Or, as Derrick De Kerckhove (1995), suggests, extending the extension metaphor of mediation theory,⁴

¹ Laurel, B. 1993. *Computers as theatre*. p. 200.

² Turkle, 1995, p. 42

³ See in particular the widely cited "Postmodernism. or the cultural logic of late capitalism." Fredric Jameson. *New Left Review*. 146., July-August 1984.

⁴ See discussion below.

"all electronic technologies, from the telephone to VR, extend our physical being well beyond the limits of our skin."⁵ Such notions of self, married to a new-found preoccupation with surface, make it seductive to see our extended and multiple selves as disengaged from their attachments to a physical reality, with little consideration of what is sacrificed in the process. The thesis of the work which follows argues that for such post-structural or postmodernist⁶ conceptions to be meaningful or interpretable, they must be grounded. It takes the view that essentializing the above metaphors poses a threat to tenable notions of human agency.

The title, "the virtual stage" is meant to reflect the current techno-historical moment explored in this dissertation, as well as the dramaturgical perspective from which it is considered. The dissertation contributes to a discourse in history, technology and communications, following the tradition of work by Harold Innis, Marshall McLuhan, Eric Havelock, Walter Ong, Derrick de Kerckhove and others who have explored the relationship between culture and technologies of communication. Unlike much of the work in this tradition, however, the matter of a historical perspective on technology is problematic in my work, as the specific technology examined here, virtuality, has not been fully elaborated in the current historical moment. As a result, it is defined with great difficulty by way of reference to a specific

⁵ De Kerckhove, 1995, *The Skin of culture*. p. 202

⁶ While the terms post-structuralist and postmodernist are often used interchangeably (e.g. in Turkle 1995, p. 15, it is suggested that the latter emerges from the former) here postmodernism is taken as a descriptor of a historical period in popular culture, while post-structuralism refers to a discourse that grew out of the work of Saussure (elaborated more fully in Chapter 2 below).

material technology such as a corpus of machines. Perhaps, fittingly, it can be said that virtuality is as much a discursive (virtual) technology as a material one. Thus this dissertation examines virtuality largely in this discursive, or socially constructed capacity. The dissertation also connects with work coming from the Chicago School, applying notions of symbolic interactionism, transactionality and considering social interaction from a dramaturgical perspective. The theory of social construction and elaborations of John Dewey's theory of transactionality as well as play theory and dramaturgy are offered as alternatives to post-structuralist semiotics and postmodernist notions of fragmented identity and decentered subjectivity. The thesis does not dispute increasingly popular notions of fragmentation and decentering, but frames them as constructions, socially negotiated and legitimated by agents with individual consciousnesses, rooted in an individual physiology.

The thesis begins by considering the difficulty of defining "virtual reality" as a technology, offering the view of Biocca and Levy (1995) and Steuer (1995) that VR be seen as "the experience of mediated presence, or telepresence." Next, Steuer's and Sheridan's models for evaluating mediated presence through the criteria of vividness and interactivity are considered. Such models which define VR as an experience rather than a medium are evaluated and critiqued for framing the experience of "virtual reality" against notions of a stable or fixed "reality." The theory of layered or hierarchically ordered institutional facts in socially constructed reality, from Searle (1995), married with an

elaboration of a theory of transactionality, from Csikszentmihalyi (1975, 1981, 1988), form the basis of this approach. Searle's theory of socially constructed reality as well as Csikszentmihalyi's notions of transactionality and flow are considered for the insights they offer into how identities and institutional facts are socially constructed. In this view, the metaphor of a monolithic reality and mimetic simulation is problematic. "Socially constructed realities" are viewed as more usefully understood in terms of a continuum, representing brute reality at one extreme and provisional or playful realities at the other, with realities possessing varying degrees of institutional stability in between. This transactionality continuum is added as a third dimension to Steuer's categories of vividness and interactivity to reflect the provisional character of socially constructed realities and the dynamic, collaborative process of their construction and maintenance.

In Chapter 2, virtuality, in the broader sense suggested in chapter 1, is considered from a historical perspective identifying a number of proto-virtual realities. Heim's erotic/rationalist ontology of cyberspace is critiqued. Plato's cave allegory provides a segue to a discussion of Paleolithic cave paintings and rhapsodic poetics as sensorially rich experiences of presence and experiments in sensory information storage. Classical memory arts and Gothic cathedrals are presented as attempts to define space and knowledge in rationalist terms in VR experiments of limited success. They also offer an illustration of best laid plans of rationalists being re-appropriated and re-configured through

social use. Text, which Bolter (1991) has called the defining metaphor of the last four centuries is discussed as being perhaps not the "universally" pervasive template it is sometimes considered in the literature. Post-structuralism, seen as the zenith of the textualist virtuality project, is re-scrutinized, the palimpsest of earlier modes of mediation sought beneath the textualist template. The legacy of post-structuralism in digital discourses is evaluated. The project of the social construction of technology (Bijker et al, 1991) is considered as an alternative. This approach is seen as inviting the consideration of interpretive flexibility in the early stage of diffusion at which technologies of virtuality find themselves. It also allows for the consideration of contingency as playing a necessary role in technological innovation as well as the contingent intersection of a wide number and variety of communities of social actors.

In Chapter 3, a thin history of the contemporary communications context is sketched to consider relevant social actors and actor communities. Competing visions of VR are presented as well as competing visions of the role that the Internet will play in the much anticipated digital future. A diverse set of influences is sampled, from depictions of pervasive VR in the science fiction of Neal Stephenson to the pervasive digitalization of objects and persons in Hollywood cinema, and other industries of visual representation. Experiments in the hypermedia of interactive games are explored, as well as initiatives to coax a convergence between the media of film and the videogame.

Chapter 4 begins with an overview of discourses on play and a presentation of some of the theoretical issues underlying them. The capacity of human beings to routinely perform symbolic transformations and to consensually entertain provisional realities is seen as testing the conventional boundaries between "play" and "not play," between "virtual reality" and reality." Play is discussed as a framing or contextualizing activity having an executive function in language. Play highlights the capacity of human beings to provisionally construct symbolic selves, symbolic relationships and symbolic realities. In Chapter 5, dramaturgical theory is explored, teasing out some of the complexity in what Goffman (1983) calls the "interaction order," maintaining the importance of collaboration, or altercasting and, through Kenneth Burke's Dramatistic pentad, exploring the construction and maintenance of individual identity and social reality. Finally, In chapter 6, computer mediated communications are considered from a dramaturgical perspective. Through the frame of dramaturgy, the construction of identity and institutional reality in computer mediated communications (CMCs) is discussed. Turkle's suggestion of the *prima facie* validity, or what she calls "interface value" of many developments in artificial intelligence is evaluated and Laurel's notion of dramatic interface is presented as a model upon which even mundane CMCs can be framed. Videogame play is discussed in terms of subjective compression of time and through the theory of transactionality presented in chapter 1, including Csikszentmihalyi's flow theory and Meyer's critique of it. Issues

of identity are considered in terms of Newsgroup languages and MUD personae. The consequences of investment in virtuality are considered in terms of altercasting in Internet Relay Chat (IRC). The dramaturgical approach to CMCs is seen as a way of reckoning with increasingly popular notions of decentered subjectivity while retaining a tenable model of human agency.

Section 1

Social Construction and Virtuality

Chapter 1

Problems of definition

Defining virtual reality

Virtual Reality (VR) is a term which has been in circulation since the mid-eighties⁷ to promote a wide variety of electronic products as well as to give high-tech hype to everything from fashion shows to on-line shopping. In 1991, in his book *Virtual Reality*, Howard Rheingold predicts that VR "has the potential to develop very quickly from scientific oddity to a way of life."⁸ Rheingold's prediction is being realized in the mid 1990s, in popular culture at least, as suggested by magazines such as *VRWorld*, in May of 1995, announcing that VR had gone "mass market." However, the mass popularity that VR is enjoying is not unproblematic to arriving at a precise definition of what is meant by the term, nor has the appending of the adjective "virtual" to everything from classrooms to money. The difficulty of definition has been seen by some as an obstacle to serious scholarship:

Virtual-being such in essence or effect though not formally recognized or admitted... the definition seems clear enough. Yet it's one of those words that slip their mooring and run loose on the swirling waters of fad.⁹

⁷ Jaron Lanier is credited with coining the term in 1989 (Rheingold, 1991). Steward Brand uses the term repeatedly in *The Media Lab* (1987).

⁸ Rheingold, H. (1991). *Virtual reality*. p. 60.

⁹ Carlson, 1992, p. 53

In the study of technology, one would expect a precise description, or at least some reference to the material technology being studied. There is usually hardware attached to popular notions of VR. The image of head-mounted displays (HMDs), popularized in popular films such as *The Lawnmower Man* (1992) or popular music videos such as Aerosmith's *Its Amazing*, have helped to establish the HMD as an icon akin to Alice's looking glass, a window on another world. But can any technology live up to such expectations? An interesting irony can be found in an advertisement for clothing designer René Lezard which features a two-page image of three young men wearing business suits as well as headmounted displays, the by-line reading: "REALITY CAN BE SIMULATED. REALLY GOOD SUITS CAN'T."¹⁰ It is paradoxical that the advertisers capitalize on an assumed public expectation of VR's potential, yet, at the same time, show a tacit awareness of its limitations.

Brenda Laurel is one industry pundit who feels that the popularity of VR has raised "unrealistic" expectations. Laurel, an Atari alumnus, was somewhat more disparaging of the VR zeitgeist¹¹ in the early 90s than was Howard Rheingold:

[M]any of us involved began scrambling to change our shingles from virtual reality to something roughly synonymous but less tainted--telepresence, augmented reality, immersion technology. Anything to get some distance from the all too vivid spectacle of the hype-fueled, VR road and media

¹⁰ Gentleman's Quarterly. Feb. 1996, pp. 19-20, See Appendix 1.

¹¹ Laurel prefers the term "meme," borrowed from Richard Dawkin's *The selfish gene*. It refers to a "word, idea, concept, or fashion that spreads rapidly through a culture" (Laurel, 1993, p. 200).

show that rocketed VR pundits to the pinnacle of pop culture and then sent us burning back into the atmosphere, noticing too late that we were in the decaying orbit of a fad.¹²

Laurel's description of industry trepidation is echoed in academic circles, partially because, as Patricia Carlson (1992) suggests, VR is a hard technology to define.

Notwithstanding Laurel's anticipation of decaying popularity, VR's vividness in the popular imagination has grown. Biocca, Kim and Levy (1995) charted the frequency of use of the terms "*simulation*" and "*virtual reality*" separately and in combination in 96 daily newspapers and 176 news and business magazines between January 1988 and December 1993. While the term *simulation* showed a consistently moderate decline in frequency of use, use of the terms in combination showed a moderate increase. Use of the term *virtual reality* alone saw its sharpest increase (an increase of 300%) between July 1992 and December 1993.¹³ These statistics suggest that while certain experts were predicting its demise, popular culture was only just warming up to the idea of VR.

Rheingold's initial enthusiasm about VR's potential to become a way of life hinged on the view that VR entailed converging technologies.¹⁴ Just as VR technology represents the convergence of technologies of visual display and real-time rendering, of stereoscopy, of motion detection, of information storage and retrieval, it also represents a convergence of discursive

¹² *Ibid.*

¹³ "The vision of virtual reality." In F. Biocca & M. Levy (1995), *Communication in the age of virtual reality*. p. 6.

¹⁴ Rheingold, 1991, p. 60.

constructions and newly developed, or yet-to-be-realized, enabling technologies.

One explanation for the current lack of definition of VR is the stage of diffusion at which the technologies associated with it find themselves. Social (and discursive) factors are seen as playing their greatest role in the early stages of any technological innovation. Valente and Bardini (1995) note that in the early stages of diffusion, technologies are more greatly "influenced and structured by social systems and actors in interaction."¹⁵ Rogers (1983) notes that certain technologies diffuse in clusters (e.g. the diffusion VCRs is linked to advances in television technology). The popularization of the VR meme along with the potential clustering of VR technologies make the matter of prediction difficult. Or quite simply, as Valente and Bardini suggest, "it is still unclear exactly what VR will be."¹⁶

Defining VR as a medium

Media (or mediation) theory is a tradition in communications studies popularized by Marshall McLuhan (1964).¹⁷ In mediation theory technologies are characterized as extensions of the human sensoria (McLuhan, 1964; Hall, 1976; Beniger, 1986) or prosthetics (Weizenbaum, 1976) which augment human physical capacities (e.g. the telescope and microscope for sight; the

¹⁵ "Diffusion of VR technology." Valente and Bardini (1995), p. 304.

¹⁶ *Ibid.* p. 305.

¹⁷ McLuhan is enjoyed a renewed popularity in the context of new the digital media. His musings have been regularly quoted in *Wired* magazine, for example, a publication dedicated to chronicling the communications revolution.

telephone and radio for hearing; film and television for both). McLuhan's interest in media follows the work of Harold Innis (1951; 1972) and is arguably presaged by the work of Lewis Mumford (1934) in which the society shaping capacities of media technologies are explored. VR would seem an excellent candidate for media theorists in that, as Rheingold suggests, representing the convergence of a wide variety of media technologies, it has the capacity for becoming a way of life, and in addition, as Benjamin Woolley (1992) stresses, it raises serious ontological and epistemological questions, questions of what is real, and of what is true.¹⁸ But precisely because it raises such essential questions, the question of defining VR as a medium would seem all the more critical.

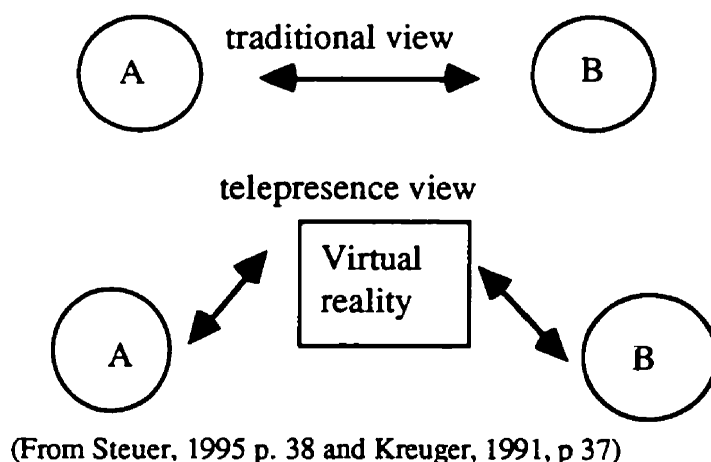
Steuer (1995), in surveying several existing definitions (e.g. Coates, 1992; Greenbaum, 1992; and Kreuger, 1991), notes that most definitions of VR include descriptions of electronically simulated environments, with electronic gloves and goggles as a means to access these environments. In Steuer's view, traditional mediation theory is inadequate to the task of giving us an understanding of what kind of "media" VR would be because it is difficult to classify a medium, as "VR" or "not VR" depending on a corpus of machines. The convergence of media technologies that Rheingold suggests gives VR its enormous potential also make it a fuzzy media to define. There is no definite conceptual unit of analysis. Thus, Steuer asks: "where do we look to identify a single virtual reality? Examining the apparatus alone does not

¹⁸ Woolley, B. (1991). *Virtual Worlds*.

seem adequate to this purpose."¹⁹ Steuer, like Laurel and others of his contemporaries has been tempted to abandon the term, but instead, he opts to define VR as a "particular type of experience" rather than as a collection of hardware.

Thus, Steuer bases his definition of VR on the concepts of "presence" and "telepresence,"²⁰ the former referring to the perception of being "in" an environment, the latter referring to the perception of being in an environment when the environment is mediated through a communications medium. Thus, Steuer defines VR as "a real or simulated environment in which a perceiver experiences telepresence."²¹

Steuer's model is a departure from traditional mediation theory in that, following the work of Myron Kreuger (1991), it focuses on the individual's relationship with the medium rather than on the medium as a conduit for the transfer of information, as suggested in the following diagram:



(From Steuer, 1995 p. 38 and Kreuger, 1991, p 37)

¹⁹ Steuer, (1995). p. 34.

²⁰ The term telepresence in an earlier incarnation was coined by Marvin Minsky (1980) to refer to teleoperation systems for remote manipulation of physical objects.

²¹ *Op cit.* p. 37.

MIT's Thomas Sheridan (1992) has also opted for a model of VR which emphasizes the quality of experience over an assemblage of machines. He conceptualizes presence according to three determinants: "1) the extent of sensory information (the transmitted bits of information concerning a salient variable to appropriate sensors of the observer); 2) control of relation of sensors to environment (e.g., the ability of the observer to modify his viewpoint for visual parallax or visual field, or to reposition his head for binaural hearing, or the ability to perform haptic search); and 3) ability to modify the physical environment (e.g., extent of motor control to actually change objects in the environment or their relation to one another)."²² The following diagram illustrates Sheridan's model including the ideal notion of "Perfect presence."²³

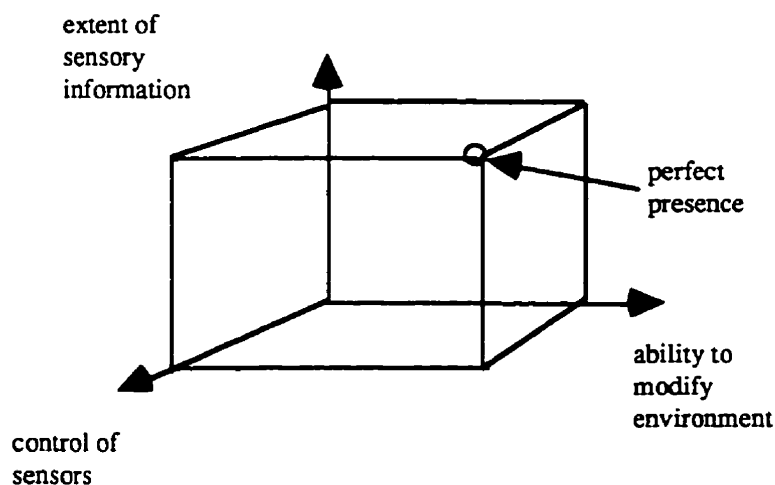


Fig. 3 (from Sheridan, 1992)

²² Sheridan, T. (1992). p. 122.

²³ Perfect presence is a concept suggested by Ivan Sutherland when he wrote idealistically of the ultimate display controlling the existence of matter.

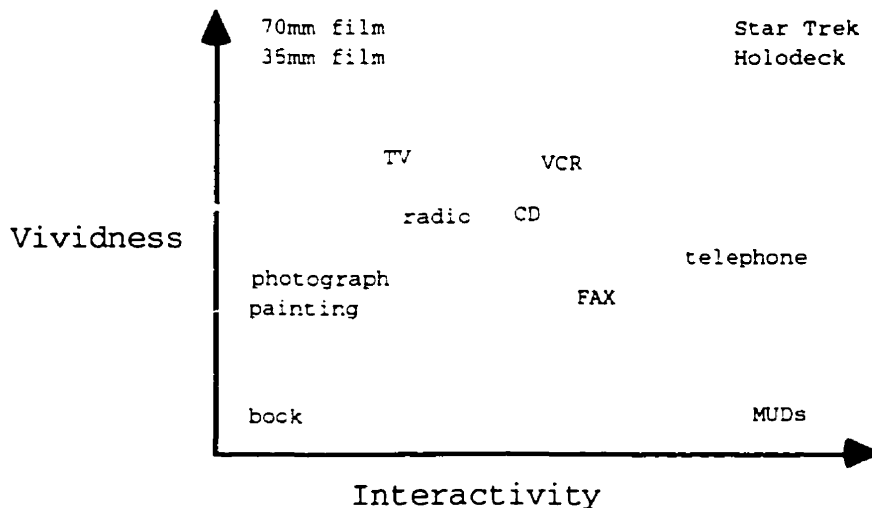
Determinant (1) reflects the sensory richness of the mediated experience of presence, a determinant elsewhere referred to as vividness (Heim, 1993; Steuer, 1995). Determinants (2) and (3) reflect the control over the environment that mediated presence affords the "interactant" in the VR. Sheridan uses the term "observer," here, a term which unfortunately does not capture the spirit in which this so-called "observer" is an active participant in the experience. Elsewhere in the literature (Naimark, 1990; Laurel, 1991; Rheingold, 1991; and Heim, 1993), determinants (2) and (3) have tended to fall into the category of "interactivity" perhaps better reflecting the participatory involvement of the VR experience.

In 1983, Myron Krueger (1991),²⁴ inspired by Hobbes's model of the world as a giant machine, suggested the term "artificial reality" to refer to an environment which, with the aid of a computer, would be responsive to human being's needs and desires. Artificial reality was not conceived of as a form of alterity. Rather, Krueger argued that the reality of human beings, with automobiles, televisions and temperature modulated rooms, was already largely an artificial reality. Thus, he saw his initiatives more as extensions of that artificial reality than a qualitative departure from it.

Likewise, Steuer considered the possibility of evaluating all media according to his criteria for telepresence. A telephone conversation or a letter from a friend can invoke a sense of

²⁴ Krueger, M. (1991). p vii.

virtual presence. Live recordings can recreate the sense or feel of the concert hall. Indeed, Steuer suggests, all media can be evaluated in relation to telepresence by placing them within the dimensions of vividness and interactivity, as in the following diagram:



[Adapted from Steuer, Biocca and Levy (1995) p.52]

Vividness and interactivity

Just as defining VR is problematic, the indices "vividness" and "interactivity" are not without their difficulties. Use of the term "vivid" as an index of experiences of telepresence has been criticized by some scholars because it is usually associated with the visual sense. Jones (1993), for example, argues that literature on VR tends to privilege the visual. Steuer, however, maintains that the "vividness" dimension in his model refers to the differential capacity of a medium to produce a "sensorially

rich mediated environment." Thus, "vividness" draws associations from its Latin origins for "alive."²⁵ Rather than emphasizing the visual, Steuer considers vividness in terms of the five distinct perceptual systems outlined by Gibson (1966): the basic orienting system (e.g. balance), the auditory system, the haptic system, the taste-smell system, and the visual system.

The problem of potentially privileging one sense over others does not disappear with this broadened "sense" of vividness, however.²⁶ Another issue which has been raised is that each of these perceptual systems would draw individually on processing resources. Thus, there would necessarily be a trade-off or opportunity cost in computing resources with increased acuteness for any of these sensorial systems, or with the addition of increasing numbers of them.

Michael Heim (1993) makes a similar observation in reference to the trade-off between resources required to create vividness and those required to allow interactivity, cautioning that "with every gain in fixed intelligibility there is a corresponding loss of vivacity."²⁷ In practical terms, this means simply that there is a trade-off between the computing resources needed to create a high resolution environment and the resources required to allow the interactant control within that environment. While on the surface this seems to be a temporary constraint related to the limits of current computer technology, the problem is not

²⁵ E.g. the Latin *viva* used in romance languages for the English: "Long live!"

²⁶ In traditional mediation theory, particularly in the case of McLuhan, the disparity of sensoria in media has been seen as a central issue.

²⁷ Heim, M. (1993). p. 68.

necessarily remedied as computing resources become greater.

Indeed, the issue becomes a philosophical one. Asking if there is any limit to the sensory richness we can require of our environments or to the degree of control we would wish to exercise over them is tantamount to asking if there are any limits to the human imagination.²⁸

"Interactivity" while useful in reflecting the participatory aspect of presence, is perhaps an even more problematic term than "vividness." The "interactivity" dimension in Steuer's model reflects the degree to which "users of a medium can influence the form or content of the mediated environment."²⁹ Similar distinctions have been made by Naimark (1990), Laurel (1991), Rheingold (1991) and Heim (1993). Steuer further elaborates the definition by considering three variables in interactivity: speed, or response time; range, or number of attributes of an environment which can be manipulated; and mapping, or the manner in which users' actions are connected to the actions in the mediated environment. Laurel's definition of interactivity is also elaborated according to three similar variables: frequency, or how often a user can interact; range, or how many choices are available; and significance, the extent to which choices influence the environment.³⁰ Laurel additionally qualifies her definition by stressing the *prima facie* validity of the VR experience, that users feel they are participants. Laurel's concern is reflected

²⁸ Heim's more generally caveat may be taken to suggest that the more we attempt to exercise formal control over our environment, the more we limit ourselves in our capacity for new experience.

²⁹ Steuer, J. (1995), p. 41.

³⁰ Laurel, B. (1993), p. 20.

in Steuer's suggestion of intrapersonal variables in his indices, noting that there would be variation across individuals, considering, for example, an individual's background knowledge.³¹ Additionally, these could relate to attentional control obviated through practice.³² However, Steuer argues that his indices of interactivity and vividness would not need to take into account intrapersonal variables but would be a measure of telepresence generalized in terms of all potential interactants. This reduction of human experience to only what is generalizable may prove to be one of the weaknesses of the model.

This shortcoming becomes apparent when "interactivity" is given further consideration. If *intrapersonal* variables are an area of confusion with regard to interactivity then *interpersonal* variation is an even greater area of concern. Often the term "interactivity" is used to mean the capacity to control the environment on one hand (e.g. change direction, or fire a weapon in the case of interactive games, or make programming choices in the case of interactive television) and the capacity to interact with other individuals on the other: in Internet Relay Chat (IRC) or multi-user dimensions (MUDs). These two seemingly distinct interpretations are often offered interchangeably or indiscriminately.

There seems to be an inherent problem with measuring aspects of an experience of telepresence with questionable or at least unclear criteria. The problem may merely reflect the general

³¹ See Winograd, T. and Flores, C. (1986).

³² See for example J. J. Gibson (1979) on automatic and controlled processes.

inadequacy of formal models in accounting for human experience. Nevertheless, such models can be valuable for the insights that the process of elaborating them itself offers.

The confusion around the term "interactivity" sheds light on the highly subjective character of interactivity and vividness in intrapersonal terms, and its socially constructed character in interpersonal terms. Steuer's and Sheridan's models do not address these problems because they frame virtual reality in relation to a fixed reality. In the discussion which follows an attempt will be made to approach a theory of virtuality through a more flexible view of "reality," one in which "realities" are seen as social constructions.

Interaction, transaction, social construction

Recognition of the deficiency of the term "interaction" as it is often used in VR literature is presaged by John Dewey and Arthur Bentley (1975) [1949] in *The Knowing and the Known*. While Dewey and Bentley are primarily exploring an epistemology of science, their chapter on "transaction and interaction," is germane to a discussion of virtuality.

In response to Compe's appraisal of three developmental stages of epistemology, the theological, the metaphysical and the positive, Dewey and Bentley suggest an alternative three historical levels of presentation of knowledge of the world: Self-action, Interaction and Transaction.³³ The category self-

³³ Dewey J. and Bentley A. (1975). pp.120-121

action corresponds to the Aristotelian view in which objects are seen as possessing their own "forces" and "essences." Interaction corresponds to Newtonian mechanics in which objects are seen as functioning in relation to other objects and forces in nature. The transactional view is a departure from the first two epistemological models in that it deems knowledge to be dynamic. Thus, for Dewey and Bentley, "the known" is tied to "the knowing." The implication of this view is that objects and physical forces and what can be known about them is provisional.

In the context of virtuality, interaction refers to human involvement with, or control over, objects, processes or other human beings. Dewey and Bentley's discussion of "interaction" (referring to the epistemological break with Aristotle made by Galileo, Descartes and Newton in asserting that an external forces are required to put an object in motion) would seem of little relevance in clarifying the use of the term in relation to telepresence. However, their perspective, particularly in characterizing "transactions" as provisional, cuts to the heart of the shortcomings of the term "interactivity." Transaction in Dewey and Bentley's discussion suggests that observational instances not be seen merely as an interaction of objects and forces with unique "essences," but that observational instances reflect a multiplicity of interrelations: "Our assertion is the right to see in union what it becomes important to see in union and in separation what it is important to see in separation."³⁴

³⁴ *Ibid.* p. 123.

In addition to underscoring the complexity and contingency underlying observational instances (or apropos of virtuality, instances of presence), transaction has a more important implication. It is an aim to consider the observer's relation or interaction with the observation, placing observers/interactants within the observational instance, an arguably more appropriate place for them in the clearly immersive environment which telepresence suggests.

The notion of transaction is particularly germane in addressing the larger questions which virtuality raises, such as those suggested by Woolley: what is real and what is true. Dewey and Bentley broach these questions citing a discussion between Albert Einstein and Neils Bohr which reflected the attitudes of each toward the role of the observer in the process of observation. Einstein held to a rationalist dualism between physical concepts and a physical reality, maintaining that while "physical concepts are free creations of the human mind... the concepts of the pure numbers are creations of the thinking mind which describe the reality of our world."³⁵ Bohr, however, suggested that Einstein's "criteria of physical reality" contained "an essential ambiguity" and while relativity had brought about "a modification of all ideas regarding the absolute character of physical phenomena" still needed was "a radical revision of our attitude as regards physical reality."³⁶ Dewey and Bentley conclude thus:

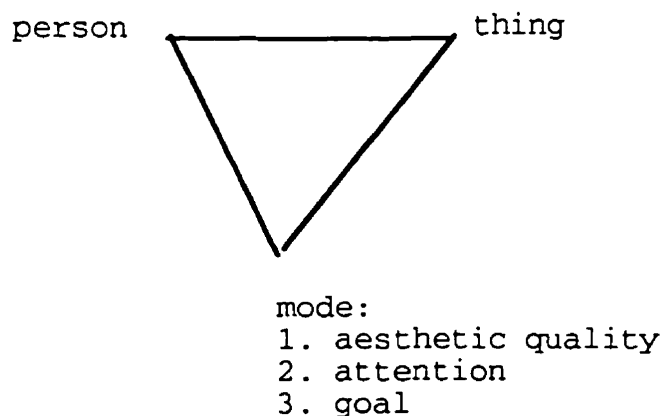
³⁵ Einstein in a letter to Bohr cited in Dewey and Bentley (*op cit.* p. 124)

³⁶ *Ibid.*

What is involved here is an underlying, though not explicitly developed, conflict as to the manner in which mathematics (as symbolic) applies to physics (as fact seeking). This in turn involves the organization of symbol with respect to name among the linguistic behaviours of men.³⁷

Transactionality and identity

Drawing from *The Knowing and the Known*, Csikszentmihalyi and Rochberg-Halton (1981) attempted to elaborate Dewey's notion of transaction to show the dynamic through which the meaning of "things" is constituted. They suggest three elements of transactions: person, thing, and mode of interaction; and three modes of interaction: aesthetic quality, attention, and goal.³⁸ The following diagram illustrates this triadic formulation:



[From Csikszentmihalyi and Rochberg-Halton p. 175]

³⁷ *Ibid.*

³⁸ Csikszentmihalyi and Rochberg-Halton (1981). p. 175.

The aesthetic mode reflects Dewey's distinction between recognition (mere instantiation of pre-established schemata) and perception (receptivity to objects which allows for pre-established schemata to be altered, expanded or adjusted). The second element, attention, is a variable component of transactions. Csikszentmihalyi and Rochberg-Halton suggest that, through the quantity and quality of attention to them, objects become psychically charged, that is, acquire transitory value or meaning, both to the individual, or additively within a culture.³⁹ Csikszentmihalyi and Rochberg-Halton further note that attention is a limited resource, that is, that attention to one object will mean a lack of attention to another. Additionally, they suggest that the study of the domestic objects one surrounds oneself with might lead to insights into "the patterns of attention that help to structure the everyday consciousness."⁴⁰

One of the most interesting distinctions which comes out of the attentional aspect of this view of transactions is the notion of "flow," a phenomenon Csikszentmihalyi (1975) noted while studying people's level of involvement in leisure and work activities. "Flow" refers to an individual's self-evaluation of feeling absorbed or lost in an activity. Csikszentmihalyi and Rochberg-Halton suggest that every conscious experience can be seen as lying on a continuum with boredom at one extreme and anxiety at the other, with flow represented near the center:

³⁹ *Ibid.* p. 4-5

⁴⁰ *Ibid.* p. 185.

Boredom

Enjoyable diversion

Anxiety

←—————→

The flow experience brings a concomitant ego transference,⁴¹ a loss of self which may account the flow experience often being seen as addictive and escapist. Csikszentmihalyi and Rochberg-Halton note that the escape motive is at the heart of many everyday activities:

Thus through play the gambler suspends concern for economic actualities and the wisdom of the marketplace; the athlete ignores pain and fatigue; the musician disregards the criteria of usefulness that may otherwise apply to everyday life.⁴²

They also cite Einstein as agreeing with Schopenhauer that "one of the most powerful motives that attracts people to art and science is the desire to escape everyday life."⁴³ They caution however that extreme levels of self absorption create an imbalance in the self, which they see as again tripartite, made up of a personal, a social, and a cosmic self.⁴⁴ Thus, the third element of transactions, the "goal" component is seen as the drive toward cultivation of the three selves. In this aspect, interaction with objects is not only seen as constitutive of the individual consciousness by concurrent association, but represents a potentiality, the individual's intention of becoming through interaction:

⁴¹ *Ibid.* p. 180.

⁴² *Ibid.* p. 245.

⁴³ *Ibid.*

⁴⁴ *Ibid.* p. 191.

As the cluster of objects one values solidifies, so do the meanings one derives from experiences with them. Different selves emerge around goals embedded in cherished belongings through habitual interactions.⁴⁵

Csikszentmihalyi and Rochberg-Halton's elaborations of Dewey's theory of "transaction" serve to highlight several points of importance that will be explored later in this thesis. They note the degree to which intrapersonal and interpersonal interactions give meaning to material reality echoing Hanna Arendt (1958) who suggested that for *homo faber* the world is as much a symbolic entity as a material one.⁴⁶ They also underscore the importance of the human capacity and motivation to escape everyday reality (exemplified by play). And finally they stress the importance of viewing the self as a private and social entity, an agent which both gives meaning and finds meaning through its interactions with things and others.

Constructing social reality

Psychoanalyst Paul Watzlawick introduces his book *How Real is Real?* with an assertion which resonates with Dewey and Bentley's closing remarks in "interaction and transaction":

[O]ur everyday, traditional ideas about reality are delusions which we spend substantial parts of our daily lives trying to shore up, even at the substantial risk of trying to force facts to fit our definition of reality instead of vice versa. And the most dangerous delusion of all is that there is only one reality. What there are, in fact, are many different versions of reality, some of which are contradictory, but all

⁴⁵ Ibid. pp. 188-9.

⁴⁶ Arendt, H. (1958), p. 137.

of which are the results of communication and not reflections of eternal, objective truths.⁴⁷

Watzlawick's view which frames reality as a social construction follows a tradition of scholarship rooted in the phenomenology of Alfred Schutz, elaborated in "On Multiple Realities" in 1945.⁴⁸ Schutz's ideas were brought to popular attention in Thomas Luchmann with Peter L. Berger's (1966) *The Social Construction of Reality*. The roots of this discourse Erving Goffman traces back to an article by William James entitled "The perception of reality" which first appeared in *Mind* in 1869 and was reprinted as a chapter in *The Principles of Psychology*.⁴⁹ James questioned "objective" analysis of reality, and framed his question in phenomenology, asking under what circumstances we *think* things are real. W.I. Thomas responded with the dictum: "If men define situations as real, they are real in their consequences."⁵⁰ Earlier roots of this discourse can be located, in Giambattista Vico's *Scienza Nuova*, in which Vico argued that, because history was ultimately constructed in the minds and by the hands of humans, historians could not make the claims to objectivity that were being made in the natural sciences.⁵¹

One might summarize the current state of the discourse on the social construction of reality by suggesting that the study of human symbolic interaction requires the appreciation that the

⁴⁷ Watzlawick, (1976), p. xi.

⁴⁸ "On Multiple Realities" has been reprinted in "The stratification of the life world" in Schutz and Luchmann's *The Structure of the Life World* (1973).

⁴⁹ James, W. (1950)[1890]. *The Principles of Psychology*.

⁵⁰ Thomas and Thomas, (1928), p.572.

⁵¹ Vico, G. (1968)[1744].

symbols with which human beings negotiate their "realities" are not fixed monolithic entities, but are subject to the vagaries of individual consciousness and complex systems of belief. It underscores the assertion that reality is to some degree a human social construction and in turn this social construction plays a constitutive role in what it means to be human.

However, while the social constructivist perspective is compelling, it is important not to fall into a completely relativist position in which no truth value can be ascribed to any situation. There is, for example, an inherent paradoxical circularity in Watzlawick's articulation of the social construction of reality. At the core of such a refutation of "eternal, objective truth" there must be an assumption of the validity of the instrument of the statement. If one takes this argument at face value, the very language in which the statement is articulated can have no "truth" value, and consequently neither can the statement.

While faith in language is at the heart of this paradox, it is also the driving force behind the view of reality as a social construction. T.S. Eliot suggested "we have no objects without language."⁵² In response, Kenneth Burke elaborates "how fantastically much our "Reality" could not exist for us were it not for our inveterate involvement in symbol systems."⁵³ Richard Rorty, while concurring that human reality is inextricably tied to

⁵² Eliot's doctoral dissertation, cited in Burke (1966, p. 61).

⁵³ Burke, K. (1966), p. 48.

language, in that language is constitutive of "truth," takes a somewhat less extreme position:

To say that the world is out there, that it is not our creation, is to say, with common sense, that most things in space and time are the effects of causes which do not include human mental states. To say that truth is out there is simply to say that where there are no sentences, there is no truth, that sentences are elements of human languages, and that human languages are human creations.⁵⁴

Thus the paradox of language points the way to hard and soft versions of a theory of social construction. Rorty's soft social construction theory echoes the distinction between what Watzlawick calls "the two realities,"⁵⁵ suggesting, for example, that we can say with confidence, as a result of having landed there, that the surface of the moon is solid. (Such statements fall into the domain of what he calls first order reality.) However, there is another order of reality in which considerations of meaning and value come into play. Gold has certain physical properties which can be agreed upon. But the value of gold, which is determined several times a day through institutionalized interactions, has little to do with these physical properties. Rather, it is profoundly entwined in a network of factors which influence it and which it influences. Our perception of the world is greatly invested in our institutional knowledge of it. Or as Nelson

⁵⁴ Rorty, R. (1989), p.5.

⁵⁵ Watzlawick, P. (1976), p. 140.

Goodman suggests, "perception without conception is blind (totally inoperative)"⁵⁶

John Searle's (1995) adherence to a soft version of social construction is alluded to in a linguistic turn seen in the title of his recent book *The Construction of Social Reality*.⁵⁷ Searle describes social construction against assumptions of an underlying objective reality. He addresses the question: Does the real world exist? and in so doing elaborates a theory which teases out some of the intricacies of the two realities alluded to above. Searle makes the distinction between what he calls "brute" and "institutional" reality. For example, the distinction between "brute" facts and "institutional" facts differentiates between "statements" which represent prelinguistic phenomena, e.g. a cat is up the tree, and statements which make reference to social institutions having no corollary in physical reality: e.g. Clinton is *President*.

Searle's can be seen as a softer version of social construction than say Schutz's phenomenology, in which it is suggested that "there are no such things as facts pure and simple" that experience "involves constructs, i.e. a set of abstractions, generalizations, formulations, idealizations specific to the level of thought organization."⁵⁸ Searle holds to a position that he

⁵⁶ Goodman, N. (1978), p. 6.

⁵⁷ Searle has devoted the better part of his career to addressing the larger questions raised by the underlying claims of recent technology. *Minds, brains and science* (1984), for example, is a critique of assumptions underlying the term "artificial intelligence" and research related to it. *The construction of social reality*, while it does not address technology specifically, explores the central assumptions underlying the use of the term "virtual reality" and research related to it.

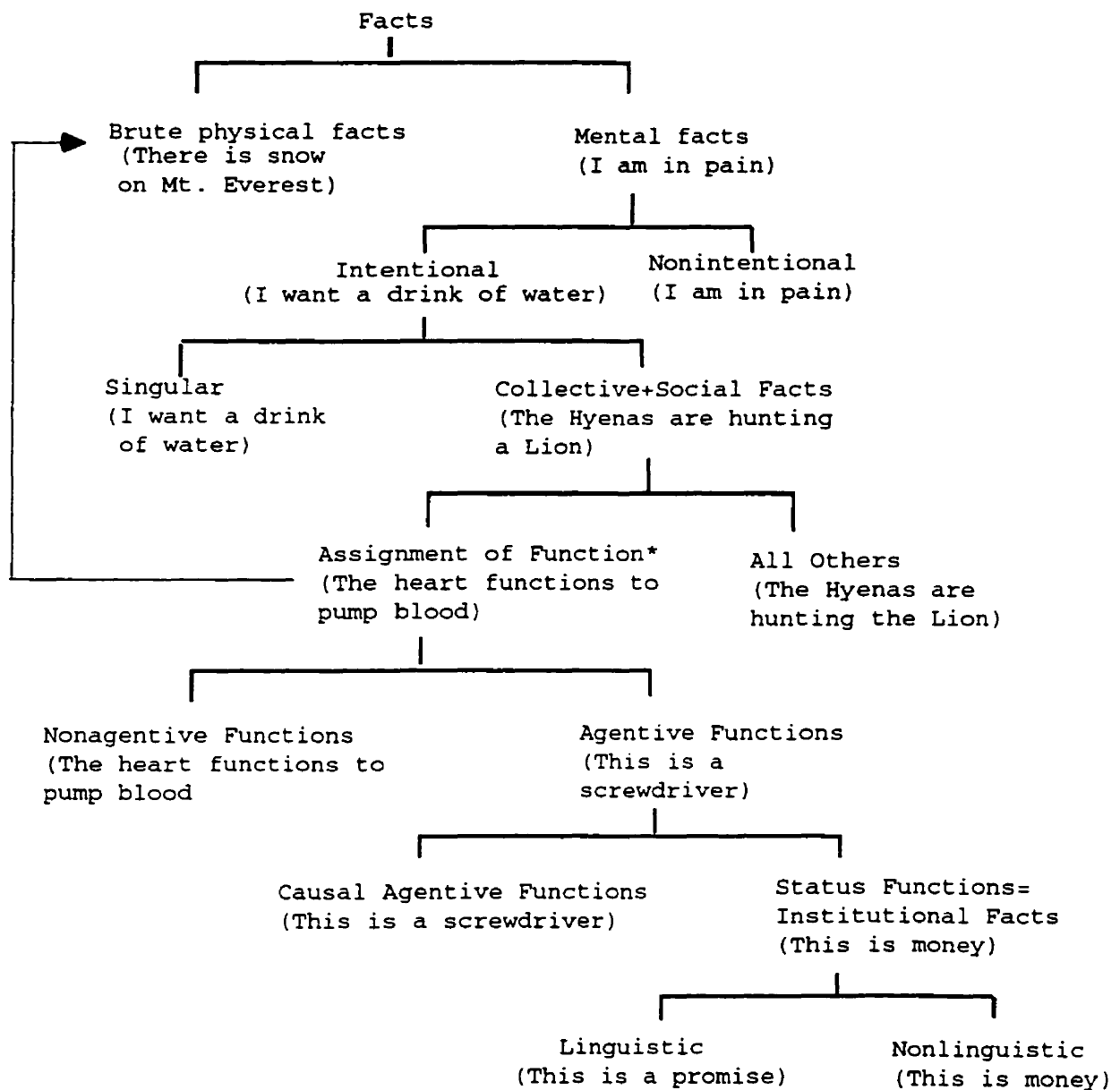
⁵⁸ Collected papers. p. 8

calls external realism (ER), the view that "[t]he world (or alternately, reality or the universe) exists independently of our representations of it."⁵⁹ Schutz and Searle's views are compatible, however, in one area, indeed the area that may offer the greatest insight to the discussion of virtuality. Schutz suggests varying levels of abstraction in institutions or social conventions. He refers to more abstract levels as "secondary elaborations" or "secondary constructs."⁶⁰ Likewise, Searle suggests a hierarchy of types of facts with regard to the degree of abstraction that they represent. These range from brute facts at one extreme to institutional facts at the other with gradations in between, including intentional/non-intentional (directed or not directed at objects external to a given subject), singular or collective (reflecting intrapersonal and interpersonal features), facts assigning function, including those functions which require an agent, and finally teasing out the distinction in solely institutional facts between those which are purely linguistic (promises, beauty, kindness) and those to which a physical object is attached (money). Searle's hierarchical taxonomy is illustrated below:

⁵⁹ Searle 1995, p. 150

⁶⁰ Schutz, A. (1963). p. 6.

Hierarchical Taxonomy of (Certain Types of) Facts

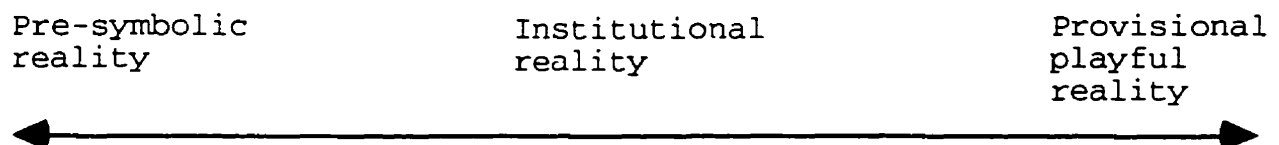


* Functions always assigned to brute facts, hence the dotted line.

(From Searle 1995, p. 121)

The placement of brute facts at the top of the hierarchy reflects a privileging of external reality over socially constructed reality (a reality which exists in the imaginations

and communications of interactants). Such a bias assigns external reality an executive function over socially constructed reality. It should be clear that the latter can have grave consequences on the former. The hierarchy suggests that it is not necessary to line up entirely on the rationalist or social constructivist side of this debate. Whether it seems untenable to hold to a view of universal truths on one hand, or a totally socially negotiated reality on the other, there may be some utility, not in a centrist position, but in considering a continuum which reflects Dewey's sense of the transactionality of human experience. Such a continuum represents, at zero, the abstraction of brute facts, from zero to the center of the continuum, a descending "investment" in legitimated institutional facts, and toward the other extreme, social constructions which are more provisional and subject to rapid transformation:



Transactionality seen as a continuum

The social construction and virtuality

Soft social construction would see virtual reality existing both in, and in relation to, physical reality. In this view, the constitutive role of observers (or more appropriately, interactants) as symbol producers, consumers, users, manipulators and negotiators in the highly symbolic behaviour of creating, and sustaining virtuality must be taken into consideration.

As Myron Kreuger suggested, pre-VR reality is already largely an artificial reality. Searle points out:

As far as our normal experience of inanimate parts of the world are concerned, we do not experience things as material objects, much less as collections of molecules. Rather, we experience a world of chairs and tables, houses and cars, lecture halls, pictures, streets, gardens, houses, and so forth.⁶¹

Our analyses of experiences in virtuality should reflect the extent to which objects in it are invested with functions and utilities not unlike those we ascribe to objects in everyday life. Steuer attempts to account for this oversight in his model by stressing the artificial character of telepresence. He emphasizes the fact that telepresence can support the existence of wholly artificial objects. These would be products of the imagination of their creator that have no corollary in the "real" world. This proposition invokes the philosophical riddle: If a tree falls in the forest and there is no one to hear it, does it make a noise? Just as there are institutional objects which have no corollary in physical reality (promises, lies) wholly artificial objects in

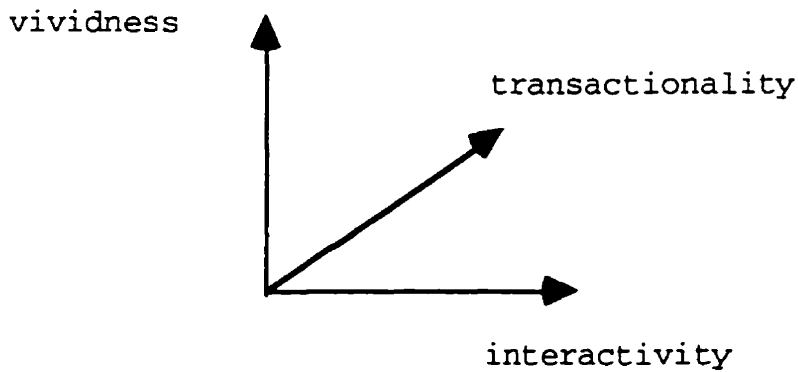
⁶¹ Searle, (1995). p. 14.

virtuality would acquire currency by virtue of their use and communicated value and utility. Just as institutionalized objects can be re-appropriated or reconfigured (e.g. a knife can serve as a screwdriver) so objects with no pre-assigned function can take on one in a social context. (A stone can be used as a paperweight.)

Molecules simulated in VR at the university of North Carolina⁶² would have an entirely different meaning to a user not literate in the molecular sciences than for researchers who are familiar with the scientific discourse surrounding them (institutional facts, properties, laws which apply to them). The wholly institutional "nature" of these objects is all the more reason to consider them within the purview of transactionality. The existence of wholly artificial objects in a virtual environment, does not warrant an epistemological break between virtual reality and "reality." Such objects exist, have an accepted or tacitly agreed upon meaning or value through and because of their being socially negotiated. Their reality, virtual or otherwise, is ontologically tied to their currency in human interaction.

If virtuality is understood to have this transactional character, it may be useful to reconsider Steuer's model for evaluating the differential capacity of various media to support telepresence. In addition to indices for "vividness" and "interactivity," the transactionality continuum can be submitted as a third index:

⁶² Rheingold (1991) pp. 14-15.



The benefit of including a third axis to Steuer's model are twofold. First, the confusion around intrapersonal and interpersonal variables in the terms "interactivity" could be mitigated. The interactivity index would be more in keeping with the "ability to modify the environment" index in Sheridan's model, representing motor control to initiate physical changes in the environment (as these changes relate to brute facts at zero on the transactionality index). The vividness index would remain akin to both the "vividness" axis in Steuer's model as well as "extent of sensory information" axis in Sheridan's. Vividness and interactivity could be understood to reflect brute material qualities at one extreme and socially negotiated and legitimated values at the other.

The transactionality axis then would address Dewey and Bentley's concern "to see in union what it becomes important to see in union and in separation what it is important to see in separation." That is, it would allow the consideration of facts in isolation toward zero on the transactionality axis. And further from zero on the transactionality index, it would allow

the consideration increasingly higher degrees of institutional abstraction in environments. This would reflect their being socially negotiated to an increasingly greater extent. That is, environments which were greatly reliant on social negotiation would be represented as further along the transactionality axis. Those of lesser social negotiation would be closer to zero on that axis. Thus virtual environments which were designed to be highly stable, "invested" in brute facts, such as medical and flight simulations or distance laboratory experiments, would be closer to zero on the transactionality axis, whereas environments which are seen as open-ended, such as MUDs and MetaWorlds,⁶³ would be increasingly further away from zero.

Another benefit of the addition of the transactionality axis is that it would allow for further precision in evaluating media. That is, along this axis, media could be presented not as monolithic but as breaking into subcategories of mediated presence: e.g. genres of films, types of television programs, plays, MUDs, news groups, videogames or images, seen as more or less stable in terms of brute facts, or routinized in relation to institutionalized facts.

This further elaboration also addresses concerns noted in relation to interpersonal and intrapersonal variables. Just as different subcategories of mediated presence could be seen as being open to lesser or greater amounts of collaborated or negotiated interaction, having greater or lesser degrees of

⁶³ MetaWorlds are a form of MUD with a graphical user interface (GUI) in which users have a graphical avatar. See "MetaWorlds." *Wired*. 4.06, p. 140

institutional fixity and stability (in interpersonal terms), they would also reflect situations requiring a greater or lesser degree of background knowledge or practice (in intrapersonal terms).

Expert and mundane presence

Just as it was suggested above that Sheridan's term "observer" be replaced by the term "interactant" to reflect the requisite participatory (or non-passive) quality of a user's experience of telepresence implied by the term interactivity, the term transactionality implies another sort of non-passivity, or non-impassivity, the non-passivity or non-impassivity of human cognition.

The dynamic quality of human thought and the communication of that thought both intrapersonally and interpersonally has been at the heart of another digital technology debate, the debate surrounding artificial intelligence (AI). Some of the insights gained in this debate are germane to a discussion of virtuality,⁶⁴ particularly those related to expert systems as they address the types of facts which may indeed be codifiable in an artificial environment.

Herbert Dreyfus (1965; 1972) and John Searle (1980; 1984; 1994) have long been opponents of theoretical assumptions

⁶⁴ A historical sketch of AI can be found in Sherry Turkle's *The Second Self: Computers and the Human Spirit*. (1984). Turkle's more recent work *Life on the Screen: Identity in the Age of the Internet* (1995) discusses AI once more and will be discussed in chapter 6 of the dissertation.

underlying AI. Dreyfus has compared AI to "alchemy,"⁶⁵ a fool's attempt to convert base materials (machine operations) into gold (human thought). Correspondingly, Searle's refutation of AI deals with the misconception that human thought processes can be reduced to formal representations.⁶⁶ Again in Searle's work there is a distinction made between "strong AI" which sees the brain as a computer and thought as the program which runs it, and softer versions of AI found in cognitive science, the latter occasionally acknowledging the limitations of AI in accounting for certain characteristics of human cognition such as its intentionality: "beliefs, desires, hopes, fears, love, hate, lust, disgust, shame, pride, irritation, amusement... toward objects and states of affairs in the world."⁶⁷

AI by the end of the 1980s seemed to be hearing the same death knell that VR heard in the early 1990s. However, like VR, the meme or guiding metaphor of AI has endured. One area in particular that has persevered is the design of "expert" systems. Collins (1991) in studying "expert systems and the science of knowledge" views as unrealistic the top-down approach which, in keeping with strong AI works toward getting machines to behave like humans. However, he suggests that the bottom-up approach of expert systems research which (rather than trying to focus on human behaviour) focuses on giving machines more facts about their environment, shows more commercial promise and in turn provides a more fruitful model for studying technological culture.

⁶⁵ Dreyfus, H. (1965).

⁶⁶ Searle, J. (1984).p. 30.

⁶⁷ *Ibid.* p. 16.

Expert systems, or intelligent knowledge based systems (IKBS), are constructions of collected expert knowledge. The goal is to store in the computer's memory knowledge which will be useful to the non-expert. For example, medical experts might insert their knowledge into an expert system which can be consulted by less-expert or non-expert end users. The end user must provide data such as symptoms in relation to which the expert system performs a diagnosis. Clearly expert systems do not challenge the above-mentioned philosophical misgivings with the project of AI. They avoid this pitfall because, rather than being attempts to simulate human intelligence, they can be seen as attempts to augment it.

In analyzing the categories of knowledge in relation to IKBS, Collins' classifies knowledge into four different categories: (1) Facts and formal rules (rules that are easily codifiable and transferable); Heuristics (rules of thumb, standard practices etc.); Manual and perceptual skills (the capacity to make qualitative observations about shapes, characteristics, etc.); and cultural skills (including tacit knowledge as discussed by Polanyi, 1967). This type of skill (illustrated by the skill of riding a bicycle) is exceedingly complex to codify. Moreover, attempting to learn such a skill by following a set of explicit rules is often seen as more complicated than tacitly acquiring the skill through practice. A paradigm example can be found in theories of the acquisition of a language.⁶⁸

⁶⁸ The field of linguistics has long been embroiled in the debate over acquisition versus learning. As Lightbown and Spada (1993) explain, language "acquisition" is seen as concerning: "unconscious learning , which takes place

As in Searle's taxonomy of brute and institutional facts, a hierarchy is suggested in Collin's classification of types of knowledge. This ranges from easily codifiable laws and rules, through the slightly more difficult rules of thumb, to capacities which require perceptual skills, finally to knowledge which is not only not easily codifiable but arguably better left alone. While, there appears to be no clear correlation between such a hierarchy and one from brute to institutional facts, there may prove to be connections that can be drawn between such epistemological hierarchies. The codifiability of knowledge is an alluring prospect in both AI and VR. However, the complexity of tacit intrapersonal knowledge and institutional interpersonal knowledge needs further exploration.

when the emphasis is on communication and there is no emphasis on form. Adherents to the Stephen Krashen's "language acquisition hypothesis" hold that acquisition is the preferable way to acquire natural language." p. 123.

Section 2

History, theory, technology

In this section, several proto-virtual realities will be presented to illustrate the degree to which simulation and immersion are not purely contemporary goals, as well as to show that the best laid formulations of virtuality are not always realized when technologies are reconfigured in social realities. In addition, a form of counter critique of certain contemporary critical theorists will be offered. The claims of theorists who see text as the defining metaphor of contemporary culture will be evaluated, as well as post-structural notions of decentered subjectivity and the problematic category of "author." Several historical cases: the commonplace, the index, and hypertext are offered to shed light on the degree to which technologies and technological mindsets are socially constructed. As a result these technologies retain a certain social and cultural investment even when they are ostensibly outmoded. Finally, social construction theory will be considered as a perspective on the contemporary convergence of media which is seen as defining the virtual stage of contemporary technological reality.

Chapter 2

Virtuality and its uses

Cyberspace, eros, rationalism

Perhaps even more popular than the term virtual reality today, though often used interchangeably with Steuer's interpretation of it, is the word cyberspace. Biocca, Kim and Levy suggest that these two terms have "come to symbolize both our enthusiasm and ambivalence about social and cultural transformation through technology... a first step in a grand adventure into the landscape of the imagination... a kind of transcendence of the limits of physical reality."⁶⁹ The metaphor of cyberspace as an "adventure into the landscape of the imagination" is sometimes taken quite literally. Towit, Kevin Kelly, executive editor of *Wired* magazine, in a debate about on-line communications directs a rhetorical question and answer at Sven Birkerts, author of *The Gutenberg Elegies: The fate of reading in an electronic age* "Where am I when I'm involved in a book? Well here's the real answer: you're in cyberspace. That's exactly where you are. You're in the same place you are when you're in a movie theatre, you're in the same place you are when you are on the phone, you're in the same place you are when you are on-line."⁷⁰ Kelly's references to "cyberspace" while

⁶⁹ In Biocca and Levy (1995) pp. 6-7.

⁷⁰ "What are we doing on line?" In *Harper's* Aug. 1995. p. 39.

intriguing suggest that this term, like the term "virtual reality," suffers from a lack clarity in its use.

Michael Benedikt (1991), maintains a definition of cyberspace akin to Steuer's open definition of virtual reality. He aims for clarity, however, suggesting that cyberspace and virtual reality are not interchangeable, cyberspace being only one form of virtual reality.⁷¹ Benedikt while maintaining a broad view of cyberspace, does, however, give it a technological locus, linking it specifically to networked computers:

A new universe, a parallel universe created and sustained by the world's computers and communication lines. A world in which the global traffic of knowledge secrets, measurements, indicators, entertainments, and alter-human agency takes on form: sights, sounds, presences never seen on the surface of the earth blossoming into a vast electronic night... [t]he tablet become a page become a screen become a world, a virtual world. Everywhere and nowhere, a place where nothing is forgotten and yet everything changes.⁷²

The one common element in most depictions of cyberspace is a level of expectation, anticipation, embellishment, even hyperbole. The cyberspace referred to above is arguably not a description of what these writers are experiencing but of one which they look forward to optimistically. It is fitting then to find a formulation of cyberspace rooted in a theory of desire.

In keeping with the term's origins in William Gibson's novel *Neuromancer*, (the term cyberspace coined by science fiction writer Gibson in 1984 to refer to a Burroughsian⁷³ alter-reality in the information "matrix" navigated by artificial intelligences and

⁷¹ Benedikt, M. (1991). p.119

⁷² Ibid. p. 1.

⁷³ Gibson's cyberspace can be said to resonate in character with W. S. Burroughs "inter zone" in *Naked Lunch*.

sub-culture "cyberspace cowboys") as well as with the arithmetical aesthetic of Benedikt's description, Michael Heim⁷⁴ elaborates what he refers to as "the erotic ontology of cyberspace," suggesting that the *raison d'être* of cyberspace is that "[w]e love the way computers reduce complexity and ambiguity, capturing things in a digital network, clothing them in beaming colors and girding them with precise geometrical structures."⁷⁵ Heim's suggestion of our alleged love of geometry is designed to invoke the eros elaborated in Plato's *Symposium*, the drive toward the beauty of ideal forms. Heim suggests that "[r]ightly perceived, the atmosphere of cyberspace carries the scent that once surrounded Wisdom. The world rendered as pure information not only fascinates our eyes and minds, it captures our hearts. We feel augmented and empowered. Our hearts beat in the machines. This is Eros."⁷⁶

The tropes Heim uses to make the connection between cyberspace and Platonic idealism are perhaps rooted more in poetry than in logic: "With the electronic infrastructure, the dream of the perfect FORMS become the dream of inFORMation."⁷⁷ There is some irony in Heim's poetic language play, if one considers Plato's opposition to poetry in favour of logic.

Heim's argument is that both Plato's idealism and cyberspace "extend and then renounce the physical embodiment of knowledge." Thus he refers to the cave in Socrates' cave allegory from the

⁷⁴ Heim, M. "The erotic ontology of cyberspace" in Benedikt, M. (1991) pp. 59-80.

⁷⁵ *Ibid.* p. 60

⁷⁶ *Ibid.* p. 61.

⁷⁷ *Ibid.* p. 65.

Republic as "the dungeon of flesh,"⁷⁸ in keeping with its description:

Here they have been from childhood, chained by the leg and also by the neck, so they cannot move and can see only what is in front of them... At some distance up is the light of a fire burning behind them; and between the prisoners and the fire is a track with a parapet built along it, like the screen at a puppet show, which hides the performers as they show their puppets over the top... the prisoners so confined would see nothing of themselves or one another except the shadows thrown by the fire-light on the wall of the cave facing them.⁷⁹

Socrates goes on to compare a prisoner who is released and taken through the cavern entrance into the daylight to the philosopher, who when exposed to truth is, at first, pained by the light and longs for the familiarity of the illusory shadows, but eventually is able to understand that this same blinding sun is the source of everything, so he becomes sorrowful for his companions who live in the shadow of illusion. Plato's is a rationalist's truth, to be found in Pythagorean observations of music and mathematics, in the philosopher's *logos*.

It seems fair to take the cave allegory as a parable of the inferiority of sensory conclusions to logical ones. Plato's argument, however, suggests that rather than extending from the physical embodiment of knowledge, idealism is the more basic reality, whereas representation is further removed from it. Thus

⁷⁸ *Ibid.* p. 63.

⁷⁹ Cornford, F. M. (1941). pp. 227-228.

in his critique on poetry elsewhere in the *Republic* Socrates argues:

[T]he content of this poetical representation is something at the third remove from reality, is it not?... Let me explain by analogy. An object seen at a distance does not, of course, look the same size as when it is close at hand; a straight stick looks bent when part of it is under water; and the same thing appears concave or convex to an eye misled by colours. Every sort of confusion like these is to be found in our minds; and it is this weakness in our nature that is exploited, with a quite magical effect, by many tricks of illusion like scene painting and conjuring... But satisfactory means have been found for dispelling these illusions by measuring, counting, and weighing.⁸⁰

The fault in Heim's argument is not in suggesting that Platonic idealism privileges logic over experience, it clearly does. It is that virtual reality and cyberspace should be taken as "embodying" or "representing" logic. Most current conceptions of VR point to mediations of experience that do not consist of pure forms but of representations.

Indeed Heim's argument can be reversed. The cave allegory can be seen as a depiction of VR and a critique of it, Socrates suggesting that our everyday existence is a virtual reality mediated by our sense perceptions. It is possible to conceive of virtuality as *logos*. However, when it is considered within a context of social interaction, once it is seen as a transactional space, it can no longer enjoy the privileged status of being taken as pure inFORMation, unfettered by its interconnections within a network of social variables.

⁸⁰ *The Republic of Plato* . p. 334.

Caves IRL

As the originary moment of virtual reality, Howard Rheingold (1991) invokes the image of early tool makers, thirty thousand years ago, ritually leading initiates prostrate through the caves of Lascaux.⁸¹ He reads paleontologist John Pfeiffer's interpretations of the Lascaux cave paintings as explorations in cyberspace. These images of bison, birds, human figures and other symbols, sometimes anamorphic, painted in accordance with natural protuberances of the limestone, often only discernible when a torch-light is passed over them at a precise angle, are found at impracticable depths, often in caves within caves. The achievement of these images is doubly inspirational, firstly because of the manner in which they were applied to the cave walls, pigments-ochre and charcoal softened over a fire and ground up in the artist's mouth, then blown through the cupped hands or through a hollowed out spray nozzle,⁸² the artist literally *breathing* life into the images. If the manner of their creation inspires, then the ordeal of experiencing the paintings must also be seen as an ordeal of the sensations, the initiate crawling through the darkness, consciousness possibly altered with some form of hallucinogen, a torch-light passed rapidly over the images only for an intense and fleeting instant, the image in fire-light serving only as the visual catalyst, the pre-historic imagination igniting the rest of the senses.

⁸¹ Rheingold, H. (1991). pp. 379-386.

⁸² Eastham, S. (1990). pp. 9-11.

John Pfeiffer (1982) suggests that these rituals are coincident with a creative explosion.⁸³ Twenty millennia before writing, the development of notation and complex symbols was already well under way. The cave rituals at Lascaux are seen as endeavors to burn into the initiate's memory, Cro-Magnon's most valued knowledge. They were mental imprinting ceremonies to preserve the tribal experience. At times perhaps simulations, anticipations of the adrenaline rush of the hunt, but at others suggesting a broader range of emotions and sensations. Eastham (1990) argues that the stenciled hand prints at Castillo cave suggest that cave paintings were not merely the utilitarian game plans of *homo faber* but were for *homo symbolicus* the synechdote of presence, or of absence in cases in which one digit of the stencil was missing, ceremonially removed in the expression of grief over the loss of a loved one.⁸⁴

If cave paintings are seen as a proto-VR, an endeavor to merge imagination with multi-sensory experience, the physically demanding ordeal involved in their viewing can be seen an important feature of their design.⁸⁵ In this view of virtuality, the physical and the imaginary are closely linked. Thus, in some of its trajectories, VR is a return to older modes of communication.

⁸³ Pfeiffer, J. (1982).

⁸⁴ Eastham, S. (1990). pp. 9-11.

⁸⁵ A more recent example of a multi-sensory experience which appreciated the value of physical exertion was Richard Wagner's *gesamtkunstwerk* or "complete work." The *gesamtkunstwerk* was a convergence of the representational arts of the period (music, drama, decorative arts) which like paintings in remote caves, was often deliberately staged in out-of-the-way venues.

Physical poetry

It is difficult, in the current historical context to appreciate poetry as an art form which could engage one in the sort of "physical" manner of a cave ordeal. However, Eric Havelock (1963, 1986) makes such a case for the poetry of Plato's Greece. The philosopher's critique of poetry according to Havelock (1963, 1986) is as much a social critique as an aesthetic one, as the re-enactment of the epics was a socializing agent as well as a dance of the senses. Havelock suggests that in ancient Greek pedagogy "effective memorization depended on the use of rhythm."⁸⁶ Presenting Homer as the body of work rather than the author, Havelock adds: "Acting as a kind of versified encyclopedia, Homer recorded and preserved the means of maintaining cultural continuity by putting on record the social mores of the culture."⁸⁷

Rhythm is an aid to memory by its link to bodily movement and a concomitant increase in engagement of the central nervous system (CNS). Havelock suggests that pre-literate cultures are qualitatively different from literate ones in regard to the degree to which their communication is physical, and the degree to which the full compliment of the senses is engaged in communication. He

⁸⁶ Havelock, E. (1986). p. 29.

⁸⁷ *Ibid.*

elaborates this point in discussing Alexander Luria's (1976) observations of non-literates in Uzbekistan and Kirghizia:

The syntax of the language was activist and dynamic... the culture which expressed itself in this way he styled "verbomotor," in contradistinction to the static categorical language characteristic of achieved literacy. Oral composition and performance of oralized language (if the expression may be allowed) was common. In these performances he noted the coordination of rhythmic patterns with the physical motions of the body.⁸⁸

Havelock compares the performance of poetry to "live recording,"⁸⁹ engaging the CNS in a way that writing could not. While a literate Plato favoured the dispassionate characteristics of analysis, the pre-literate Greek *pedagogus* engaged his students in an early version of "virtual reality." The whole CNS was immersed in the cultural encyclopedia. As the student recited, he stepped into the role of Achilles, for example. This process of identification was a physical process. He literally knew how it felt to be a hero. Donald Theall (1992) uses Joyce's gestural poetics to argue that the orality/literacy dichotomy may be misleading.⁹⁰ MUDs and other textual "virtual realities" reinforce this point. Like the *rhapsodes* of Plato's Greece, participants in MUDs are transformed bodily into the characters they embody in their on-line experiences. The "physical" experience of playing

⁸⁸ *Ibid.* p. 41.

⁸⁹ *Ibid.* p. 31.

⁹⁰ Theall suggests that Joyce's multisensory conception of the "book" presages VR. Joyce's "rhythmatics" represents an example of physical poetry and thus, as Theall suggests, would tend to make Joyce a key figure in the pre-history of contemporary VR. The fundamental difference between the physicality of Joycean gestural poetics and classical Greek rhapsode outlined here, lies in the obscurity of the former and the wide-spread adoption of the latter.

the character in a MUD has lasting effects as the experience is registered in the CNS.

Noetic space

Physicality is an aid to memory as memory is physical. Memory can also be seen in terms of an augmentable "space" within which ideas can be elaborated. In this regard, Frances Yates (1969) suggests that artificial memory was for the medieval scholar what writing is for the scholar of today, a technique for working out ideas, the art of memory being like "inner writing."⁹¹ The practice of imagining an architectural space in which to place items to be remembered was quite common, the most precise description of this process given by Quintillian.

Quintillian's "method of places" or *loci*, imagined locations for storing items to be retrieved, shows how imaginary space served as an immersive environment for long-term storage of items to be used in oratory:

Some place is chosen of the largest possible extent and characterized by the utmost possible variety, such as a spacious house divided into a number of rooms. Everything of note therein is committed to the memory, in order that the thought may be able to run through all the details without let or hindrance. And undoubtedly the first task is to insure that there will be no delay in finding any single detail, since an idea which is led by association to some other ideas requires to be fixed in the mind with more than ordinary certitude. The next step is to distinguish something that has been written down or thought of by some particular symbol which will serve to jog the memory; this symbol may have reference to the

⁹¹ Yates, F. (1969). p.6.

subject as a whole, it may for example be drawn for navigation, warfare, etc., or it may, on the other hand, be found in some particular word. (For even in cases of forgetfulness, one single word will serve to restore the memory.) However, let us suppose that the symbol is drawn from navigation, as, an anchor; or from warfare, as, for example, some weapon. These symbols are then arranged as follows. The first thought is placed, as it were, in the forecourt; the second, let us say in the living-room; the remainder are placed in due order all around the *impluvium* (open courtyard) and entrusted not merely to bedrooms and parlours but even to the care of statues and the like.⁹²

In the art of memory, as in writing, the physicality of the act is perhaps only discernible when some attention is paid to it. Just as a literate person may often need to resort to the physical activity of writing out a word whose spelling is questioned, or may be aided in recalling a telephone number or personal identification number by the physical act or gesture of keying it into a numeric pad, the student of the art of memory often physically paced his memory *loci*.⁹³ The memory arts can be seen as the mental space being mimetic of the physical. Generally speaking, the memory artist created a mental simulation of a familiar space and systematically placed items for recall at strategic places. When the items were to be recalled, the memory artist would retrace his imaginary steps retrieving the items from the "virtual" location in which they had been placed.

With time, familiar spaces were replaced by imaginary ones. In the Middle Ages and early Renaissance the practice of "the

⁹² *Institutio oratotia*, XI, ii, Quoted in Yates, (1969) pp. 17-22.

⁹³ *Ibid.* p. 8. Interestingly, the memory *loci* were often marked at each 5th locus in keeping with what is now understood to be optimal recall capacity. (e.g. See Stevick, E. (1976), *Memory, Meaning, and Method.*)

method of places" became so elaborate that the architectural spaces created for storing memory items took on arguably as much importance as their content. The memory theatre of Giulio Camillo (appendix 2) shows the extent to which space could be used to make knowledge systematic, to impose priority and hierarchy. Consider Camillo's own comments in this regard:

This high and incomparable placing not only performs the office of conserving the things, words and arts which we confide to it, so that we may find them whenever we need them, but also gives us true wisdom from whose founts we come to the knowledge of things from their causes and effects.⁹⁴

Memory theatres could represent entire cosmologies in the manner that the rose windows of Gothic cathedral's often did, depicting the structure and hierarchy of the rationalist universe within the tenets of Catholicism while attempting to absorb and structure all other systems of belief. Compare the semi-circular cosmology of Camillo's Memory Theatre with the Lausanne rose (appendix 3), for example. The Lausanne places the Christian God at its center; surrounded by matter; which is surrounded by time; which is in turn surrounded by the elements of the Zodiac; surrounded by the lands of myth; surrounded by the eight winds of the cosmos.⁹⁵

Memory techniques became increasingly sophisticated by the time of the Renaissance. These arts in the hands of certain practitioners were no longer designed for mere storage and retrieval. They began to have the more dynamic capacity of revelation. In addition to the elaborate memory theatres of

⁹⁴ *L'idea del Theatro*, pp. 11-12. In Yates, *Op cit.* p. 143.

⁹⁵ See Cowan, P. (1979), pp. 130-131.

Camillo, there were the figurative Arts of Ramon Lull, complex charts of rotating concentric circles which Lull thought to have such revelatory power that they could definitively prove the superiority of Christianity over Islam.⁹⁶

The memory arts of the Middle Ages and Renaissance are interesting prototypes of virtual reality because they illustrate the constructive and transformative potential of symbolic worlds. Memory theatres evolved well beyond mere simulations of physical reality. In addition, they can be seen as laboratories of abstraction and, as such, show the extent to which an investment in institutional facts can develop.

The memory arts are an excellent illustration of McLuhan's popular maxim suggesting that the form of media influences their content. The hierarchies which structured the information contained in memory theatres become "real" hierarchies. This can be instructive to designers in virtuality. The value of objects and their relationship to each another in the virtual world is a product (albeit a symbolic product) of the internal structure (e.g. hierarchy of objects) and integrity of that virtual (symbolic) structure. In spite of this caveat, one must not lose sight of the social dimension. On one hand, memory theatres, like modern day virtual realities, were wont to be simulations of reality organized according to prevailing discourses and rhetorics. On the other hand, in the diffusion of any technology, the best laid plans are not always brought to fruition once these plans and their objects become cultural currency.

⁹⁶ See Yates, F. (1969). pp. 78-105

Rationolithics

The Gothic cathedral is not only an excellent example of a would-be proto-virtual reality, it is a model case which illustrates the disparity between rationalist "best laid plans" and their "realization" through social construction. Considered historically, cathedrals reflect in exacting detail the excruciating abstraction that obtained in medieval Catholicism. The details of architectural innovation in cathedrals also reflect detailed changes in theories of artificial memory in the transition from a neo-Platonic to a Scholastic world view.

Catholicism had been deeply invested in rationalist abstractions which were expressly not material, that is, of this world (in Neo-Platonic tradition, the rational soul being divinely abstract). Certain scholastics, most notably Thomas Aquinas and Magnus Albertus, encroached into these sacred spaces, and made material certain of the principles of rationalism. These can be seen today in the design and execution of Abbott Suger's cathedrals. Realizing Suger's vision of these towering monuments to God, however, required enormously complicated religious, philosophical and intellectual politicking.

Scholasticism has a reputation for fostering tediously complicated debate. The logistics justifying the Church's building of cathedrals is a paradigm (and paradigm shifting) example of this sort of complication. Yates (1966) gives a detailed account of the sort of "logical" argument that was

required to free religious images from the purely mental realm of Platonic rationalism and allow them to have currency in the material world. It involved classifying memory as part of Prudence, one of the four cardinal virtues after Cicero's classification, then citing Aristotle's model of memory with a passive and an active part: *memoria* (the storehouse) and *reminiscentia* (recollection). Memory had to be a part of prudence to temper complaints that elaborate memory arts led to fanciful imagery. Prudence was required to remove this risk. The objection to memory being a part of Prudence was that memory had previously been classified as being in the sensitive part of the soul. Albertus countered this objection by suggesting that only the active part of memory *reminiscentia* was in Prudence.

Aquinas in his *Summa* also placed memory within Prudence and rallied around Aristotle who suggested that, while "understanding is of universals which are to be abstracted from particulars... Man cannot live without images (*phantasmata*); the image is a similitude with the corporeal thing."⁹⁷ Aquinas elaborated on Aristotle through a principle he called *manifestatio*, a principle which called for concrete demonstration of rationalist tenets. Articles of faith were tested by analogy, by *similitudines*. Elucidation and clarification of divine reason could best be achieved by demonstrations in the material world. *Modus operendi* followed *modus essendi*.⁹⁸

⁹⁷ In *Aristotlis libros De sensu et sensato, De memoria et reminiscentia commentarium*. In Yates, F. (1969). p. 91.

⁹⁸ Panofsky, E. (1957). pp.30-32.

Abbott Suger's cathedrals may be the best example of *manifestatio*. Not only did the stained glass and sculpted reliefs provide both the macropedia of church knowledge and a micropedia of local patrons and crafts people, but the very structure of the buildings themselves was a testament to the principles of rationalism, the universality of general to specific, larger structural details repeated in smaller ones. Erwin Panofsky, in analyzing Amiens, describes the process as follows:

[W]e perceive what corresponds to the hierarchy of "logical levels" in a well-organized Scholastic treatise. Dividing the entire structure, as was customary in the period itself, into three main parts, between high nave and side aisles, on the one hand, and between apse, ambulatory, and hemicycle of chapels, on the other, we can observe analogous relations to obtain: first between each central bay, the whole of the central nave, and the entire nave, transept or fore-choir, respectively; second, between each side aisle bay, the whole of each side aisle, and the entire nave, transept or fore-choir, respectively; third, between each sector of the apse, the whole apse, the entire choir; fourth, between each section of the ambulatory, the whole ambulatory and the entire choir; and fifth, between each chapel, the whole hemicycle of chapels and the entire choir... It is not possible here--nor is it necessary--to describe how this principle of progressive divisibility (or to look at it another way multiplicability) increasingly affected the entire edifice down to the smallest detail.⁹⁹

From the cathedral, many parallels can be drawn with current conceptions of virtual reality. The cathedral represented a convergence of the latest "high technologies": State-of-the-art geometry and engineering created spine vaults and flying buttresses, which brought in light, the "essential" metaphor of

⁹⁹ *Ibid.* pp. 47-48.

Christian belief. Incorporated into the design is something akin to Heim's inspiration in pure forms. The cathedral had the effect of immersing those inside it in the geometry and symmetry of rationalism, conquering, through association, any doubt in the universality of these forms and the universal power of the Church. The effect endures well after the high Gothic period, as aptly illustrated in D. H. Lawrence's "The cathedral":

Here in the church, "before" and "after" were folded together, all was contained in oneness... And there was no time nor life nor death, but only this, this timeless consummation, where the thrust from earth met the thrust from earth and the arch was locked on the keystone of ecstasy. This was all, this was everything.¹⁰⁰

Panofsky's argument that cathedrals were the vanguard of the rationalist tenets of Scholasticism is confined spatially and temporally. It is given with the proviso that only cathedrals of the high Gothic period within a 100 mile radius of Paris are relevant to his analysis. This is an important limitation. The French landscape (for that matter, the rest of the world) is riddled with examples of Gothic architecture, spine vaulting and rose windows becoming icons of "high style" even when appended to structures of diverse architectural styles. The appropriation, of high style that these buildings reflect underscores the limitations of a prescriptive rationalist immersion project.

¹⁰⁰ Lawrence, D. H. (1915) p. 199.

Though many examples could illustrate the point, two stand out.¹⁰¹ The cathedral at Mirepoix which dates back to 1343, though boasting its flying buttresses and spine vaulting took on these features in renovation projects that took place in 1506 and in 1865. Rather than being the *manifestatio* of rationalism, these features "plastered" on to an existing Romanesque structure, are more representative of a bricolage of styles, an appending of rationalist "high art" to the existing church structure in an after-the-fact manner.

Similarly, the Cathédrale St-Just at Narbonne illustrates how cathedrals were completed (if ever) only after decades, even centuries, of toil, administration, and politicking and were nonetheless put to use in a somewhat less than "ideal" form. St-Just's first stone, sent from Rome by Pope Clement IV, was laid on April 3, 1272. The chevet and lower nave were only completed in 1354. The buttresses for the transept and altar are erect; however, they remain to this day but a skeletal structure, or superstructure. The open space between the nave and transept was bricked in during the 18th century so that the completed portion could be a usable place of worship, negating the shape of the cross (transept crossing nave) that was a fundamental icon in all of Suger's cathedrals. From inside St-Just, while the multiplicity of rationalist principles noted by Panofsky is in evidence, one is oblivious to the overall plan of the building, a less than "ideal" scenario. The manner in which this building has

¹⁰¹ Details of the following examples were gained from visiting the specific sites and from the local documentation (which one usually finds in cathedrals).

been appropriated shows the gap between formal (rationalist) design principles and the character that an environment may acquire through its social use.

Virtual realities can, as Heim suggests, be viewed as rationalist projects, reflecting the formalisms of their designers. However, one must not lose sight of the fact that these virtual spaces are not designed in the vacuum of infinite space but in a "real" social context of discourses and rhetorics. Moreover, these designs will take on their functional shape as much from the inside as from the outside, as much from the social construction of those using them as from their designers' best laid plans. A virtual reality, a symbolic construction, once it is put to use will be shaped to great measure by the interactions of those within the space, the meanings they assign to symbolic forms and objects, and the roles that these forms and objects enable them to play.

Beneath the surface of textworld

It is more difficult perhaps to see the technology of writing as a prototype of virtuality than some of the examples already given. First, all the cases thus far have been examples of physical or perceptual immersion, whereas the technology of writing, the negotiation of letters in the two dimensions of the page, would seem to suggest an activity which places the reader on the outside. Additionally, writing being the pre-eminent

communications technology of the current historical moment, it is viewed with difficulty from a sufficient distance.

This latter point, however, on the surface an obstruction, can actually be viewed as an argument in favour of viewing writing as a form of virtuality. Writing is indeed a model prototype when understood in terms of its pervasive social and cultural impact, and in terms of its capacity to cultivate a "reality" whose building materials are the currency and legitimacy of its symbols. The printing press, the mass producer of writing, for example, has been seen as one of the most important agents of social change in human history (McLuhan, 1962, Eisenstein, 1980). It can be seen as fostering the world of scholarship as it is understood today, its primary means of legitimation being scholarly publication. J. David Bolter (1991) has gone as far as to suggest that writing (or the writing space) is the root metaphor for the human mind in the last four centuries.¹⁰²

The modern world is a world thoroughly represented and reinforced by letters, the content and structure of which, like the translucent walls of the great cathedrals, can be seen as influencing everything over which they shed their light. In this respect, one strain of critical theory has in recent years become self-referential and self-absorbed, seeing culture through the purview of text, indeed seeing culture as text. In, *Reading Material Culture*, for example, Christopher Tilley explores the structuralist and post-structuralist work of authors Claude Levi-Strauss, Roland Barthes, and Jacques Derrida, whose writings,

¹⁰² Bolter, J.D. (1991).

rooted in the semiotics of the progenitor of modern linguistics, Ferdinand de Saussure, use text and textuality as the basic purview through which to structure, interpret or deconstruct culture. The discourse of these textualists, as Walter Ong has called them,¹⁰³ can sometimes arguably rival Scholastic discourses in terms of its complexity and obscurity. Giddens (1987) suggests that there is little homogeneity in the work of structuralists and post-structuralists which would make an exposition of their thought a simple matter. Moreover, there seems to be an inherent circularity to the study of culture as text, using text as the tool of analysis. However, this discourse is compelling in highlighting the pervasiveness of symbols and symbolic institutions in modern culture and a brief rehearsal of some of its more salient themes may prove valuable. In particular, there may be value in looking beneath the surface of letters in textworld for a palimpsest of earlier technologies of communication which, while subsumed by writing, may, nevertheless, influence the constitutive make-up of some its cultural institutions, and pattern some its social interactions.

Bolter notes that in writing, as in other technologies, "the craftsman must develop a skill, a technical state of mind in using tools and materials. Ancient and modern writing is a technology in just this sense. It is a method of arranging verbal thoughts in a visual space."¹⁰⁴ Bolter follows Innis and McLuhan in noting that the "tools and materials help to define the nature of the

¹⁰³ Ong, W. (1967)

¹⁰⁴ Writing Space: (Hypertext version) 3-1.

writing,"¹⁰⁵ (and it follows, the thinking of the writer). In Bolter's view, writing represents a uniform exteriorized space for mental work. Thus, he refers to the widespread adoption of writing in the Western world a "writing culture" (or by extension, "the writing of culture").

Bolter draws his spatial perspective on writing from the critical writings of Joseph Frank, who styled the term "spatial form" for text that worked against the "strict causal-chronological order."¹⁰⁶ Frank suggests that modernist poets, Eliot and Pound, for example, "undermine the inherent consecutiveness of language, frustrating the reader's normal expectation of a sequence and forcing him to perceive the elements of the poem as juxtaposed in space rather than unrolling in time."¹⁰⁷ Joyce's *Finnegans Wake* and *Ulysses* as well, while to some extent loyal to the conventions of narrative structure, are so richly layered with allusions and neologisms that they can also be seen as representing an experiment in the spatial arrangement of text.

The profound influence of writing and the constitutive role it plays in culture as a metaphor or meme¹⁰⁸ should not be

¹⁰⁵ *Ibid.*

¹⁰⁶ Frank, 1981, p. 235, In Bolter p. 159.

¹⁰⁷ Frank, 1963, p. 10, *Ibid.*

¹⁰⁸ When considering the relationship between technology and knowledge, the term "meme," coined by geneticist Richard Dawkins, is quite insightful. Memes can be "tunes, ideas, catch phrases, clothes fashions, ways of making pots or of building arches," Dawkins suggest that "all life evolves by the differential survival of replicating entities." (Hofstadter, D. and Dennett, D. (1981), p. 142). Conceptions of physical life revolve around the gene and DNA. Dawkins suggests that culture is also formed by an analogous kind of replication. From *mimeme*, the Greek term of imitation, "meme" can further be associated with the French word *meme* for "memory." N.K. Humphrey, Dawkin's colleagues further emphasizes that the meme should not be taken as a trope, but

underestimated. But it should not be overstated either. The widespread adoption of writing and its concomitant ways of doing and seeing things must take into account the influences of other technologies of combination (a point which is particularly germane to considerations of virtual reality which has often been described as a convergence of media). Joyce, for example, was an enthusiast of cinema and is seen as attempting in *Ulysses*, for example, to recreate in literature the montage techniques of early film makers.¹⁰⁹ Moreover writing is not unique in this technique of mapping information in spatial terms. Clearly, the memory arts prefigure writing as a technology which uses virtual space to work out ideas. Arguably the metaphor of space is more evident in the memory arts than in coincident manuscript reading and writing which is characterized by what might be called spatio-phonemic tethering: Readers were bound to reading aloud, mouthing, tasting, incanting words. Silent reading, and the concomitant unleashing from the need to read aloud, can be seen as occurring as texts began to take a more uniform shape. (As readers needed to shift from glosses to text or from text to text, and the skill of retaining units or writing within a visual space with paragraphs, margins and spaces between words was developed in the early 1100s).¹¹⁰

that "memes should be regarded as living structures, not just metaphorically but technically. When you plant an idea in my mind, you literally parasitize my brain, turning it into a vehicle for the memes propagation in just the way that a virus may parasitize the genetic mechanism of the host cell." (ibid p. 143).

¹⁰⁹ Kern, S. (1983). pp. 6, 77-80.

¹¹⁰ Illich, I. and Sanders, B. (1988) cite Hugo of St. Victor in 1128 rejoicing that finally "Trimodium est lectionis genis: docentis, descentis

The great strength of writing over memory arts as a technology of virtual space is, as Bolter suggests, exteriority and uniformity. However, exteriority and uniformity (or at least commonality) are evident in the use of commonplaces, a technology of oral culture which has left its trace in textworld. As with memory arts, in commonplaces, information is associated with place, the technology of commonplaces (or *loci communes*) being a descendant of the technology of memory places (or *loci*, in Greek *topoi*, whence the English word "topic").

Commonplaces were oratory passages worthy of recall, the practice of using them, akin to using "quotable quotes." Commonplaces dates back to the classical era and their use lasted well into the romantic age. The legacy of commonplaces can be seen even today in the practice of alluding to well known passages for affect or affectation (e.g. "the quality of mercy not being strained" or "best laid plans" etc.) Walter Ong (1967) notes the use of at least two types of commonplace in the Middle Ages: The analytic and the cumulative, the former as a sort of topic heading or indicator of rhetorical direction, and the latter to invoke the sentiments associated with a particular well known passage.

Just as Bolter suggests that writing leads to a "state of mind" in the writer as a result of writing, Ong notes that the use of commonplaces underscores the formulaic quality of the oral mindset:

The formulary character of oral performance is responsible for the development of the doctrine of

vel pre se insipientis." (I can read aloud to you, you can read aloud to me, and I can read contemplatively to myself.)

commonplaces or Loci communes which dominated skilled verbal performance from oral-aural times until the maturing or the romantic age. The loci communes were essentially formulaic modes of expression derivative from oral practices perpetuating oral psychological structures.¹¹¹

While commonplaces reflect the formulaic character of oral culture and their use has all but disappeared, aspects of the mindset they represent can be seen in one of the most "literate" practices of the twentieth century Western world: Jurisprudence, in the system of "common Law,"¹¹² Just as the practice of using commonplaces in the art of rhetoric was performed in deference to the authority of one's predecessors, so jurisprudence and the notion of precedence is observed in deference to the authority of cases which have been argued previously. There is nothing of a literate mindset about this practice of letting a previously debated and recorded case stand in for the "logical" debate that would pertain to a case at hand. However, this practice which Ong describes as illustrating oral psychological structures persists even in a society of lawyers who use regularly published case reporters, often accessed through *computer indices*. Jurisprudence can be justified by emphasizing the savings to tax payers in not having to debate anew the merits of each case. But when the cases cited as precedence are often spatially and temporally out of the context of a case being argued, the logos of such a practice begs the question.

¹¹¹ Ong, W. (1967). p. 31.

¹¹² Jurisprudence dates back to Aristotle but was introduced as "common law" by Henry II.

Perhaps more interesting in jurisprudence than the question of relevance of one case to another is the level of abstraction that obtains when precedence is pitted against precedence. When searching for a precedent-setting case, lawyers must take care to find the most recent precedent (e.g. Smith vs. Jones can be overturned by James vs. Appleton). They must also consider the relevance of local jurisdictions. Jurisprudence represents a social institution built within an edifice of institutional facts. Legal professionals and students invest dearly in these "facts" until, one could argue, an inversion of Searle's hierarchy takes place. Institutional facts take priority over the material facts and social events upon which they are based.

Just as the meme of the commonplace can be seen in jurisprudence, it can be found in lettered scholarship as well. One can allude to Thomas Kuhn to invoke the theory of shifting scientific paradigms as a revolutionary process, or Albert Einstein to invoke the theory of relativity, or even George Washington to allude to the importance of veracity. Often these references involve opaque or imperfect familiarity with the text to which they refer. Rather, they suggest a faith in authority and a lack of accountability which is more characteristic of an oral mindset. The legacy of the commonplace in literate culture tends to suggest that behind any given technical mindset lies the palimpsest of earlier technological states of mind.

Hypertext, index, author

Hypertext, a method of linking electronic texts to one another (on the surface a form of electronic footnoting), has become the mascot of critical theory. Seeing it as the technological realization of intertextuality,¹¹³ George Landow has described hypertext as representing a convergence of technology and contemporary critical theory.¹¹⁴ Hypertext would seem to be a paradigm model of accountability. Every text has the potential of being linked to, and verified against, every other text. But as one delves more deeply into a universe of electronic writing (e.g. the Internet), hypertext appears to imply the unfixing of text. It increases accountability exponentially, linking reference point to reference point recursively throughout the vast universe of information, in effect, rendering accountability irrelevant. Thus, as Landow suggests, hypertext can be seen as a form of *manifestatio* for post-structuralist notions of fragmentation and decentered subjectivity.

Hypertext's conception was indeed a prescient response to an unchartable universe of information. Vannevar Bush, in 1945, saw problems in the imminent information age with an abundance of data and inadequate means of retrieval:

The difficulty seems to be, not so much that we publish unduly in view of the extent and variety of present day interests, but that publication has extended far beyond our present ability to make real use of the record... Our ineptitude in getting the record is largely caused by the artificiality

¹¹³ See Landow, G. (1992). p. 36.

¹¹⁴ *Ibid.*

of systems of indexing. When data of any sort are placed in storage, they are filed alphabetically or numerically, and information is found (when it is) by tracing it down from subclass to subclass... The human mind does not work that way. It operates by association. With one item in its grasp it snaps instantly to the next that is suggested by the intricate web of trails carried by the cells of the brain.¹¹⁵

Thus, Bush conceived of the "Memex" a device which could "be consulted with exceeding speed and flexibility"¹¹⁶ to access text, sound, and image data.

The technology of hypertext was not realized in Bush's lifetime. However, through the convergence of efforts of the U.S. department of defense's Advanced Research Project Agency (ARPA) in the 1960s, the videodisk from MIT's Architecture machine group of the 1970s and the work of the Xerox Palo Alto Research Center (PARC) in the early 1980s, the technological foundation was laid for hypertext to be developed by Theodor Nelson¹¹⁷ and Douglas Engelbart.¹¹⁸

In the late 1980s, early 1990s, the meme of hypertext could be seen in galleries and museums in exhibits called "art books."¹¹⁹ Loose pages of a book which had been disassembled and scattered in a container invited readers to pick through and examine the book's pages in no particular order. Art books were an analogue of

¹¹⁵ Bush, V. (1945). pp. 16-18.

¹¹⁶ Ibid.

¹¹⁷ Nelson in 1981, wrote *Literary Machines*, subtitled, *The Report on, and of, Project Xanadu, Concerning Word Processing, Electronic Publishing, Hypertext, Tinkertoys, Tomorrow's Intellectual Revolution, and Certain Other Topics, Including Knowledge Education and Freedom*.

¹¹⁸ Engelbart is credited with inventing the first actual working hypertext environment (Landow, G. 1992, p. 169)

¹¹⁹ See Search, P. (1993), p. 73.

hypertext, exploiting the notion of non-linear, non-authorial or multi-authorial narrative. David Bolter, Michael Joyce and John B. Smith, experimented with the notion of non-linear narrative in electronic writing, scripting a hypertext system called Storyspace upon which Joyce initiated perhaps the first interactive novel, *Afternoon*. In Storyspace, readers also travel through a narrative by whatever path they choose, giving the text closure whenever they chose, in effect re-authoring the narrative.

While these early efforts have historical relevance, the zenith of hypertext can be seen as occurring contingently to these experiments, with a new language of computer mediated communication, HTML (hypertext markup language) and a new means of navigating the Internet, a navigation tool called Mosaic. Mosaic, one of a number of front-end (software) devices that enable users to search databases on the World Wide Web (WWW or Web), a hypertext network constructed in 1989 by physicists in CERN,¹²⁰ was the brainchild of 24-year-old Marc Andersen, developed in 1992, while Andersen was a graduate student at the University of Illinois and the National Center for Supercomputing Applications (NCSA).

Mosaic had been preceded by Gopher, created in 1991 at the University of Minnesota, with Mark McKahil. While Gopher, a text-based hierarchically structured browser, was extremely popular in its own right,¹²¹ its popularity was overshadowed by the success

¹²⁰ See Krol, E., *The Whole Internet*

¹²¹ The introduction of Gopher corresponded to a growth rate of subscribers to the Internet from 24,744 services in November 1992 to 291,133 in November 1994. See statistics at The Internet Society.

of Mosaic, and its successor Netscape both with graphical user interfaces (GUIs). The Internet became one of the most rapid growth areas of the early 1990s economy, largely due to the rapid growth of graphical browsing services like Mosaic and Netscape. The number of Web services increased from 512 in February 1993 to 225,443 by December of the same years.¹²² The use of Mosaic alone increased by almost 400%, 11% per week over the same 36 week period.¹²³

The Web and the Internet are household words in 1996, boasting more than 30 million users worldwide and arguably making hypertext a part of the mindset in the text world of the coming century. The pervasiveness of hypertext in day-to-day communications makes some of the implications espoused by Bolter and Landow in 1991 and 1992 all the more prophetic. In hypertext, the linking together of texts, as in Browsing on the WWW, precludes the occurrences of one specific reading experience, or as Bolter puts it, "[the] vanishing of fixed text alters the nature of the audience's shared experience,"¹²⁴ In Bolter's view, electronic writing challenges the monolithic nature of the traditional writing space: print is stable, monumental, controlled by the author; whereas, hypertext is fragmented and decentralized, unaccountable. What better way to characterize the Internet in 1996, or for that matter postmodernity.

The most obvious aspect of the literate state of mind that Bolter and Landow see as being challenged by the advent of

¹²² Statistic from the Internet Society.

¹²³ Negroponte, N. *Being Digital*, pp. 5-6.

¹²⁴ Bolter, J. D. (1991), p. 8.

hypertext is the notion of linear narrative. Landow traces the linearity of narrative back to Aristotle's *Poetics*: "Hypertext, which challenges narrative and all literary forms based on linearity, calls into question ideas of plot and story current since Aristotle."¹²⁵ Of course, Aristotle can be cited as laying down certain "explicit" principles of story and plot, however, he did not develop his notions of these plot elements *ex nihilo*. Rather, the linearity and unity of a narrative can be seen as representing a human mindset which predates writing, arguably by millennia.

Carlo Ginzburg elaborates this view in an article entitled "Morelli, Freud and Sherlock Holmes: Clues and the Scientific Method." Ginzburg traces the roots of narrative back to the conjectural technology of hunters and diviners: "For thousands of years mankind lived by hunting. In the course of endless pursuits hunters learned to construct the appearance of movements of an unseen quarry through its tracks: prints in the ground, snapped twigs, droppings, snagged hairs or feathers, smells, puddles, threads of saliva."¹²⁶ Ginzburg also suggests that perhaps the idea of narrative, metonymy and metaphor have their origins in this technology. The process of letting the clue stand in for the animal (metonymy) and the reconstruction of the animal's movement (a metaphorical process) are seen as the beginnings of story telling and, according to one Chinese legend, the beginning of

¹²⁵ Landow, G. (1992), p. 101.

¹²⁶ Ginzburg, C. (1980). p. 26.

writing itself, "invented by a high official who had remarked the footprints of deer in a sandy riverbank."¹²⁷

Narrative's linearity is a fundamental constituent of the conjectural model. Constructing a conjectural (virtual) depiction of an animal's path involves fundamental theories about time (the movement of the animal) and space (over a given stretch of land). The narrative which the hunter devised, of course, had to comply with the evidence at hand, so the virtual was very much tied to the physical. There is a dissolution of space and time implied by electronic reading and writing, particularly on the Internet. "When" and "where" are largely irrelevant and unverifiable in the cyberspace of USENET, the Web, or IRC (Internet Relay Chat). If, as has been suggested, culture is written, and hypertext is a part of the imminent technological mindset, then the culture of electronic writing is, as Bolter suggests "nothing more or less than a hypertext, or interactive text."¹²⁸ Such a view holds little room for the "old" conjectural models of narrative. However, when one enters into a chat room, or into the virtual reality of a multi-user dimension (MUD), the conjectural model is very much in evidence. One still seeks to solve the mystery, to construct the stories of others and of oneself in relation to these others.

Landow takes a slightly more moderate view of the effects of hypertext on culture. He shares with Bolter, however, the view that the advent of this potentially paradigm shifting technology

¹²⁷ *Ibid*, p. 28.

¹²⁸ *Ibid*, p. 30.

serves to historicize certain fundamental notions in the mindset of the literate world, particularly authorship:

This technology—that of the printed book and its close relations, which include the typed or printed page-engenders certain notions of authorial property, authorial uniqueness, and a physically isolated text that hypertext makes untenable. The evidence of hypertext, in other words, historicizes many of our current assumptions, thereby forcing them to descend from the ethereality of abstraction and appear as corollaries to a particular technology rooted in specific times and places.¹²⁹

For both Bolter and Landow, hypertext represents the technological realization, the *manifestatio* as it were, of a challenge to authorship which has been maintained by a number of contemporary critical theorists.¹³⁰ While the challenge to authorship advanced in post-structuralist theory presents a theoretical notion of history, subjectivity and authorship particular to that discourse, challenging these categories primarily in terms of their ontology, Landow's assertion that these notions are historicized by hypertext suggests a more vernacular sense of the word history, and deserves further elaboration within that purview. Authorship can be considered from a broader historical point of view, not merely through the lens of text or hypertext, but as a category which has been socially constructed and socially legitimated within the textworld and, and like the commonplace, which has the potential for social currency in a modified technological context.

¹²⁹ Landow, G. (1992). p. 33

¹³⁰ See in particular Barthes, R. (1968) "The death of the author." and Foucault, M. (1979) "What is an author?"

The category "author" as we know it today achieved its status in the socio-historical context of the index. The index in the centuries following the invention of the printing press became a form of meta-text, whose influence while largely invisible, was pervasive. Just as the use of glosses and an increasing uniformity in manuscripts fostered silent reading and the exteriority of writing in the 12th century, the printing press in the 15th century led to the exact duplication of pages. The precise pagination which resulted, in turn, made the index a reliable and generalizable means for mapping and subsequently for navigating in textworld. The concept of indices may not have been new. The Alexandrian Library is fabled to have had alphabetical catalogues.¹³¹ But library catalogues, reflecting the multiform character of scribal culture, were generally incomplete and idiosyncratically arranged according to the vagaries of individual library custodians. Furthermore, because manuscript pagination was irregular and the creation of an index could only serve one manuscript, such an undertaking represented a labor of love, or in the case of mendicant librarians, devotion.

The index became a viable technology in the proto-type of mass production which was print culture. Indices, in the spirit of commonplaces, could organize references according to topics, but more significantly, they could also organize according to the category of "author," which was becoming a valuable marketing tool. The pre-eminence of this category today, however, can be

¹³¹ Reynolds, L. D. and Wilson, N. G. (1968). p. 76.

seen as something of an accident, an afterthought in the promotional schemes of early printers:

As self-serving publicists, early printers issued book lists, circulars and broadsides. They put their firm's name, emblem and shop address on the front page of their books. Indeed, their use of title pages entailed a significant reversal of scribal procedures; they put themselves first. Scribal colophons come last. They also extended their new promotional techniques to the authors and artists.¹³²

Before print, authorship was possible, of course, but writing had tended to be seen as more of a collaborative enterprise. In the thirteenth century, St. Bonaventure, for example, outlined four ways one of his contemporaries could make books: as a *scriptor*, (copyist); as a *compiler*, (compiler of other's works); as a *commentator*, (a commentator who adds explanations to the work of others); and as *auctor*, (the author of the principle part but with the addition of the work of others for confirmation).¹³³ Unique authorship was not a consideration in Bonaventure's analysis, possibly because of the problem of assigning proper credit to scribal "authors." There is certainly evidence of an interest in, and admiration of, authors, before printing,¹³⁴ however, indexing, by promoting the specific writer, and printing,

¹³² Eisenstein, E. (1979). p. 59.

¹³³ *Ibid*, p. 122.

¹³⁴ Notwithstanding, the evidence that authorship, as it was exploited by sixteenth-century publishers, can be seen as little more than a marketing tool, early printers were certainly "fans" in their own right even in the age of incunabula. Johannes Trithemius, for example, considered by Besterman to be the "father of the bibliography," compiled *Liber de scriptoriabus Ecclesiastes*, a three thousand-page list of titles and authors containing an alphabetical index of almost 1000 authors." See Besterman, T. (1936). It is perhaps worthy of notice that, while this abbot of Sponheim, clearly had a penchant for authors, he had little faith in print technology: he is said to have had many print editions copied back onto velum. See Lowry, M. (1979), p. 266

by duplicating the writer's name extensively were the tools which served to fix for posterity not only the individual author, but the category of authorship.

Fame then became an inducement for would-be writers:

It is useful to recall that both the eponymous inventor and personal authorship appeared at the same time and as a consequence of the same process. Cheaper writing materials encouraged the separate recording of private lives and correspondence. Not paper mills but printing presses, however, made it possible to preserve personal ephemera intact. The 'drive for fame' may have been effected by print-made immortality.¹³⁵

Authorship also offered less apotheotic promise, the possibility of rising social status. For example, in eighteenth-century France, a man with a skilled pen had the feeling he could climb the social ladder. Writing for the rising "bourgeoisie" put a member of the "middle class" in fairly good company if only by association:

The philosophes were men of letters. This is more than just a phrase. It defines a vantage point and eliminates the stale debate over their status as philosophers...devotion to the art of writing gave the philosophes the strength that comes from membership in a respectable guild...No matter how varied their concerns, they were men of a single career.¹³⁶

Once placed in this historical context the category of writer seems less "essential" and perhaps somewhat more vulnerable to the vagaries of social and technological history. Having written this, however, and notwithstanding the ontological threat to the

¹³⁵ Eisenstein, E. (1979). p 121.

¹³⁶ Gay, P. (1964). p. 117, in Eisenstein, p. 146.

concept of authorship that hypermedia appears to represent, it seems important to consider the potential for the spirit of authorship to persist in the world of electronic writing. There is no small irony in the observation that those who have been the archest critics of the claims of authorship have done so by publishing their arguments and attaching their names to them.

(There is an inherent paradox in "authors" challenging the authority of their critique with their own critique.) In adopting the role of author, whether they claim it or not, these writers have not only furthered themselves professionally and monetarily, they have perpetuated a legitimation process which most certainly persists in the academy,¹³⁷ and even obtains in the most fleeting forms of electronic writing, such as the USENET news group in which one has the capacity to organize one's participation not only according to subject (group and thread) or other variable such as document size or date but also according to "author." To wit, most news reading software, and increasingly e-mail software, allows for the systematic filtering of the submissions of a particularly offensive or uninteresting participant or author.

While there are strong theoretical arguments for challenging the ontological concept of authorship, the disappearance of the category "author" in its social currency is an entirely other matter. The Web is increasingly becoming a space for doing business, one in which even in the world of hypertexts, the promotional tool of authorship, the lure of fame, the public

¹³⁷ See Hodge, D. (1990). pp. 11-12.

fascination and appreciation of celebrity will die an uneasy death.

There may be a danger in taking too "literally" the view that a technology like writing leads to a particular "state of mind."¹³⁸ While one technological metaphor, one way of doing and seeing things can be seen as dominant in a given socio-historical moment, it does not obviate the existence of recessive modes of seeing and doing things, to use the genetic analogy.¹³⁹ The advent of new technologies of communication does not lead to the disappearance of their predecessors. Rather, old modes of communication often get re-purposed and re-configured in interesting ways.

Notwithstanding a historical recontextualization of a notion like authorship presented here, the theoretical challenge to the ontology of authorship needs to be given further consideration. This challenge which is rooted in theories of semiotics and framed in the notion of decentered subjectivity, now an institutional fact which has attained a certain legitimacy in specialized discourses, presents a major obstacle to the furtherance of a theory of virtuality which is open to the potential for convergent and recombinant technologies and technological mindsets.

¹³⁸ In the case of writing akin what Jacques Derrida (1974) refers to as logocentrism. See *Grammatology*, p. 11.

¹³⁹ Dawkins's notion of meme, borrowed from genetics may provide a useful analogy in this regard. A species chances for survival are seen as increasing with a large and varied gene pool. Certain environments may favor a given genetic profile, however, as environments change an alternate genetic profile may be fostered. Likewise, in a given historical context, a given technical mindset may be favored, but as the environment changes a technological meme which has not been as predominant may flourish. However, in such a view, as certain traits are foregrounded, it is important to remember that the other traits will not disappear.

Semiotics

The Mandarin of structuralism and post-structuralism is semiotics. And while, for some writers in this tradition, the science of signification is an all-but-discarded lingua franca (e.g. there is little of this vocabulary in all but the earliest of Foucault's work), for more recent adherents, semiotics is the lens through which culture can best be understood (e.g. Poster, 1990). Anthony Giddens makes the declaration: "Structuralism, and post-structuralism also, are dead traditions of thought,"¹⁴⁰ after which he attempts to give a detailed synthesis of these traditions and, with certain reservations, argues their undeniable contribution to modern philosophy and social theory. Anticipating a similar prognosis, Umberto Eco notes that, since the turn-of-the-century inception of semiotics and semiology the term "sign" has been used in so many different ways in structuralist and post structuralist discourses that it may cease to have any commonly held meaning. In correspondence with Giddens, he suggests that due to this lack of clear definition, some scholars have declared the death of the term. However, he cautions that this death sentence is "pronounced upon an entity which, being without its identity papers, is likely to be resuscitated under a different name."¹⁴¹

The discourse of semiotics would seem a seductive approach for the study of virtuality, particularly a virtuality framed as

¹⁴⁰ Giddens, A. (1987). p. 73.

¹⁴¹ *Ibid*, p. 15.

the experience of "presence" mediated through symbolic representations. There may also be shortcomings to this perspective. Thus, at this point, a slight departure from the historical path will be taken in a brief excursus into some of the more salient claims of semiotics and the merits of viewing virtuality through this lens.

Giddens suggests that while limited homogeneity in the writing of Saussure and Levi-Strauss (whom he sees as structuralists) and Foucault, Lacan, Althusser and Derrida (whom he sees as post-structuralists) leaves their discourse lacking a coherent theory, certain common characteristics can be identified in the work. These authors generally emphasize the relational nature of totalities, the arbitrary character of the sign, the primacy of the signifier over the signified, the decentering of the subject, a concern with the nature of writing and texts, and temporality as constitutively involved with objects and events. An excursus into all of these issues runs the risk of overindulging a discourse which some scholars describe as frustratingly opaque.¹⁴² However, the consideration of virtuality as mediated "presence" cries out for the exploration of several connected issues related to the decentering of subjectivity and the third person ontology of consciousness that it implies. Thus, in order to critique this view, a systematic, if brief, expository is required.

Ferdinand de Saussure is considered the father of modern linguistics as well as the progenitor of structuralism, though he

¹⁴² See, for example, Hodge, D. (1990), p. 14.

scarcely used the term. His *Course in General Linguistics*, delivered posthumously by two of his students between 1906 and 1911, laid the foundation for the systematic study of language, seen in the structural linguistics of Bloom, Harris, and Chomsky. It was also instrumental to the structural anthropology of Claude Levi-Strauss.

Saussure suggested the dichotomy of *langue* and *parole* to distinguish between "what is social and what is individual" in languages. Systematic language (*langue*) is the well-defined social object of the heterogeneous mass of speech facts (*parole*).¹⁴³ Within *langue* Saussure devised the notion of the sign, consisting in a signifier (sound image) and a signified (the concept, or mental image, it represents).¹⁴⁴ In addition, he maintained the arbitrary nature of the sign. That is, aside from special cases of onomatopoeia, there is no inner relationship between the sound image and what it is taken to represent. Thus different languages can use distinct sound images to refer to the same concept. Saussure further suggested that signification was a relational process: "Language is a system of interdependent terms in which the value of each term results solely from the simultaneous presence of the other."¹⁴⁵

Giddens finds a fundamental inconsistency in Saussure's model. The view that *langue* is psychological (the signified representing a concept within an individual's mind) is incompatible with the view that it is a collective product.

¹⁴³ Saussure, F. de (1959), p. 14.

¹⁴⁴ *Ibid*, p. 67.

¹⁴⁵ *Ibid*.

Language viewed as a individual's psychological reality is inconsistent with the view of language as a collective cultural reality. It is also inconsistent with the arbitrariness of the sign. If language is to be found in an individual's psychological reality, then meanings are determined within that reality.¹⁴⁶

Derrida also takes issue with Saussure's metaphysics of presence:

...no element can function as a sign without relating to another element which itself is not simply present. This linkage means that each "element:-phoneme or grapheme- is constituted with reference to the trace in it of other elements of the sequence of the system...Nothing, either in the elements or in the system is anywhere ever simply present or absent."¹⁴⁷

The relational nature of Saussure's sign system makes for recursion. A phoneme or grapheme has no identity in itself (there can be many allophones or graphemic variations). It can only be identified in relation to other phonemes or graphemes which it is not (difference).

Giddens likens Derrida's critique of the metaphysics of presence to Wittgenstein's attempts to deconstruct metaphysics in *Philosophical Investigations*. Both authors suggest that "there are no essences to be found in linguistic formulations...neither words nor sentences involve some sort of corresponding mental images which supply their meaning, any more than objects or events in the external world to which words can be used to refer."¹⁴⁸

¹⁴⁶ Giddens, (1987). p. 75.

¹⁴⁷ Derrida, J. (1981), *Positions*, p. 92. Quoted in Giddens, (1987), p. 90.

¹⁴⁸ Giddens, A. (1987). p. 85

Both authors would agree, says Giddens, that language is not to be interpreted in terms of the subjective meanings of individual agents. Thus "language is necessarily an anonymous production and in an important sense subject-less."¹⁴⁹ However, where these two authors differ is on the point of where meaning is constituted. While Wittgenstein sought to develop a theory of ordinary language, locating signification in the context of social practices, Derrida, like other post-structuralists, makes what Giddens calls a retreat into the code,¹⁵⁰ subverting or inverting speech and writing (where writing and text are seen as referring to a larger array of systems of representation than merely the graphemic)¹⁵¹ and its implied rationalist regression in which one system is seen as subsumed by a more general system. Derrida inverts the primacy of speech and writing suggested by Saussure, seeing writing as better representing the epistemological domain of mediated consciousness. Drawing upon Saussure's analogy of hand writing, whose manageable diversity is an illustration of the relational nature of the sign system, Derrida uses writing to deconstruct rationalist logocentrism,¹⁵² in effect to deconstruct itself:

¹⁴⁹ *Ibid*, p. 86.

¹⁵⁰ *Ibid*, p. 74.

¹⁵¹ Derrida (1974) argues for a sense of writing broader than the mere graphemic in which speech falls within this broader tableau. See *Of Grammatology*, p. 30-73.

¹⁵² Robert Logan, a colleague of Marshall McLuhan at University of Toronto, makes particularly strong claims in regard to alphabetic writing and the western cultural patterns it fosters, suggesting that the alphabet leads to a number of thought characteristics which obtain in the West to a greater degree than in the East: i.e. left brain orientation, linearity, logic, deduction, rationalism, centralism, abstract science, technology, monotheism, absolutism.

If writing is nothing but the figuration of the language, one has the right to exclude it from the interiority of the system (for it must be believed that there is an inside to the language), as the image can be excluded without damage from the system of reality. Proposing as his theme "the representing of language by writing" Saussure thus begins by positing that writing is unrelated to the inner system of language. External/internal, image/reality, representation/presence, such is the old grid to which is given the task of outlining the domain of science.¹⁵³

The decentering of subjectivity, the notion of "subjectless language" is an important development in social theory, particularly when language is given a broader scope, representing the *logos* of all cultural productions. This turn has serious implications to our understanding of consciousness. Freud, had a century before post-structuralism foregrounded the importance of unconscious drives in human behavior, allowing the central faculty of reason, of a centered self to be questioned.¹⁵⁴ Against this background, certain post-structuralists considered Saussure's relational framework to deconstruct the unity of identity. Jacques Lacan, for example, notes that "I" is only "I" in relation to "the discourse of the other,"¹⁵⁵ the other's identity being equally relational.

Giddens elaborates the implications of subjectless language on consciousness thus: "the unconscious categories of mind are the constitutive backdrop against which sentiments of selfhood exist. Consciousness is made possible by structures of mind not

¹⁵³ Derrida, J. (1974), p. 33.

¹⁵⁴ See, Rorty, R. (1989), p. 33, and Turkle, S. (1995).

¹⁵⁵ Lacan, J. (1977). p. 453.

immediately available to it."¹⁵⁶ This aspect of post-structural theory owes a debt to Martin Heidegger who can be seen as presaging Derrida's inversion of writing and speech, exploring the relationship between culture and individual expression:

Man acts as if he were the shaper and master of language, while it is language which remains mistress of man. when this relation of dominance is inverted, man succumbs to strange contrivances. Language then becomes a means of expression. Where it is expression, language can degenerate to mere impression (to mere print). Even where the use of language is no more than this, it is good that one should still be careful in one's speech. But this alone can never extricate us from the reversal, from the confusion of the true dominance as between language and man. For in fact it is language that speaks. Man begins speaking and man only speaks to the extent that he responds to, that he corresponds with language, and only so far as hears language addressing, concurring with him. Language is the highest and everywhere, the foremost of these assents which we human beings can never articulate solely out of our own means.¹⁵⁷

Heidegger offered a view of language which is arguably the post-structuralist template for understanding culture. But equally prophetically, his cautionary words to "be careful in one's speech," that we "can never articulate solely out our own means," may be seen as the undoing of post-structuralism. Language for post-structuralists is both the object of study and the means of expression. This creates a tremendous paradox in using language as a metaphor for culture, for as George Steiner says: "There is an

¹⁵⁶ Giddens, A. (1987), p.88.

¹⁵⁷ From "*Dichterisch Wohnt der Mensch*" (1954). Translated by and quoted in Steiner, G. (1975), pp. x-xi.

inescapable ontological autism, a proceeding inside a circle of mirrors, in any conscious reflection on reflection of language."¹⁵⁸

Digital dialects of post-structuralism

David Bolter (1991) uses the vocabulary of post-structuralism to address the general concern for the future of literacy in the computer age. He is indeed categorical in prescribing the direction that computer literacy be developed:

To fulfill its promise, the computer must not be used merely to provide video games. Like all earlier forms of literacy, computer literacy is semiotic. Semiosis entails the reading and writing of signs, and any activity that does not involve signs should be not be confused with literacy.¹⁵⁹

At first glance, it is unclear what is meant by semiosis here. Even in the most general sense, the process of interpreting signs would be taken to include the "reading" of images¹⁶⁰ required in even the most rudimentary of video games. Bolter further suggests that media such as television which is "primarily a perceptual rather than a semiotic medium"¹⁶¹ do not allow the viewer "to win and maintain a critical distance"¹⁶² and that the VCR and the remote control afford greater control of the viewing experience, thus allowing the viewer the opportunity to "make a text" out of a number of different programs viewed. In this case Bolter seems to

¹⁵⁸ *Ibid.* p. 110.

¹⁵⁹ Bolter, J. D. (1991), p. 224.

¹⁶⁰ See, Barthes, R. (1977).

¹⁶¹ Bolter, J. D. (1991), p. 226.

¹⁶² *Ibid.*, p. 227.

equate semiosis with agency, a claim which tends to be contradictory with almost all of the theory discussed thus far. As suggested above, the notion of decentering subjectivity rests upon the view widely held in the phenomenology of post-structuralist theory that human perception is always mediated by constructs.

Bolter's critique of VR is not much more promising:

A simulated world, a world of pure perception, can serve to counterpoint daily work in the world of signs. But it should be obvious that virtual reality cannot in itself sustain intellectual and cultural development, it must always be the "other" world which we visit from time to time.¹⁶³

The first assumption that begs the question here is Bolter's characterization of VR as a "world of pure perception." The post-structural decentering of subjectivity is intended to be a refutation of "pure perception," as are Searle's (1995) elaborations on social construction of institutional facts (discussed in chapter 1). It is unclear how VR could be framed as "pure perception." What is virtual reality if not representational? Clearly Bolter is making a departure from the usual tenets of post-structuralism in his use of the term semiosis. However, the dynamics of this departure are not "spelled out" and as a result the reader is left to acquire yet another dialect of a heterogeneous discourse.

In contrast, Mark Poster (1990) in the *Mode of Information* spells out quite clearly where he positions himself in the post-structuralist discourse. Poster connects a specific technology

¹⁶³ *Ibid*, p. 230.

with a theoretician whose work seems by analogy suited to this purpose: TV and Baudrillard (semiosis), databases and Foucault (surveillance), electronic writing and Derrida (writing culture) and computer science and Lyotard (the postmodern construction and legitimation of scientific knowledge). It is curious how looking at the table of contents of the book is an illustration of the persistence of the commonplace in lettered scholarship. While each of these authors has written on a wide variety of topics, their names can be used in a form of metonymy, the name standing for a theory: Baudrillard (semiosis), Foucault (surveillance), Derrida (writing culture), Lyotard (the postmodern construction and legitimation of scientific knowledge).

Poster's dialect of post-structuralism is also in keeping with the discourse's politics. The book's title is a marriage of tropes between the Marxian "mode of production" and the Baudrillardian "mode of signification." Poster's work may be seen as contributing to the Marxian project in responding to concerns raised by Jay Ogilvy (1984) who argues that Marxian economics cannot be sustained in the information age:

[I]n Marx's terms, property is by definition alienable: that is, unlike your elbow which is you and not yours, property must be transferable to another (*alia equals other*). I sell a cow. You got the cow. I don't have the cow anymore. I sell you information. You got the information. I still have the information. That's one anomaly. Another anomaly intrinsic in information is 'the difference that makes a difference' - to a receiver. So the condition of the receiver is an important part of whether a given signal is or is not information.¹⁶⁴

¹⁶⁴ In Brand, S. (1987), p.248.

The Marxian model alludes to the physical products of human activity, particularly in the context of the industrial revolution. The "mode of information" is a concept which reflects the view that "history may be periodized by the structure in this case of symbolic exchange, but also that the current culture gives a certain "fetishist" importance to "information."¹⁶⁵ Poster suggests that his work dovetails with work done at the Frankfurt School aimed at uncovering the manipulation of the masses by the culture industry, as well as the program of "cultural studies" of Stuart Hall in locating in popular groups, points of resistance to dominant forms,¹⁶⁶ in addition, advancing this work by exploring how culture constitutes subjects rather than how groups of already constituted subjects respond to the external demands of mass culture.

Language for Poster, like other post-structuralists, takes into consideration more than the codes originally referred to by Saussure. The Saussurian model has been elaborated to apply to a wider variety of non-linguistic codes, by Barthes, for example, to codes of dress.¹⁶⁷

In Poster's view, language is not a tool of the rational subject but an instrument of self-referentiality: "The new language structures refer back upon themselves, subverting referentiality and thereby acting upon the subject and constituting it in new and disorienting ways."¹⁶⁸ The "mode of

¹⁶⁵ Poster, M. (1990), p.6.

¹⁶⁶ *Ibid.* p. 16.

¹⁶⁷ Barthes, R. (1983).

¹⁶⁸ Poster, M. (1990). p. 18

information" is a move away from the "action centered" theories of Marx, Weber and Daniel Bell. Poster also renounces the totalization process that has occurred in social theory, for example, in Daniel Bell's pitting of post-industrial society against its industrial predecessor. He argues that the "mode of information is not intended as a totalizing or essentializing category."¹⁶⁹

This emphasis on non-essentializing language is indeed one of the pitfalls of semiotics. Poster, for example, becomes trapped in the paradox of self-referential language of which Steiner speaks. For there is a sense in which Poster's analysis is articulated in a totalizing or essentializing "language" of post-structuralism. Consider, for example, Baudrillard's reification of the sign.

Normally a sign is composed of a word and a mental image and is associated with a "thing" in the "real" world. When signs are exchanged between individuals they become symbolic; their meaning floats ambiguously between the individuals, associated as it necessarily is with their relationship to one another. The word does not simply have a "meaning"; it is shared between the speakers, exchanged like gifts that enrich or diminish the social tie.¹⁷⁰

In Poster's postmodern world of the TV ad, there are "floating signifiers" which need no referent in the "real" world.¹⁷¹ In this view, when the marvel of tape editing makes it possible for a Prince Charming to pop into a floor-wax commercial, we have moved into the "mode of information" in which there are "structures

¹⁶⁹ *Ibid.* p. 16.

¹⁷⁰ *Ibid.* p. 58.

¹⁷¹ *Ibid.* p. 58.

without direct referents, invented models of reality which themselves contest the distinction between the real and the fictional, strings of words and images that represent nothing but themselves."¹⁷²

If these signifiers are seen to float between subjects as Poster suggests, the question arises: by what dynamic are they signified? The departure from Saussure's semiotics here, which is quite common in post-structuralism, is not trivial. For the notion of "floating signifiers" to be viable, the signifier must be able to stand on its own, that is, to be meaningful without a corresponding signified (or mental concept). This is the conceptual turn Giddens makes when raising the issue of a subjectless language.

The problem here is a problem of epistemology. It is one thing to reject the subjective language argument. Languages clearly have a cultural currency. However, there must always be an interpreter for the sign to function. Indeed, the *deconstruction* of language and culture, which has become a popular notion in post-structuralist discourse, is in effect a reconstruction or reinterpretation, equally prone cultural or institutional legitimation processes.¹⁷³ Albeit, as Poster suggests, many signifiers do not possess referents in the physical world. This point is made by Searle (1995) with regard to

¹⁷² *Ibid.* p. 57.

¹⁷³ This was enormous obstacle to artificial intelligence work in the 70s and 80s related to interpreting natural language. Roger Schank (1976), for example, noted that nominal concepts (nouns) must represent episodic as well as declarative knowledge. The concept of "spoon" invokes particular associations for someone who, for example, was beaten with a spoon as a child. Words are invariably tied to experience.

institutional facts. However, even the most institutionally abstracted of facts are reified not by a semiotic essentialism, but through their currency of shared experience. In ordinary language use, testing an interlocutor's experience is a normal feature of interchange. Human beings, being adept at narrative, are skilled at inferring, however imperfectly, an interlocutors personal history in relation to her words.

Poster holds the TV ad up as a model of semiotic sophistication. Perhaps a better model of semiotic sophistication is the stock exchange of the information age. The modern day stock market suggests that the digital world is increasingly a world of symbolic over material exchanges. The telegraph more than the computer can be seen as introducing an element of virtuality to world economics. As James Carey (1988)¹⁷⁴ explains, the instantaneous transmission of commodities values creates a dissolution of time and space. With the telegraph, space and time become irrelevant. When sales can be made before purchases, the usual narrative *logos* of exchange is reversed and as a result the material good that a stock is taken to represent comes to be of little relevance.

The exchange-world of the telegraph is a symbolic world, but referents such as: stocks, corporate bonds, municipal bonds, treasury bonds, notes and bills, commodities, currencies, mortgages, oil and natural gas, precious metals, real estate, and bank certificates of deposit, represent assets removed from associations to physical or brute facts by fewer orders of

¹⁷⁴ Carey, J. W. (1988), p. 222.

complexity than the exchange-world of the computer mediated exchange (CME) and "derivatives" trading. Referents such as, interest rates swaps, interest rates options, currency futures and options, stock-index futures and options, swaptions, caps, floors, collars, collateralized mortgage obligations, commodity futures and options, forward commodity contracts, equity linked bank deposits, IOs, POs, leaps, synthetic securities, Eurodollar futures, and yield curve notes¹⁷⁵ point to a semiotic system many orders of complexity more abstracted from physical or brute facts. In such an environment, it is imperative to maintain, at least in principle, the lien between symbolic and physical reality. The fall of the Barings Bank with losses of \$1.24 billion attributed to futures trader Nick Leeson¹⁷⁶ or comparable problems at the Daiwa Bank when bond trader Toshide Iguchi¹⁷⁷ tallied up \$1.1 billion in losses are indicators of an exchange arguably too heavily invested in reifying the symbolic.

In a global economy in which it become increasingly difficult to hold multi-national corporations locally accountable (tied to a specific physical jurisdiction), it is not difficult to make the conceptual leap to talking of virtual economies. Governments could find lucrative tax revenues from "virtual" transactions. However, investment in the frequently metamorphosing metaphor of cyberspace is a risky business. When the newly emerging virtual world is so thinly charted, putting stock in a given map can have catastrophic consequences.

¹⁷⁵ "The Secret Money Machine." *Time*, April 11, 1994, p. 23.

¹⁷⁶ "Losing One's Barings." *Time*, October 16, 1995, p. 60.

¹⁷⁷ "A Blown Billion." *Time*, October 9, 1995, p. 34.

The "reality" of semiotic sophistication of the digital stock exchange is still very much tied to community interpretation of social practices. Thus the phenomenon of the corporate takeover, so much a part of the popular imagination in the 1980s, has often been framed as a problem of interpretation. Several popular films feature the semiotics of the corporate takeover centrally: e.g *Barbarians at the Gate* (1995), *Pretty Woman* (1994), *Other People's Money* (1995). The last of these illustrates the issue of interpretation well. As the central character in the film points out, the fictitious company "New England Wire and Cable" is worth more dead than alive. His interpretation is framed from the perspective of value of the Company to stock holders if it is broken up and the parts are sold off. The company's CEO presents the problem from a different perspective. He frames the company's worth in terms of what it makes, who it employs and the community it sustains. The "real" signification of this complex institutional object is nowhere floating between interlocutors. It is constructed by them, according to their experiences, according to their priorities, according to their needs and desires.

In Poster's 'reading' of post-structuralism, the theoretical turn has been made from seeing human beings as passively indoctrinated by mass culture to being impassively constituted by a self-animating sign system. The flaw here is not that signs and sign systems do not play a constitutive role in individuals' repertoire for interpreting and conveying their reality, but that the individual subject is not seen as a stakeholder, a dynamic

agent, a self-constituting actor in the process of socially constructing that language (or reality). By removing symbolic interaction from the social domain, by inveighing against action centered theories, Poster has privileged and essentialized semiotics, a discourse itself, after all, which in its use from Saussure to Barthes to Baudrillard has been nuanced by a number of different dialects.¹⁷⁸

The concept of virtuality suggests technologies which offer unique and individual experiences and calls for a theory which reflects these characteristics. Critical theory which invests heavily in the metaphor of text bears the burden of the Marxian notions of consciousness and consciousness raising which were better suited to models of mass communication, or communication for the masses.

Consciousness and consensual theory

When examined through the lens of post-structuralism, a subjectless language is an easy target for critical theory. Thus, post-structuralism encourages the study of language and the

¹⁷⁸ In adopting the rhetoric of poststructuralism, Poster has done what any of us does upon entering into a new discourse community. We adopt what we deem to be the community's language and to some degree its values. We experiment with these in the manner of Davidson's notion of passing theories. We use the terms "signifier" or "self-reference" according to our experience of their use. We discover perhaps that one interlocutor uses them in a manner different to another. We go along tentatively with what we perceive to be the appropriate question. Do these signifiers come unglued from any possible physical referents. This is besides the point. We construct our symbolic reality in accordance with a position that we feel will maintain the integrity, of ourselves, of our particular version of reality and perhaps sometimes, even of our interlocutors.

structures of thought as exclusive and oppressive. This perspective is perhaps something of a Marxist legacy. Marx in *The German Ideology*, asserts the Hegelian tenet that, "It is not the consciousness of men which determines their existence, but on the contrary it is their social existence which determines their consciousness." ¹⁷⁹

In giving a material account of consciousness, Marx generalizes it and ascribes it to the mass rather than to the individual: "Consciousness can never be anything else than the conscious existence, and the existence of men is their actual life process."¹⁸⁰ or to put it in Raymond William's words "consciousness is seen from the beginning as a part of the human material social process, and its products in ideas are then as much a part of the process as material products themselves."¹⁸¹

John Searle's work in debating the viability of artificial intelligence¹⁸² has led him to present an opposing view of consciousness, stressing its being a "biological feature of certain organisms in exactly the same sense of "biological" in which photosynthesis, mitosis, digestion, and reproduction are biological features of organisms."¹⁸³ The incompatibility of the Marxist/post-structuralist view of consciousness leads to the paradox that human consciousness is determined historically and culturally, but it is also a natural state of human beings. And while consciousness is cultivated in a specific language and

¹⁷⁹ Marx, K. (1963), p.11

¹⁸⁰ *Ibid.* p.14

¹⁸¹ Williams, R. (1977), pp. 59-60

¹⁸² Searle, J. (1984).

¹⁸³ *Ibid.* p. 93

culture, one's individual consciousness reflects one's personal history in that language and culture.

Searle (1984, 1994) stresses that failure to appreciate the subjective character of consciousness has been a enormous obstacle to scholarly research:

In ways that are not at all obvious on the surface, much of the bankruptcy of most work in philosophy of mind and a great deal of the sterility of academic psychology over the past fifty years, over the whole of my intellectual lifetime, have come from the persistent failure to recognize and come to terms with the fact that the ontology of the mental is an irreducibly first-person ontology.¹⁸⁴

John Thompson (1990) in his research on ideology and ideology critique raises a similar objection to what he calls "consensual theory." For Thompson "[the] main difficulty with the core consensual theory is that it exaggerates the extent to which particular values and beliefs are shared in modern industrial societies."¹⁸⁵ Thompson concedes that there is "some plausibility" to social reproduction which enables the process of socialization, and ensures the conservation of certain skills and attitudes. However, the assertion of consensual theory that individuals are "products of" or "constituted by" the process of socialization, obscures the strong possibility that human agents are individually capable of differentially and variably positioning themselves in relation to social norms and practices. Social actors can not merely align themselves with or distance themselves from social processes, they can ridicule them, protest them, contest them, even reject them.

¹⁸⁴ Searle, J. (1994), p. 95

¹⁸⁵ Thompson, J. (1990), p. 88.

Jim Collins also criticizes current versions of consensual theory, demonstrating how cultural production tends not to support the argument of popular culture as enforcing a dominant ideology. Collins (1989) identifies an interesting test case in the genre of detective fiction which has been criticized as repressive by Dennis Porter. Porter invokes Michel Foucault's (or Jeremy Bentham's) panopticon and Louis Althusser's notion of ideological state apparatus, models of centralized control over culture. Collins suggests that the weakness with these central control models is the assumption of "rigorous integration and subordination of all cultural activity to the needs of a central power source."¹⁸⁶ Collins cites many examples of dissension in the ranks of popular fiction writers. The work of writers such as William McIlvanney through his protagonist "Laidlaw", Collins argues, shows both a tacit support for the status quo and a conflictual distancing or anomie: "the detective's law consistently opposes that established by the State."¹⁸⁷ Of course, tacit conspiracies to oppress can be detected in popular fiction and in productions of popular culture in general, but only by turning a blind eye toward individual positionings with regard to diverse interpretations of social norms.

Consensual theory in a sense both supports and refutes the post-structuralist notion of a subjectless language and a consciousness mediated through culturally constituted frames of analysis. If, as Bolter suggests "culture is written," then human

¹⁸⁶ Collins, J. (1989), p.28

¹⁸⁷ *Ibid.* p. 30

consciousness also is written by consensual theory or rather printed, or more recently photocopied or scanned. In an age of mechanical and electronic reproduction, consensual theory makes exact duplicates of individual human consciousness.

A popular speculation in science fiction extends this metaphor with machines for human teleportation.¹⁸⁸ The basic premise is that a person could be scanned with every detail to the specification of the atom recorded. The duplicate could then be beamed at the speed of light to a distant location. The ethical consideration in such a technology, of course, is what to do with the original. The parable of teleportation may be taken as something of a caveat with regard to the duplication of human consciousness which consensual theories routinely perform.

The experience society

Myron Krueger¹⁸⁹ uses the term "experience society" to refer to the coming society increasingly invested in virtual reality technology, a society in which in growing numbers, human beings will interact over distance through computers, with "a computer and network in every effective object in our environment."¹⁹⁰ This, in Krueger's view, will be a society in which education will be rethought or perhaps more importantly re-experienced. Instead of being taught to sit and sit, fed in calculated measures cerebral pabulum of all that is deemed important, Krueger sees

¹⁸⁸ See Hostadter, D.R. and Dennett, D.C. (1981); Penrose, R (1989). p. 27.

¹⁸⁹ Krueger, M. (1993).

¹⁹⁰ *Ibid.* p. 162

future children having the opportunity to engage their entire CNSs exploring mimetic and imaginary environments, in which emphasis is not on absorbing knowledge but on "knowing what is known and how to ask for it."¹⁹¹

This is certainly a sharp contrast from the information age that Mark Poster anticipates, an age in which information takes on a life of its own and humans are drawn further and further away from physical experience. There are certain to be those who find Krueger's vision critically unpalatable. A future in which more and more of the everyday takes place in "virtual reality," an experience society, invokes the utopian world of behavioral scientists, a society in which action can easily be monitored and programmed. Distrust of surveillance is a common theme in poststructuralist discourse. And indeed, the most prevalent theories of VR, which include head trackers, motion detectors and positioning devices, suggest that surveillance is an inescapable precondition of entering into virtual reality. But to reap this technology's benefits, one must be "invested" in it.¹⁹²

Language and experience

The moral highroad which might steer us away from experience training runs the risk of undervaluing the merits of human

¹⁹¹ *Ibid.* p. 163

¹⁹² Some of Krueger's examples of experiential training, examples of military simulations for instance, easily invoke the popular image of the soldier who is trained not to hesitate in a crisis situation. In abundant popular depictions, we have tended to root for the flawed soldier who questions the ethics of his or her training.

experience. Perhaps a more germane example of experience training than military training is another Krueger alludes to, second-language training. Second-language training is an interesting example because it introduces issues of functionality and use value to address linguistic metaphors and tools of analysis so popular in critical theory today. Also, in the discipline of applied linguistics itself, many relevant issues have already been explored.

Linguists weighed the merits of rationalist and empiricist views of language learning throughout the 1960s, the two positions summarized as follows: (1) In the rationalist view, language is an innate capacity of human beings, whereas (2) in the empiricist view (particularly in its behaviorist incarnation), language learning is a response (conditioning) to language (linguistic stimuli) to which the language learner is exposed.¹⁹³ One would tend to associate empiricism with experience of and response to the exterior world, and rationalism with the largely mentalistic exercises of analysis and synthesis of pre-existing schemata. Chomsky, for example, presents a view of language learning taken from Von Humbolt (1836):

One cannot really teach language but can only present the conditions under which it will develop spontaneously in the mind in its own way. Thus the form of language, the schema for its grammar, is to a large extent given, though it will not be available for use without the appropriate experience to set the language forming processes into operation.¹⁹⁴

¹⁹³ Chomsky explores the comparison between the two views of language learning at length. Chomsky, N. (1965), pp. 47-50.

¹⁹⁴ *Ibid.* p. 51

Chomsky, in fact, saw little practical application for his linguistic theories in language teaching, nor were they of much use to the project of natural language understanding in artificial intelligence from the mid-sixties to the latter part of the eighties.¹⁹⁵

Of note here, however, is that while critical theorists would tend to line up on one side of the rationalist vs. empiricist debate, in both views experience is foregrounded. Indeed, Humbolt's non-interventionist caveat privileges authentic experience. The problem, of course, is how can experience be simulated (in the case of the VR practitioner) or examined (in the case of the researcher and theorist) and any claim to authenticity maintained.

The logic of technology

The challenges of a theory suited to an experience-oriented technology like virtual reality are many. In some respects a vocabulary does not exist which does not generalize experience. In addition, one would still need to ask through what means an account would be made for the commonalities among human beings that define culture. One method, which has also been popular in post-structural theory is by interpreting those commonalities as language, thus generalizing the notion of language to reflect

¹⁹⁵ See Petrick, S. (1964) calculated the improbability of a autonomous phrase structure parser using TGG, taking 6 times the life expectancy of our sun to parse one sentence.

collection of symbolic forms. Technology can also be interpreted in this manner. Traced back to its Greek origins, the word technology combines the words *techne* and *logos*. When *techne* (art or skill) combines with *logos* (language, or system), the handiwork of the technician is adopted, embraced and generalized within the population until it is woven, often imperceptibly, into the fabric of culture.

The word technology, of course, is understood differently in different discourses. One popular dictionary defines it thus: "1: technical language, 2 a: applied science b: a scientific method for achieving a practical purpose 3: the totality of means employed to provide objects necessary for human sustenance and comfort."¹⁹⁶ Michel Foucault's varied uses of the term most closely correspond to definition 1 and definition 3.¹⁹⁷ In this respect, technologies can be seen as the material and symbolic agents of *episteme* (knowledge) which Foucault describes as

the total set of relations that unite, at a given period, the discursive practices that give rise to epistemological figures, sciences, and possibly formalized systems... it is the totality of relations that can be discovered, for a given period, between the sciences when one analyzes them at the level of discursive regularity.¹⁹⁸

In this view, technology becomes the ostensible means through which knowledge is negotiated by members within a society.

¹⁹⁶ Webster's Ninth New College Dictionary (1989).

¹⁹⁷ Carlo Ginzburg (1976, p. xviii.) has described Foucault's larger project as exposing languages of exclusion.

¹⁹⁸ Foucault, M. (1972). p. 191.

In keeping with Dawkin's notion of meme, the infectious idea which catches hold of the popular imagination, Steven Kern has explored the imperceptible proliferation of ideas and technics within the culture and society of the turn of the last century. He argues that "technics [provide] metaphors and analogies for changing the structures of life and thought."¹⁹⁹ Kern asserts that the "conceptual distance" between fields or discourses which share such metaphors makes for persuasive support of their tacit pervasiveness. He points to discourses on Cubism in the early part of the century and the invention of military camouflage which Picasso, in a remark to Gertrude Stein in 1915, claimed the Cubists had invented. Kern suggests that the connection between Cubism and camouflage more significantly illustrates the constituent function of negative space manifested widely throughout Western culture in the early part of the twentieth century; in field theory in physics, in architectural spaces, in the pauses and blanks in Mallarmés poetry and a new-found interest in silence in literature and music.²⁰⁰

Media technologies have also be seen as providing a template or pattern through which interactions will be influenced. The argument has been resuscitated many times between Plato and Postman: in Benjamin Lee Worf's linguistic relativism, Harold Innis's bias of media, Marshal McLuhan's famous "medium is the message," Jacques Derrida's notion of logocentrism. In a chapter of *Amusing Ourselves to Death* called "The medium is the metaphor,"

¹⁹⁹ Kern, S. (1983). pp. 7-8.

²⁰⁰ *Ibid.* p. 271.

Neil Postman echoes McLuhan in suggesting that "forms of public discourse regulate and even dictate what kind of content can issue from such forms." Concerned with the logical limits placed on communication by a given medium, (e.g. he uses the example of a smoke signal as an unlikely carrier of philosophical debate) Postman stresses that, "how we are obliged to conduct conversations will have the strongest possible influence on what kind of ideas we can conveniently express."²⁰¹

There is another sense in which the title "The Medium is the Metaphor" can be illuminating. In addition to influencing the communication of people who employ them, media can similarly influence scholars who study them. In addition to constraining or empowering societal and cultural forces in their day-to-day use, Media can also be seen as technological templates, metaphors which frame our understanding of events. This point is illustrated by Elizabeth Eisenstein's elaboration of how the printing press of the late fifteenth century can be seen as the prototype of the assembly line and mass production that would pervade industrialized Europe.²⁰² If, as has been argued, much current scholarship is limited by its extending of the metaphor of the book to post-textual technologies, the caution must be advanced that technologies have the potential to provide both limiting and illuminating metaphors.²⁰³

²⁰¹ In Postman, N. (1985). pp. 3-15.

²⁰² Eisenstein, E. (1979).

²⁰³ Neurological research in this century points to numerous examples of how media technologies provide defining metaphors for scientific inquiry. Carl Lashley's search for the engram (the smallest particle of memory) was coincident with efforts to split the atom; Wilder Penfield prodded patients' brains, instantiating episodes of recall with concomitant sights, sounds, and

Neo-Luddites

Rather than seeing technology as engaging language and ideas in an illuminating way, far too often in contemporary critical theory, technology is seen as a subversive force. Technology is science, knowledge, system, language, always non-human; thus, a convenient target for Luddite or Neo-Luddite critique.²⁰⁴

Critiques of technology as subversive are often too general to be of much use in understanding the intricacies of technological innovation and the human element within it. Even the popular use of the term Luddite or neo-Luddite is something of a discredit to actual Luddites, the nineteenth century hand loom weavers who vandalized mechanical looms in the early industrial England. E.P. Thompson asserts that it was not in uncontrolled reactionary zeal against technology that Luddites, followers of a fictional General Ludd, acted, but in a systematic attempt to maintain the quality and price of their handiworks. Moreover, Thompson suggests that far from the anarchists they are sometimes characterized as, "the framework-knitters claimed the constitutional sanction even for frame breaking [u]nder the Charter granted by Charles II."²⁰⁵

smells and was led to the conclusion that memories were stored as though on a video tape; Donald Hebb posited that brains do not atrophy as once thought. Rather, memories consolidate in vastly interconnected cell assemblies. Hebb's position gives rise to subsequent theories of brains being networks of neurons.

²⁰⁴ See Grossman, D. "Neo-Luddites: Don't say yes to technology." In *Utne Reader* Mar/Apr. 1990, pp. 44-49; And Glendinning, C., "Notes toward a Neo-Luddite manifesto." *Ibid.* pp. 50-53.

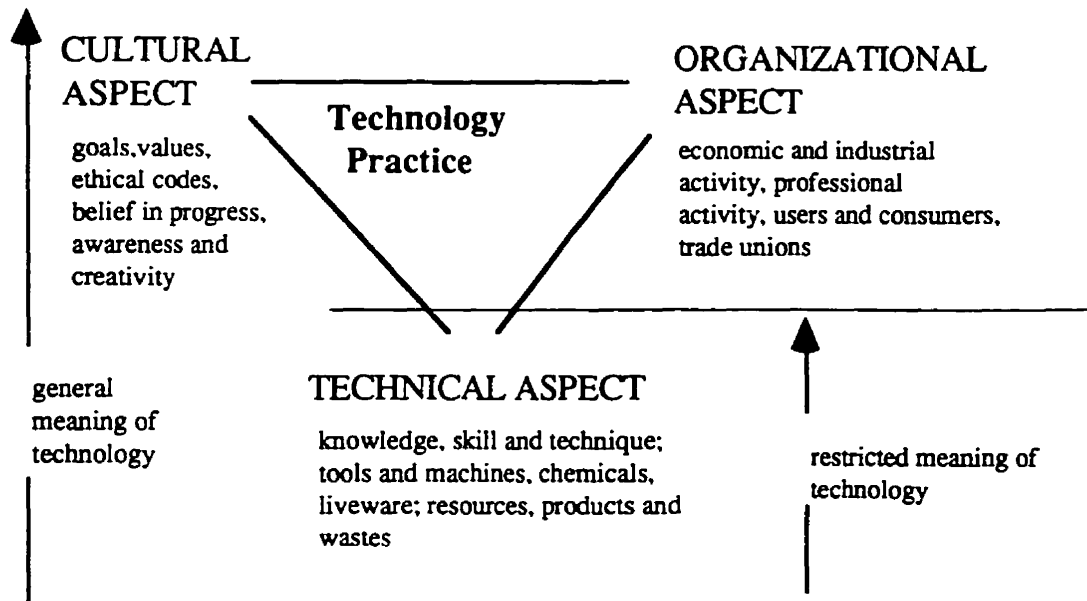
²⁰⁵ *The making of the English working class.* p. 584.

In the narratives of social historians, Luddites are often characterized as anti-technology rebels, in one account seen as carrying on the tradition Robin Hood, standing up to an oppressive despot.²⁰⁶ Neo-Ludditism has become the trope of anxiety toward technology which like language is seen as using us as much as we use it.

Arnold Pacey addresses the neo-Luddite distopic view of technologies by emphasizing the need to

appreciate technology as a human activity and as a part of life. We might then be able to see it not only as comprising machines, techniques and crisply precise knowledge, but also as involving characteristic patterns of organization and imprecise values.²⁰⁷

Pacey argues for a broadened perspective on the analysis of technology which he outlines as follows:²⁰⁸



²⁰⁶ Sale, K. (1995).

²⁰⁷ Pacey, A. (1991), p. 4.

²⁰⁸ *Ibid.* p. 6.

The social construction of technology (SCOT)

Scholarly discourse in what has been called the "social construction of technology" (SCOT) considers the broad spectrum of factors suggested by Pacey. Weibe Bijker, Thomas Hughes and Trevor Pinch in *The Social Construction of Technological Systems* point out that, while social construction has been applied to the hard sciences in the past in what they refer to as the "empirical programme of relativism," influenced greatly by Thomas Kuhn's *The Structure of Scientific Revolutions*,²⁰⁹ the sociology construction of technology (SCOT) is an embryonic field.²¹⁰

In an approach which responds to the convergent character of VR technologies, Bijker, Hughes and Pinch take a historical approach which aims to elaborate a multi-directional rather than a linear model of technological innovation. Using the example of the bicycle, Bijker et al. illustrate how a variety of designs coexisted, each competing for what, in modern parlance, is referred to as market share. In much the same way today, the world of micro-computers over the last few decades has been divided between users of UNIX, Novell, Amiga, Silicon Graphics, Apple, DOS, among other computers and operating systems, each company vying for market share and/or finding its market niche. Bijker et al. illustrate how the several distinct designs of bicycle which appeared in the 1870s and 1880s including the Penny

²⁰⁹ Kuhn (1970) explores the paradigmatic shifts occurring in scientific knowledge, Kuhn's notion of paradigm referring to the formal episteme of laws and formulae used in the sciences.

²¹⁰ Bijker, W. E., Hughes, T.P., Pinch, T. (1989), p. 28.

farthing, the Star, the Lawson's bicycle, the Club safety, the Kangaroo, the Geared Facile and the Xtraordinary can not be treated merely as improvements on a predecessor, or coexisting variations on an improvement in a linear model of innovation because the linear perspective does little to explain why some seemingly superior designs failed commercially while other arguably inferior designs succeeded.

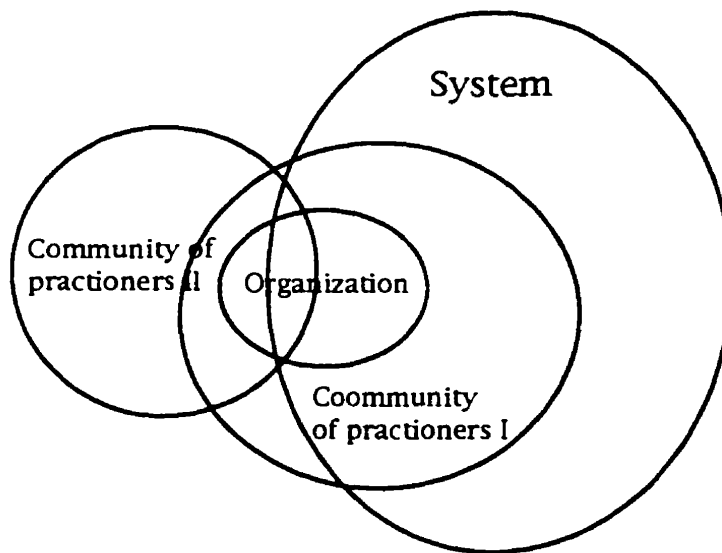
Rather than focusing on the artifact, Bijker et al. examine the social groups which can be associated with the artifact. These groups not only include consumers or users, but also other relevant groups, such as, in the case of the bicycle, "anticyclists." Women and elderly men, while perhaps not distinguishable groups relative to other technologies, are seen as distinct social groups in relation to the bicycle, playing a significant role in determining the ultimate shape of its design. Finding the Penny farthing (or high wheeler) to have a tendency to pitch forward, they opted in increasing numbers for models with front and back wheels of similar diameter. Thus, their influence is seen to have played an important role in the predominance of the "safety bicycle," the basic design which has persisted until the present day.

The question of the homogeneity or heterogeneity of relevant social groups is also an important factor. Another SCOT contributor, Edward W. Constant II, in an article on innovation in aircraft engine design suggests that

technological knowledge is expressed in well-winnowed traditions of practice that are the possession of well-defined communities of technological practitioners.... Consider individual

members of a community of practitioners as vectors for a specific replication code, carriers of a powerful set of programs that together constitute the relevant tradition of practice.²¹¹

Constant points out that carriers of community tradition (e.g. designers of aircraft with conventional propellers) can come into contact with members of other communities of practitioners (e.g. jet propulsion engineers) within the larger sphere of a given technological organization (an aircraft manufacturer) and within the larger sphere of technological system (the system of airlines, airports, aircraft manufacturers). (The result is a synthesis of traditions and, in this case, the turbo-prop is born.) Constant illustrates this interaction with the convergence of spheres in the following Venn diagram:



This formal representation helps to stress that individuals are members of communities, all manner of communities. The

²¹¹ Constant, E. *Ibid.*, pp. 224, 228.

traditions of knowledge or vectors of development that these communities maintain (or replicate to use Constant's metaphor and Dawkin's) are not immune to the influence of other communities. Constant's diagram is a simplification of the many communities that individuals participate in and from which individuals carry the germ of an idea or meme of a practice.

The phenomeno-logic of SCOT

An important area of consideration in SCOT is the discursive aspect of social construction and the concomitant need for a technological rhetoric. Hughes uses the term "reverse salients" to refer to perceived deterrents to technological innovation.²¹² The notion of "saliency" raises the phenomenologically sensitive point which is germane to the discussion of socially constructed virtual realities. Hughes suggests that stabilization of an artifact's design, or the solving of technological problems for certain social groups, also called technological closure, is as much a matter of perceived as physical reality. Bijker et al., thus, refine the notion of closure somewhat by proposing what they refer to as rhetorical closure.²¹³ Stabilization does not necessarily mark the end of problems. Sometimes, it merely marks the end of the perception of problems by relevant social groups.

In SCOT it is also noted that closure can occur through the redefinition of a problem. In this case there is a qualitative

²¹² Hughes, T. *Ibid.*, pp. 56, 66.

²¹³ Pinch, T. J. and Bijker, W. E. *Ibid.*, p. 44.

shift in consumer, or user priorities or values in relation to the artifact. Air bags, for example, are highly desirable in automobile's manufactured in 1994 and 1995. Before the introduction of the airbag, however, there is little evidence of a consumer outcry for their installation. Sometimes problems are both created and solved by the innovator. "Flat" or "square" picture tubes on televisions are enthusiastically offered by salespeople in electronics stores with little or no explanation of their benefit. High fidelity stereo systems and personal computers are "improved" at a staggering rate, often inviting the publication of related trade literature to keep the consumer abreast and appreciative of the benefits. Computer processing speeds are said to double every 18 months, inviting consumers to "get up to speed" with the latest technology. Manufacturers often do little to explain the practical benefit of such innovations. Print journalism and on-line discussion groups which monitor innovation then become important determinants to the acceptance or rejection of initiatives.

The suggestion that technological innovation has a discursive and a rhetorical dimension is worthy of our consideration when venturing into a landscape of socially constructed "virtual" objects. The emergence of "virtual communities" within which these discourses would take place and within which virtual objects would sustain any currency also has an important role to play in the study of technological innovation.

Contingency

Contingency, of course, plays a role in all technological development and makes prescriptive projects tenuous. In the example of the eventual design stabilization of the bicycle, the introduction of the air tire was an important contingency. Originally, introduced by Dunlop in response to problems of vibration, Bijker et al. suggest that the air tire was scorned for its undignified aesthetic by at least three relevant social groups: sport cyclists, messenger boys and factory ladies. However, when racing bicycles were mounted with air tires, it was discovered that they greatly outperformed their solid-rubber-tired counterparts. Perceptions of the cumbersome "sausage" tire soon changed.

By now a classic example of contingency in development is the story of the Apple computer. In 1977, a fledgling company founded by Steve Jobs and Steve Wozniak, two employees of eventual competitors Atari and Hewlett Packard, introduced the Apple II, a personal computer which Steven Levy calls "the most important computer in history."²¹⁴ The computer was not conceived and developed in the boardrooms and R & D laboratories of leading computer manufacturers. It was not the result of linear, or even "orthodox," (as in linear) technological development. It was the brainchild of an underestimated young man (Wozniak was refused a job in the then nascent personal computer division of Hewlett

²¹⁴ *Ibid.* p. 253.

Packard) and his visionary computer zealot friend. The first employees of the company, Randy Wigginton and Chris Espinosa (today a division head with Apple) were precocious high school student hackers.

The Apple II was introduced at the first California Computer Faire in San Francisco in late April 1977. Four units (the entire inventory) were on display in Apple's booth, running the game "Breakout" that Jobs had written for Atari. The injection molded plastic casings for the machine were only just completed before the show. This computer, the prototype assembled in Wozniak's garage out of parts acquired from major computer manufacturers in silicon valley, many of them at swap meetings of hackers who were employees of these firms, was clearly a product and an embodiment of the spirit of a technological counter culture. However, by late summer 1977, Apple was shipping a quarter of a million dollars worth of computers per month and became a billion dollar company within five years.²¹⁵

Similar success stories can be recounted of the unforeseen fortunes of Mitch Kapor, the author of Lotus 1,2,3 and one of the leading authorities on the Internet, and most notably of Bill Gates who wrote (or acquired and distributed) the DOS operating system, founded Microsoft and who currently holds the distinction of being the richest man in the U.S. However, what stands out in the example of Apple, aside from the sheer contingent nature in which elements came together, is that the consumer need which the Apple filled is as illusive as was the much-promised software

²¹⁵ Levy, S. (1984), p. 255.

applications that were to be delivered with the machine. More remarkable than the overnight success of the personal computer and its progenitors is the social construction of the digital needs of its would-be users. With a price rivaling that of a small automobile, the personal computer and its instant success points to an interesting observation about the human capacity to adopt and embrace technology: it is as much a matter of appreciation for and attraction to its *techne* (the art and expression of human beings) as to its *logos* (the systematicity and pervasiveness of which are sometimes interpreted as social control).

Interpretive flexibility

Another example of contingency in the history of the microcomputer illustrates the interpretive flexibility of technologies such as VR in the early, inventive, stages of development. Java, a supplementary language which allows the development of small applications or applets for short-term use on the Web, evolved through a contingent set of speculations with regard to the convergence of media in the emerging "virtual world." In 1990, an elite team at Sun Microsystems was given an R & D initiative which began as a foray into consumer electronics. Over, five years, it metamorphosed from a project to design a cross between a personal digital assistant and multi-purpose remote control device, to the development of a replacement programming language for C++ (an industry standard source code), to the design of set-top boxes for controlling interactive TV, to

helping 3DO, a videogame company, transform its dedicated game machine into an interactive TV device, finally ending up as a language to work in concert with HTML (hypertext markup language) offering the use of disposable applications (or applets) on the Web.²¹⁶ Hardly representing a prudently planned set of initiatives. The project's many transformations are more indicative of the volatility and contingency of the inventive phase of technological development.

Java in the early 90s, as one of its creators suggests, "was still a solution in search of a problem."²¹⁷ It was from the outset conceived to be an "operating environment."²¹⁸ As capitalist ventures go, a reversal of the expected technelogos. The genius of R & D people like James Gosling who wrote the programming language that Java is based upon was insufficient to fathom the social dimension that gives cyberspace its unpredictable shape. The various transformations the project went through were responses to failed contract bids and variegated consumer interest. The current incarnation of Java, for example, largely due to the contingency of Sun losing a bid with Time Warner Interactive TV to Silicon Graphics is the result of Sun turning its attention to the Internet where it had a long history and where the success of Marc Andreessen and Jim Clark with Netscape had created a promising niche for them on the Web.

The evolution of Java is a paradigm example of Edward Constant's example of converging discourse communities. In the

²¹⁶ "The Java Saga" In Wired Dec. 1995, Vol 3.12, p. 166.

²¹⁷ *Ibid.*

²¹⁸ *Ibid.* p. 238

early stages of development, the evolving form of Java responded contingently to a wide variety of communities both lay and expert. In the early phase when this technology was as much discourse as matter, it could be open to this sort of interpretive flexibility.

One difficulty with exploring the implications of an emergent convergence of technologies of virtuality, whose potential pervasiveness and impact on the coming century can be compared to the introduction of electricity a century ago, is that, like electricity, it is difficult to identify precisely which connected technologies will play the greatest role and which players will have the greatest stake. Hughes's notion of the evolution of large technological systems provides certain insights in such a case. Hughes suggests the phases: invention, development, innovation, transfer, growth, competition and consolidation in the evolution of any large technological system.²¹⁹ There is a clear distinction to be made between the radical quality of invention during the "inventive" phase of development and the "growth" phase. The example of Java illustrates how creativity is welcomed and instability tolerated in the "inventive" phase of development in which a technology is more open to interpretive flexibility.²²⁰ However, interpretive flexibility diminishes in the growth phase once a great deal of investment has gone into a given developmental trajectory. Technologies can be seen as becoming more "conservative," once stakeholders perceive themselves as having something invested to conserve.

²¹⁹ Hughes, T. In Bijker et al. (1989). p. 56.

²²⁰ *Ibid.* p. 27.

Having a sense of where we are in the diffusion of the large technological system called "virtual reality" would certainly ease the fiscal and fiduciary woes of relevant corporate decision makers. However, contrary to popular neo-Luddite characterizations, those with the most invested do not always have control over the discursive trajectory of the technological future. Corporate mergers, policy negotiations, public stock offerings and the contingency of innovation make the prediction of technological closure a complex if futile exercise.

Chapter 3

History 0 and 1

In her most recent offering on the effects of computers and the human spirit, Sherry Turkle (1995) notes that in the past twenty years the prevailing meme of computer technology has shifted radically from a view of the computer as a calculator to one of the computer as a device for simulation. And in turn she suggests that "we are moving from a modernist culture of calculation toward a postmodernist culture of simulation."²²¹ The task at hand then is how do we come to terms with this meme of simulation, or virtuality.

Another scholar who has closely monitored the effects of digital technology and attempted to anticipate the future favoured by current conceptions of CMC is William Mitchell. Unlike many of his contemporaries, Mitchell (1995) does not conceive of virtuality as a separate entity, but as one into which we and our current modes are integrated. He ponders, for example, the architecture of the imminent urban landscape in which "the digital, electronic, virtual side is increasingly taking over from the physical."²²²

Again the difficult task at hand is to consider in Pacey's terms: the technical, organizational and cultural aspects of imminent developments of technologies of virtuality.

²²¹ Turkle, S. (1995), p. 20.

²²² Mitchell, W. (1995), p. 49.

The convergence of discourse and machine

"Virtual reality" as it jogs the popular imagination most often invokes images of head mounted displays and is associated with vivid visual arrays and augmented multi-sensory inputs. Early incarnations of this model of VR are usually traced back to 1955 and Morton Heilig's Sensorama (Rheingold, 1991; Biocca & Levy 1995) a multi-sensory conception of cinema:

Man's nervous system—sensory nerves, brain, and motor nerves—is the seat of his consciousness... In time all of the above elements will be recorded, mixed, and projected electronically—a reel of the cinema of the future being a roll of magnetic tape with a track for each sense material. (Heilig, 1995)²²³

Heilig, a filmmaking student in Rome, had read of experiments by Fred Waller in the early 1950s with Cinerama, a multi projection cinema which attempted to duplicate the human visual field of 155 by 185 degrees.²²⁴

Ivan Sutherland in 1965 took another approach to simulating the human visual array. By devising the head mounted display (HMD), he not only was able to fill the entire visual field, but with computer codes which created perspective illusions through stereoscopic images, he was able to, as Biocca and Levy note, take Alberti's experiments with perspective to their next logical step.²²⁵ Sutherland may also owe something to the cubists. More important to Sutherland than the achievement of the singular

²²³ Quoted in Biocca, F. & Levy, M. (1995), p. 11.

²²⁴ Rheingold, (1991), p. 54.

²²⁵ Biocca, F. & Levy, M. (1995), p. 66.

perspective that Alberti sought was the objective that the visual object be seen from the multiple perspectives that could be achieved by moving one's head.²²⁶ The HMD coupled with head tracking input devices²²⁷ achieves this end, in effect immersing its wearer in a 360 degree the visual array. Sutherland's other contribution to the early development of VR was a graphical design program called Sketchpad.²²⁸ Sketchpad which enabled the user to converse rapidly through the medium of line drawings made it possible for the computer to be conceived of as an interactive simulator.²²⁹

Myron Kreuger took yet another approach to immersion which made immersive cinema interactive. Between 1972 and 1975 he experimented with a method for creating interactive spaces which he called Videoplace. Kreuger married the chroma-key image (best known from the television weather forecast) with tracking devices sensitive to a user's position within a pre-defined visual space. Thus, the user's entire body was immersed within the visual field and had freedom of movement within it.

State of the art

Both of these competing visions of immersive technology have persisted until the present day. Krueger's Videoplace model

²²⁶ Sutherland, I. (1968).

²²⁷ Such input devices more common than one might think. The computer mouse is one such device. Electronic guns (Mattel), rackets (Autodesk), and wands (Lincoln Labs) are common enough consumer items. (See Biocca and Delaney, In Biocca, F. & Levy, M. (1995), p.109).

²²⁸ See Rheingold, H. (1991), p. 85; Laurel, B. (1993), p.185.

thrives in a system called Mandala™ produced and distributed by the Vividgroup in Toronto. The state of the art in Kreuger's model, however, is perhaps best illustrated by technologies of flight simulation.

While the first flight simulators which appeared in World War II, patented in 1929 by Link,²³⁰ consisted of amputated replicas of propeller-driven fighter planes equipped to pitch, roll, yaw and turn when the training pilot turned the controls, they had about as much verisimilitude as the mechanical bulls used by rodeo cowboys. Today's simulators which use multiple projections of the sort Morton Heilig envisioned attempt to immerse the training pilot in a Videoplace-like space which is a physical replica of an the actual aircraft cockpit. CAE,²³¹ one of the world's largest producers of simulators for both military and commercial jets also programs simulations of airports from around the world using aerial photography and airport blueprints.²³² CAE is also part of an ongoing project to produce simulations of all the airports around the globe by extension simulating the surface of the planet.

Flight simulation is an effort to train the entire CNS of the pilot in a variety of conditions (e.g. daytime, night, fog, snow) to make pilots familiar with flying before they fly expensive

²³⁰ Rheingold (1991). p. 203.

²³¹ Founded in 1948, CAE stood for Canadian Aviation Electronics. Today, a multinational, the company's acronym stands for itself. CAE produces land and air and underwater simulators for commercial as well as military clients. (Indeed, CAE-Link Bicoastal was sued by the pentagon for \$55.5 million for overcharging for flight simulators).

²³² All information on CAE is first-hand, based on a guided tour of the Montreal facilities by Robert Kwak of CAE's visual group.

equipment in life-threatening situations.²³³ Therefore, a premium is placed on attention to detail. Data are entered into a given airport's simulation to reflect the smallest detail, even the roughness of its runway's tarmac. In final preparation to land at Lisbon's simulated airport, for example, the pilot must avoid being distracted by the cars and trucks moving on the highway at the foot of the runway, a feature of which the simulation's programmers are particularly proud.

While Kreuger's whole-body immersion model thrives in examples such as flight simulation, head mounted displays, as *VRWorld* suggests, have become mass market,²³⁴ illustrated by manufacturers in the videogame industry trying to simulate the look of a head-mounted display (e.g. *Virtualboy* by Nintendo™). In 1996, the state of the art in the HMD VR experience is arguably an art installation called *Osmose* exhibited at the Musée d'art contemporain de Montréal. The exhibit is a 20 minute journey through a world constructed by virtual reality artist Char Davies. The virtual traveler wears a head mounted display with head tracking capabilities and a chest harness to give one virtual mobility²³⁵: Leaning forward and backward, one moves forward and backward in the virtual space; by inhaling, one ascends,

²³³ Actually, at this stage, expense is perhaps a secondary consideration. The price of simulators can often rival the cost of the real thing. The product I tested was valued at \$28 million.

²³⁴ See cover article *VRWORLD* May/June 1995.

²³⁵ The harness is an interesting though perhaps serendipitous postmodern metaphor. Only through being harnessed is one mobile in this VR. Likewise, a another VR installation in Montreal, *Images du futur*, most of the installations used motion detectors to achieve interactivity. It is a curious twist of critical reasoning that only through surveillance do we gain the interactive empowerment.

exhaling, and by exhaling one descends. Once the journey begins the participant sees what resembles a human cerebellum suspended in space. Moving in and entering into it, a number of different worlds can be visited, a forest, a lake, a chasm beneath the lake, the microscopic world of spermatozoa, the wintry text world above or the dark gloomy text of the nether world. The space within *Osmose* is convincing enough that one can begin to imagine the collapse of perceptual space that this technology potentially engenders. Davies likens this convergence of virtual and physical space to a similar phenomenon presaged in Bachelard's *Poetics of space*: "...c'est par leur immensité que les deux espaces: l'espace de l'intimité et l'espace du monde deviennent consonants. Quand s'approfondit la grande solitude de l'homme, les deux immensités se touchent, se confondent."²³⁶ Davies, thus sees *Osmose* as an attempt to heal the alienation between our physical and spiritual selves.²³⁷

Peering behind the looking glass of *Osmose* one gets a glimpse of the convergence of technological communities of which Constant speaks. Davies is a partner, with Daniel Langlois, and co-founder of Softimage, a builder of 3D animation software popular among filmmakers and special effects designers (e.g. Softimage software has been used in countless television commercials and, most notably, in the making of effects for Jurassic Park).²³⁸

²³⁶ Bachelard, G. (1969). *The Poetics of space*. Beacon Press. Quoted in Sandra Grant Marchand, Musée d'art contemporain, Serie Projet 18, p. 1.

²³⁷ *Ibid.* p. 2

²³⁸ Unlike many of her "art world" contemporaries, Davies has the resources of a leading 3D animation company at her disposal. As a result she is able to

Fiction and physics

As in the inventive phase of many technologies the developmental trajectory of VR is as yet unclear, highly susceptible to contingent development and interpretive flexibility. Thus, focusing too narrowly on these two rival versions of VR may draw attention away from the a wide variety of other influences which have lent their memes and metaphors to the spirit of virtuality, many of which are perhaps appropriately not material but discursive, that is, themselves virtual.

While experiments in VR certainly date back to the 1950s, 1960s and 1970s, "virtual reality" did not enter the popular imagination until the late 1980s, the popularization of the term no doubt aided by Steward Brand's description of experiments at MIT's media lab.²³⁹

At MIT, the cross-pollination of ideas among concentric cultural spheres which Constant suggests becomes evident. For example, Brand describes the work carried out in MIT's Vivarium which was overseen by Apple fellow Alan Kay. Kay at Xerox PARC (1971-81) and Atari (1981-84) worked closely with Nicholas

create such a high resolution environment that one feels the escape of being immersed in a three dimensional film. But donning the HMD in preparation to enter *Osmose*, one recognizes the familiar three-dimensional grid lines of Softimage's animation interface. As one reflects on this first encounter, what was conspicuously missing was the artist's tool palette that the computer animator has at her disposal. While, one cannot deny the benefit of having 100s even 1000s of hours of artist's renderings to move through, it is interesting to consider the implications of having access to the same space with the ability to create one's own objects, one's own world.

²³⁹ Brand, S. (1987).

Negroponte at the Architecture Machine Group of MIT. Negroponte was best man at Kay's 1983 wedding with screenwriter Bonnie MacBird. MacBird based *Tron* on her husband-to-be's work. Disney's *Tron* (1982), written by MacBird and Steven Lisberger, is considered to be a landmark film for its innovative use of computer animation. The making of this film is also important because it represents a channel through which different discourse communities could intersect and the meme of virtuality could spread.²⁴⁰ The film, which embraced a digital Alice-in-Wonderland metaphor of entering into the world behind the computer screen, did not receive much attention in academic circles when it was released. However, it gained something of cult following in subsequent years as it can be said to have anticipated a zeitgeist²⁴¹ of pervasiveness computers and computer-simulated realities. These influences can be said to be both tacit and explicit. Sherry Turkle (1984) notes that after viewing the film, her colleague cognitive scientist Marvin Minsky found in *Tron* a much better model than "bits" for describing the goings on inside a computer.²⁴²

The convergence of fiction and physics is, indeed, an accepted part of the folk history of virtuality. Most chronicles of cyberspace pay homage to the seminal influences of William

²⁴⁰ See Hardison, O. B. (1989), p. 224.

²⁴¹ A later example of such a zeitgeist can be found in an article entitled *Cyberpunk* in *Time* (Mar. 1, 1993). This may someday be seen as a key marker of the widespread adoption of cyberspace in the popular imagination, coupled with the launching, in February 1993, of *Wired* magazine, which states as its mandate the chronicling of the imminent communications revolution. This publication events may be seen as paving the road, or at least the on-ramp, for the Internet and virtual reality to become commonplace preoccupations.

²⁴² Turkle, S. (1984), p. 276-277.

Gibson's cyberpunk trilogy and his coining of the term cyberspace. Gibson's vision of networked CMCs anticipated a pervasive virtual reality. Neal Stephenson's science fiction offerings may also be seen as playing a similar historical role. In his novel *Snowcrash*, Stephenson's cyberspace, which he calls "the metaverse," takes on a more mimetic character than Gibson's. It is depicted as a parallel alter-reality of vivid graphic CMCs, a cyberspace of streets, public transit, and privately owned buildings, into which "real world" citizens can enter as easily as slipping into a telephone booth today.

Stephenson's characterization of the users' virtual presence (avatars) in the metaverse are intended to underscore concerns about identity and representation which Stephenson sees as complicated by socioeconomics and technical acumen of cyberspace pioneers. Thus he describes the metaverse *hoi polloi* as displaying varied degrees of self-representation:

The couples coming off the monorail can't afford to have custom avatars made and don't know how to write their own. They have to buy off-the-shelf avatars. One of the girls has a pretty nice one. It would be considered quite the fashion statement among the K-Tel set. Looks like she bought the Avatar Construction Set™... The other girl is a Brandy. Her date is a Clint. Brandy and Clint are both popular off-the-shelf models. When white-trash high school girls are going out on a date in the metaverse they invariably go down to the computer games section of the local Wal-Mart and buy a copy of Brandy. The user can select three breast sizes: improbable, impossible and ludicrous. Brandy has a limited repertoire of facial expressions: cute and pouty; cute and sultry; perky and interested; smiling and receptive; cute

and spacy... Clint is just the male counterpart of Brandy.²⁴³

Obviously Stephenson has his tongue planted firmly in his cheek in his prediction of how issues of identity will play themselves out in cyberspace. However, his fiction rehearses some of the very concerns which are being discussed in relation to identity in MUDs and Internet Relay Chat (IRC), textual fantasy worlds which have become a laboratory for issues of identity and self-representation.²⁴⁴ The influence of Stephenson's graphical metaverse on MUDs and MOOs can be seen in recently emerging sites on the Web called metaworlds, or "avatar-based on-line shared virtual environment[s]". Metaworlds, such as WorldsAway, the Palace and Alphaworld are described as "part chat room, part adventure game, part puppet show, part simulation."²⁴⁵

Issues of non-accountability would appear on the surface to be the legacy of cyberpunk fiction and counterculture influences. However, the decentralized and non-accountable character of on-line CMCs may owe as much to the Internet's conservative influences as to the West-coast counterculture.

²⁴³ Stephenson, N. (1992), p. 37.

²⁴⁴ To be discussed further in chapter 6.

²⁴⁵ "Metaworlds" *Wired*. 4.06. June 1996, p. 143. See e.g. Alphaworld at URL: <http://www.worlds.net/products/alphaworld/index.html>

Connectivity

The current umbilicus of computer mediated communications, the Internet plays a role in the chronicle of convergence of VR inasmuch as it represents the most obvious means through which virtuality can be interpersonal. Launched in 1969 by the Advanced Research Projects Agency (ARPA) of the U.S. Department of Defense, the early Internet was "conservative by design," a communications network designed to remain functional in a nuclear war. Paul Baran is credited with having conceived of the Internet in 1964 while employed for the RAND corporation.²⁴⁶ It was conceived of as a network of networks, a hairnet like structure through which communications would remain possible were one part of the network destroyed. This objective as much as any other contributed to the Internet's decentralized character.

Between 1972 and 1974 Vinton Cerf developed the concept of Transmission Control Protocol/Internet Protocol (TCP/IP), the language which Internet computers speak (and inversely, the language which effectively defines whether or not a networked computer is "on" the Internet). Cerf also conceived the packet/bundle model for file transfers.²⁴⁷ The concept, based on a

²⁴⁶ Sterling, B. Short history of the Internet.

²⁴⁷ Baran and Cerf have remained active in the development of network technology. Cerf in 1992 founded and today is the president of The Internet Society, an organization which monitors the development of the world-wide networked communications. Baran today has two companies: Com21, Inc., a company which develops telecommunications technology to deliver digital data at multiple megabits speeds at low cost to homes and businesses using existing cable television, fiber optic and copper wire media. and Metricom, Inc., which manufactures, and markets wireless data communication networks. Metricom supports a technology called the Ricochet Wireless Modem. These modems are placed upon poles (e.g. street lamps) and offer Point-to-Point

postal service analogy and sketched out on a restaurant paper napkin, held that information could be sent in packets and bundles so that line interference would disrupt only a small portion of a correspondence which could be re-transmitted while the rest of the correspondence remained intact.²⁴⁸ Again, because of the decentralized nature of the original design, "each packet would wind its way through the network on an individual basis."²⁴⁹

In 1968, The National Physics Laboratory in Great Britain set up the first test Network. In the fall of 1969 the first node of what would come to be called the Internet was installed at UCLA. By December there were now four such nodes in what was called ARPANET. ARPANET grew exponentially until ARPA divested itself of the Internet in the mid 1980s and various other concerns took it over. However, the decentralized nature of the military's original concept remained. In addition to claiming its physical apparatus, certain groups have claimed its decentralized character as part of their political ideology, the most strongly stated case being stated in the Cyberpunk manifesto: "Information wants to be free."²⁵⁰

Of course, multi-national concerns will equally have their say in how the Internet develops. Raymond Smith, Chief Executive Office of Bell Atlantic Corp.²⁵¹, would seem to be an important

protocol (PPP) which allows it to directly carry TCP/IP, AppleTalk, IPX or other popular networking protocols.

²⁴⁸ See Understanding the Internet.

²⁴⁹ Sterling, B. "A Brief History of the Internet."

²⁵⁰ See e.g. Cyberpunk (1990) INTERCON (VHS).

²⁵¹ The inclusion of the following comments by Raymond Smith is a perfect illustration of the above. Bell Atlantic has since divested itself of these projects.

figure in this anticipated convergence. According to Smith, market research suggests that there are four basic requirements attributed to consumers which guide the telco's packaging of information. Information must be 1) entertaining 2) interactive 3) transactional and 4) communicative.²⁵² Smith's vision of the future of the Bell Atlantic makes it seem more like a deliverer of television than telephony. He sees himself as building "the great information engine of the 21st century, in which the concept of a channel will be archaic. Networks will become invisible delivery systems and individuals will be able to navigate at will. Space will be further broken down and the final nail will be driven into the coffin of the concept of "mass audience." ²⁵³ Smith predicts the death of television, as we know it, by the year 2002.²⁵⁴

Smith's replacement for TV is called "virtual creation," the delivery of diverse programming from diverse parts to Bell Atlantic's 200 million dollar "digital factory" in Reston Virginia.²⁵⁵ The telco's emphasis is on interactivity, using what Smith calls "virtual VCR," the service being a video-dialtone platform that enables viewers to access pay per view material (films, sporting events, educational programming and home shopping) and to have all the interactive features of a VCR, the ability to fast forward, to review, to edit. On one hand, there is concern that the telcos, which have traditionally maintained a monopoly over telephony, would dominate in the new convergence of

²⁵² Smith, R. (1994). Paraphrased from interview on Charlie Rose, WNET, Dec. 14, 1994, 1:30 pm.

²⁵³ *Ibid.*

²⁵⁴ *Ibid.*

²⁵⁵ "Align and conquer," *Wired* 3.02, Feb. 1995, p. 110.

telephony and television. It is projected that the video-dialtone platform will absorb 50 percent of current home video market share by the year 2000.²⁵⁶ However, Smith's vision seems to take into account the potential unpopularity of this sort of centralization. Thus, the video dialtone platform will open with 50 percent of its bandwidth to unaffiliated programmers effectively responding to what can be seen as trend toward and popularity of decentralization on the Internet.

Smith also has a vision of the telephone company as playing a greater role in education than it has in the past. Smith would like to see a computer in every home, replacing the television. Contingency is a factor in this potential trajectory, as Smith has a dyslexic son who was greatly aided in his studies by the acquisition of a personal computer. Through his son, Smith is connected to a small discourse community which includes Nicholas Negroponte, who is himself dislexic.²⁵⁷ It is equally through such contingent community connections that Smith's vision might be catalyzed.

Andy Grove, co-founder and CEO of Intel, the world's largest microchip manufacturer, has much in common with Smith. However, Grove belongs to a different set of discourse communities and thus has a slightly different vision of the future of media.²⁵⁸ Grove sees no convergence of television and computers. Instead he sees the computer completely replacing the television. "If people

²⁵⁶ *Ibid.* p. 115.

²⁵⁷ Negroponte, N. (1995).

²⁵⁸ "Godfather of microchip insists future lies in computers, not TVs" *Ottawa Citizen*. Tues, July 12, 1994.

wanted video on demand," argues Grove, "cassettes would be delivered like pizzas."²⁵⁹ He stresses that the content registered in storage media such as audio tape and the talking book represents only a fraction of the content generated on the telephone network. Thus, he feels that the future lies in dealing with information in real time. Intel has heavily invested in a project called Pro-Share, a hardware and software effort that enables a home computer to operate as a video-telephone. Grove further argues that innovations will see the desktop computer not only "eat" the television but take a serious chunk out of the transport industry as well: "Teleconferencing--in which you can share data, images and speech--will make the concept of business travel redundant."²⁶⁰

The differing visions of the future of the Internet might be seen as a cautionary matter for venture capitalists. However,

²⁵⁹ *Ibid.*

²⁶⁰ *Ibid.* Grove's prediction of a computer boom is not inconsistent with Smith's vision, nor with the statistics of the Semiconductor Industry Association. World-wide sales of 16 and 32 bit microprocessors doubled in 1994 and 1995. 1994 saw the sale of \$10.7 billion worth, a \$28.6 billion gain over \$8.3 billion worth in 1993. 1993 sales were a 59.1 percent increase over 1992 sales of \$5.2 billion. Growth in the micro processor industry corresponds to, and may well be the result of, growth in the Internet. The Internet Society, which charts various aspects of growth on the Internet, identifies a 102% growth in 1995 in the number of host computers attached to the Internet. 1994 saw an 81% growth. The projection for the year 2000 is 600% growth in the number of hosts, mainframe computers which offer connectivity to personal computers. In the two years between November 1992 and November 1993, the traffic of messages transmitted over the Internet increased by more than 400% from 279 million messages per month to 1 billion, seven million, five hundred and ninety messages per month. The phenomenon of growth on the Internet has clearly become a world-wide phenomenon as indicated by the total number of networks connected to the Internet. While the U.S. will generally account for more than 50% of the connected networks in any given month, until the 1990s, the number of U.S. networks generally doubled the number in the rest of the world. As Internet Society statistics show, the Internet was predominantly an American communications facility. (See Internet Society Statistics [in bibliography] for detailed growth rates since 1981)

there are others who stand to find opportunity in this uncertainty, as well as with new developments on the Internet such as the Web.

In this regard, the openness and decentralized design of the Internet has had certainly a decentralizing or democratizing effect on electronic publishing. The *International Teletimes*, for example, is an electronic publication which exists only in cyberspace. Its copy editor lives in Japan. Its head writer lives in Austria. And, it is published out of suburban Vancouver by 17 year old, Ian Voidavick. Another beneficiary of the Web is Justin Hall, a 19 year old reporter for Hot Wired (Wired magazine's electronic edition). Hall spends 10 hours a day updating his personal Home Page called *Justin's Links from the Underground*,²⁶¹ one of hundreds of thousands of personal home pages on the Web. As future millions of young independent publishers begin to make their mark, their collective vision of the character and future of CMCs may prove to hold more stock than that of industry zealots. On one hand, the attraction of the Web seems to be the vast array and quantity of information it puts at ones finger tips, the sense of being up-to-date and infinitely connected.²⁶² Justin Hall's experience of electronic publishing in

²⁶¹ *Justin's Links from the Underground*. URL: <http://raptor.swarthmore.edu/jahall/>

²⁶² There seems to be the potential for bi-directional line of informational access with the Web's search and browse functions which are analogous to the skimming and scanning techniques of print literacy. There is at least the promise that the need to be informed can be assuaged. Hot Wired, the first on-line publication to be funded by advertisers has introduced a new mode of publicity. Rather than the thirty seconds that television advertisers generally have to try to create a mood, or the single glossy page available to magazine advertisers, html (hypertext markup languages) used on the Web offer

addition to manifesting a thirst for information, however, sounds a call for community which resonates with the similar vocation of Howard Rheingold (1993) in *The Virtual Community*.

For Hall and Rheingold, the Internet allows their "real life" persona to acquire a degree of notoriety, but for many, the attraction of the virtual society of cyberspace is the possibility of anonymity. As a well-known cartoon in *The New Yorker* observes "On the Internet no one knows you are a dog." Internet pioneer and founder of AlterNet a Virginia Internet service provider, Rick Adams sees this cartoon as the defining moment of the popularization of the Internet. Seventeen year old electronic publisher, Ian Voidavick feels that "this says it all...you are judged by who you are not by your appearance."²⁶³

The introduction of Java promises to contribute even more to the social leveling capacity of the Internet. Java, being hailed as the "the fourth wave of computing,"²⁶⁴ lets developers create small single-use (i.e. disposable) programs, called applets which users down-load from the Internet. Some developers believe that Java will, in effect, make the Internet the next pervasive computer operating system.²⁶⁵ In addition, the Virtual Reality Model Language (VRML) promises to transform the interface of the Web from an up and down scrolling medium to a three dimensional graphical simulation of physical space. The full exploitation of

hyperlink connections to allow the would-be consumer virtually endless amounts of information on any given product.

²⁶³ *Ibid.*

²⁶⁴ Cowpland, M. (1996) CEO of Corel in his keynote address at Comdex Canada, quoted in "Waiting on Java" *The Gazette*, Montreal, July 17,, E4.

²⁶⁵ *Ibid.*

VRML awaits advancements in processing speed. However, VRML's imminence bodes well for the convergence of CMCs with the innovations in digital graphics which are being developed in the Hollywood film industry.

Rationalist Hollywood

Computers initially found their way into the world of film through animation. In the early sixties, the computer was found to be an excellent tool for this highly repetitive art. Lillian Schwartz, John Whitney and Peter Foldes are among the pioneers of the 60s and 70s experiments which were often limited by the need for large institutional sponsorships such as Bell Laboratories and IBM.²⁶⁶ Much early computer animation tended to be ostensibly abstract, or at best figurative. Schwartz won critical acclaim for his computerized motion graphics work on Stanley Kubrick's *2001* (1968). However, it wasn't until *Tron* (1982) that the full potential of computers for replacing physical props and sets was realized.

Since *Tron*, computers have become a commonplace tool for doing "special" and not so special effects in film and TV post production. What began as a marginal industry has begun to loom ominously. Compositing, once an optical technique used to superimpose backgrounds, now allows the *digital* marriage of any foreground and background imaginable. Compositing makes possible spectacular effects such as a Harrier jet with an actor on top of

²⁶⁶ See Russett, R. and Starr, C. (1986).

it which appears to hover before a city backdrop, in the film *True Lies* (1994). (The city backdrop is composited in post production; the jet is filmed in a studio before a green screen, allowing actors to climb on top of it, a stunt that would be prohibitively dangerous in the "real" world.)²⁶⁷ But such spectacular examples are greatly outnumbered by the many thousands of examples of compositing in thirty second television commercials. These examples can be as invisible as compositing a new logo onto a product package.

Morphing, is another technique made popular by *True Lies* director Jim Cameron in films such as *Terminator II* and *The Abyss*. In morphing, a wire frame, or data set, of an object is created. Artists can then animate the shape of the object by pulling at certain points of intersection of the wire frame and assigning an algorithm instructing the computer to render intermediate stages between the original and deformed shape.

The creation of data sets (wire frames) has become a lucrative business itself in the world of advertising. Data sets have been created of almost every imaginable consumer item by companies such as Viewpoint who will also custom design data sets for manufacturers or their advertising agencies. On one hand, the project of creating data sets as stand-ins for objects in the material world is the ultimate exercise in mimesis. By extension one can see the rationalist conception of physical reality being reduced to sets of co-ordinates within a computer.

²⁶⁷ "True Lies and the realm of digital compositing." An interview with John Bruno, digital effects supervisor for *True Lies* and *The Abyss*. In *Logik 2*, 1995.

The "promise" of such an initiative is certainly not a recent invention. Oliver Wendell Holmes Sr., for example, anticipated the duplication of the entire physical world, presaging the most far flung conceptions of virtual reality by almost 150 years. In 1857 Holmes, after seeing images in a stereoscope for the first time, prophesied the creation of a universal database containing essential copies of all things akin to Ted Nelson's hypermedia Xanadu.²⁶⁸ With references to 19th century technologies removed, Holmes prophesy could as easily apply to the contemporary initiatives to construct commercial data sets:

Form is henceforth divorced from matter. In fact, matter is a visible object of no great use any longer, except as a mold on which form is shaped... Matter will always be fixed and dear: form is cheap and transportable... The time will come when a man who wishes to see any object, natural or artificial, will go to the stereographic library and call for its skin of form... We do now distinctly propose the creation of a comprehensive and systematic stereographic library, where all men can find the special forms they particularly desire to see as artists, or as scholars, or as mechanics, or in any other capacity.... This is a mere hint of what is coming before long. ²⁶⁹

Holmes may have been more prophetic than he knew. Much of the work with digital data sets goes beyond simple mimesis, however, and poses a challenge to the assumption of a faithful rendering of the rational "real world" which Holmes wished to duplicate. Morphing takes the use of data sets beyond simple mimesis, as does Softimage's Channels™ an animation tool with which the points of

²⁶⁸ Biocca, F. and Levy, M. (1995) p. 9

²⁶⁹ Holmes, 1959, pp 251-253. Quoted in Biocca, F. and Levy, M. (1995) p. 9.

intersection in a wire frame can be animated by a puppet or human being in physical space. In a Shell Oil commercial, for example, points in the data set of a Dodge Viper correspond to sensors on a dancer's body. The dancer's movements are mapped onto the wire frame. The result is a television commercial in which a photographically faithful automobile appears to stand up and dance. These examples of hyper-mimesis seem to raise questions about the relevance of the laws of physics to laws which will govern the way things are done in the representational world of virtual reality.

Just as Hollywood's faith in data sets makes the virtual replication of the physical world loom large, the ability of data sets to stand in for humans is also imminent. As a result, the death knell for the author being sounded in academic circles is echoed by an equally pessimistic prognosis for the screen actor.

Actor Tom Cruise, for example, is ill at ease with developments in digital post production in Hollywood films such as those outlined above. He feels threatened by the recent development of what might be called "virtual talent" or "synthespians."²⁷⁰ In recent years, with the increased use of computers in film post-production, actors are being scanned into computers to provide the template for a wire frame data set which is their likeness. The process, which began with fanciful attempts to resurrect Humphrey Bogart and Marilyn Monroe, has become a staple of Hollywood action films. An increasing number of actors (e.g. Arnold Schwarzenegger, Jim Carrey and Denzel

²⁷⁰ "Silicon Stars" *Wired*. 3.12, Dec. 1995, p. 142

Washington) have had their faces and bodies laser scanned to provide coordinates for a data set to create a synthetic version of the actor. These "synthespians" are then available for morphing, or for the shooting of particularly dangerous or repetitive scenes.²⁷¹

Tom Cruise's concern over this recent development is that the legal system does not as yet know how to protect actors' rights with regard to their "virtual" selves.²⁷² As great a concern as the legal rights of the individual for possession of his or her "virtual" identity, however, is the theoretical ramification of duplicating subjectivity with rationalist tools.

Hyper-environments

Developments in digital film technology can be seen as contributing to the visual array aspect of VR, the vividness dimension in Steuer's evaluation of experiences of presence. For advancements in technologies which correspond to the interactivity dimension, the development of hypermedia and the videogame are more promising sites in a VR convergence chronicle.

The term hypertext was discussed in the last chapter as the capacity of certain software to transport the reader rapidly from any point in a computer text to any other point in the same or other text. Hypertext has been described as a convergence of technology and critical theory by George Landow (1991),

²⁷¹ *Ibid.* p. 202

²⁷² See "Why Marilyn and Bogie still need a lawyer" *New York Times*, March 11, 1994, B18

representing the disruption of the linear *logos* of the readerly narrative, making every reading a unique experience and blurring the usual categories of author, reader and text. Hypertext, however, also represents the convergence of media delivery systems integrating text, image and sound. Thus this medium, also referred to as hypermedia, represents a key advancement in interactivity, the capacity of the computer to allow its user to interact with the simulated environment.

Hypertext found its first general application in the Apple Macintosh program, HyperCard, created by Bill Atkinson. HyperCard is a software package which allows users to make stacks of virtual cards, the essential difference between a file card and a virtual card being that with the latter, a user can move instantly from one card to any other in a stack by means of associative reference points encoded into each card. The file card is merely a metaphor, of course, in the same way that the Macintosh computer's operating system uses a desktop metaphor with icons for objects such as files and folders and a trash can for discarding unwanted files.²⁷³

Such object orientation was central to HyperCard's design. Echoing Theodore Nelson's allusion to tinker toys, Atkinson likens HyperCard to an erector set:

When you buy an erector set... it has a brochure of things that were built.. you start by building [these things] as in the pictures. Then you customize a little bit.²⁷⁴

²⁷³ Vannevar Bush in the used a similar desk metaphor in the description of "Memex."

²⁷⁴ Atkinson, B. (1988).

Thus, the basic card metaphor is amenable to other interpretations. For example, the Metropolitan Museum of Modern Art's collection has been catalogued on HyperCard so that each image (or card) is stored on disk and various details within an image can be stored (as additional cards). This gives a browser a variety of reference points (e.g. painting, artist, detail) with which to form a mnemonic association and later recall a painting. In another example of a common application, Egyptologist Lynn Holden at the Carnegie Mellon Institute has developed a multi-media journey through Egyptian Temples. In Holden's virtual Egypt, hypertext explorers can move through an electronic space, accessing information on elements in the visual field by clicking their mouse on an item of curiosity, anything from an explanation of the head of Horus to a phonetic transcription and interpretation of a hieroglyph.

Many adventure games have evolved from text-based hypertext experiments such as the game *Zork*²⁷⁵ in the early 1980s to hypermedia varieties incorporating images and sounds. One of the most popular examples is the CD-ROM game *Myst* created in 1994 by brothers Robyn and Rand Miller. *Myst* which weaves 2,500 rendered images with 40 minutes of music into a hypertext labyrinth of visual and musical puzzles has been hailed by one New York Times columnist as representing a potential new art form.²⁷⁶

Correspondingly, hypermedia has enjoyed some attention from art scholars. Patricia Search, a member of a team of artists, art

²⁷⁵ *Zork* was written by students at MIT. See S. Levy's *Hackers*. p. 347.

²⁷⁶ "A new art form may arise from myst" New York Times, Sunday December 4, 1994, Sect 2, p. 1.

librarians, curators and art historians on the research project *Hyperglyphs* at the Rensselaer Polytechnic Institute has experimented with hypermedia to develop guidelines to facilitate navigation and information retrieval. To this end, she has outlined the syntax of the medium.

Hypermedia programs encourage the user to browse through the multimedia database and create links between varied sources of information. The focus is on the non linear association of ideas rather than narrative communication. In this type of communication environment, the user can create an information structure that is an integration of diverse interpretive elements.²⁷⁷

Such discourses legitimated by the academy in art theory, like much of the discourses on hypertext which has been generated in literary criticism, seem to have played a marginal role in developing a sustainable hypermedia initiative. It is rather students' non-academic applications which may be seen as playing the greater role.

The contingent marriage of interactive games with the Internet must also be seen as an important event in the chronicle of convergence. In 1980, in his final year at Essex College, Roy Traubshaw adapted the popular game *Dungeons and Dragons* to the computer. His classmate Richard Bartle expanded it the next year, called it MUD (for Multi-User Dungeon) and put it on the Internet.²⁷⁸ In turn, similar projects have been undertaken under the auspices of legitimate scholarly study, however, expressly

²⁷⁷ Search, P. "The Art and science of hypermedia." In Art, Science and visual Literacy: Selected Readings from the 1993 conference of the International Visual Literacy Association. p.

²⁷⁸ "The Dragon Ate My Homework." *Wired* 1.3 July/Aug. 1993, p. 70.

never quite advancing a controlled research environment.²⁷⁹ One example of such an experiment is *MediaMOO* an electronic conference space designed by Amy Bruckman and Mitchel Resnick who are researching "MUDing as a serious form of scientific communication."²⁸⁰ Another example is MIT's *Cyberion City*, conceived by retired network planner and self taught Piagetian, Barry Kort from Bell-Laboratories in collaboration with Stan Lim, a systems designer from California State University. Launched at MIT's Artificial Intelligence Laboratory in the late 1980s, *Cyberion City* is an electronic megalopolis constructed by elementary and high-school-aged children. This virtual city constructed by the collaborative writing of as many as 500 participants per day, now contains over 50,000 objects, characters and rooms. This is clearly the domain of the video game generation:

The main architects of *Cyberion City* are 15 years old or younger. The sheer bustle and intricacy of the land they have built is intimidating to the lone overeducated immigrant trying to get somewhere or build anything. As *San Francisco Chronicle* columnist Jon Carroll exclaimed on his first visit, "The psychological size of the place... makes it seem like [you're] being dropped into downtown Tokyo with a Tootsie Roll and a screwdriver."

Cyberion City suggests the important inclusion of a discourse community which has thus far been greatly overlooked.

Increasingly, accounts of an emerging digital world foreground the role of children in building the virtual future.²⁸¹ In this light

²⁷⁹ MIT's initiatives have been anything but "controlled" research environments, following the constructionist work of Seymour Papert. (See Papert, S. (1980)).

²⁸⁰ *Ibid.* p. 72.

²⁸¹ See e.g. Negroponte's (1995).

the videogame can be considered an important site of inquiry into the digital future.

Electronic playgrounds

Meyers (1990) notes that "the first and most basic of the fundamental characteristics of computer game genres is the machine itself."²⁸² Thus the study of the computer or video game begins with the study of gaming systems. However, there has been much cross pollination between the three distinct, if now converging trajectories: computer games, stand-up arcade games, and home videogame systems.²⁸³

The first computer game *Spacewar*, inspired by the E.E. "doc" Smith space opera novels, was designed for the mammoth PDP-1 at MIT by Slug Russell. The PDP-1 was commandeered by "hackers" from the Tech Model Railroad Club who collaboratively developed *Spacewar* during the early morning hours of 1962.²⁸⁴ Fittingly, the first arcade game *Computer Space* which appeared in 1971 followed the same theme. The next arcade offering, in 1972, was *Pong* which later made its way into home computer world on Ataris. In 1978, *Space Invaders* by Taito (originally called space monsters) appeared in arcades as well as on machines that did double duty as computer games and bar tables. *Space Invaders* was followed by *Pac Man* in 1980 and *Ms. Pac Man* in 1982. Today the attraction of these games which are graphically facile (by current standards)

²⁸² Meyers, D. (1990), p. 292.

²⁸³ *Ibid.*

²⁸⁴ Levy, S. (1984), p. 59-69.

is something of a puzzle. The seeming marginality of early arcade and bar machines also sometimes obscures their profitability, largely due to their distribution according to the pin ball machine model which anticipated a continuous flow of quarters.²⁸⁵

The insurgence of the videogame into the home market began in the late 1970s, first with the home computer, then with dedicated game units. Nintendo proved the viability of this trajectory with the game *Super Mario Brothers* in 1985. It sold 40 million cartridges worldwide and made the name Nintendo, like Kleenex for tissue papers, a generic term for the medium. In 1994 the Canadian video game industry alone did 300 million dollars worth of business. Worldwide videogame sales exceeded 5 billion dollars.²⁸⁶

In the years between 1985 and 1995 the videogame industry has become extremely competitive. Several generations of home machines have evolved, with processor speeds said to be doubling every 18 months.²⁸⁷ With the growing popularity of the Internet, a convergence between networked CMCs and stand alone systems is greatly anticipated. In an interview in *Next Generation*, a magazine dedicated to reporting "the future of interactive entertainment," Tom Kalinske CEO of Sega of America was asked whether or not CD and cartridge games are to be replaced by games

²⁸⁵ It is perhaps noteworthy that Edison modeled his vision of cinema on a vending machine distribution model.

²⁸⁶ "High tech toys" Kathryn Greenaway, *The Gazette*. Sat. Oct. 21, 1995. D-1,3.

²⁸⁷ This rate of increase is referred to as Moore's Law. Storage systems have also evolved from cartridges, to CD ROM storage systems. However, at the current moment, these may be seen as competing systems.

delivered via cable.²⁸⁸ (Sega, Nintendo and Panasonic 3DO all have experiments in delivering interactive games through a video-on-demand system.) Sega's research, according to Kalinske, suggests that those interested in "the Sega Channel" are also the most devoted consumers of the retail product. As a result, rather than expanding Sega's market share with on-line services, the Sega Channel would merely mean a re-shuffling of Sega's own customer base. The approach taken by Sega to videogame-on-demand is similar to the approach used by writers of "shareware" freely available over the Internet and in software retail outlets. The user of the on-line service is given only limited access, the first few levels of a game, for example, and must buy the retail product in order to get the complete fully-functioning product.

While the interactive entertainment industry in 1994 generated more than the box office earnings of all American motion picture studios combined,²⁸⁹ focusing on growth statistics in delivery systems may obscure the qualitative implications for the content of these systems. The comparison between film and video game can be illustrative in this regard. The interactive games industry is in an infancy paralleling that of film a century ago. Film itself the result of a convergence of technologies: stroboscopes, zoetropes, magic lanterns and the contingency of the invention of a flexible film stock (developed by George Eastman for use in still photography). Film is a medium which evolved from a technological curiosity at the turn of the century into

²⁸⁸ "Is Sega's Boss Scared Yet?" *Next Generation*. Vol. 1, 03, pp. 7-11.

²⁸⁹ "Rocket science" *Wired*. 2.11. Nov. 1994, p.111.

pervasive cultural force throughout the last five decades. In film's earliest incarnation, the Lumière brothers *Premiere Programme* (1895) attracted Parisian spectators to view moving images thought to capture reality: images of workers leaving a factory, a baby being fed, a gardener sprayed with his hose. Others exploited film's capacity for various forms of narrative. Georges Méliès early imitations of the Lumière's mimesis evolved into full-blown multi-media experiments. Films such as *Trip to the Moon* (1902) were *gesamtkunstwerks* of film, theatre and magical illusions. American Edwin Porter's *The Great Train Robbery* (1903) is often cited as giving film a commercially sustainable narrative form. The videogame finds itself, at this stage in its development, akin to film at the turn of the century, at a stage between the mimetic fascination of the Lumières and the transformative visions of Méliès and Porter.

At this mimetic stage, the videogame has been greatly criticized for appealing to too small a proportion of its potential constituency, primarily teenage boys. Brenda Laurel, for example asserts that "[t]he videogame boys think that content is made by them for a segment of young males and their whole industry is coagulated around that goal with its testosterone poisoned world view."²⁹⁰ Others argue that the videogame in its nascent form, with a lion's share of games designed around themes of combat, car chases and plumbers rescuing damsels in distress, is a reflection of a lack of creative alternatives. According to screenwriter and game designer Mike Backes, the videogame industry

²⁹⁰ "Brenda Laurel the technodiva speaks." *Cyberstage* Fall 1994, p.29.

is waiting for its own *Great Train Robbery*, a game which will set the example for games to follow.²⁹¹

Backes is a member of the interactive entertainment group, Rocket Science, launched in July 1993 in an attempt to coax a stronger convergence between film and videogame. Other key players seem to be favoring this trajectory of convergence, as well. In March of 1995, Bill Gates opened discussions with Dreamworks SKG, a Hollywood entertainment venture newly-formed by Steven Spielberg, Jeffrey Katzenberg and David Geffen. These three made a pilgrimage to Microsoft headquarters in Redmond Michigan on Mar 22, 1995 in a public display of their collaboration with Gates in the multimedia industry. Dreamworks SKG, a company valued at 10 billion dollars in its own right, is attracting investment capital and would-be collaborators at alarming rates.²⁹²

The convergence of film and the videogame has made some progress. A CD-ROM by Sierra called *Gabriel Knight: Sons and Fathers* boasts visuals which "bring it to the brink of cinema"²⁹³ and a sound track with the voice of film and rock star Tim Curry. Actors Dennis Hopper and Grace Jones are featured in another game called *Hell: A Cyberpunk Thriller*.²⁹⁴ Shooting games such as *Shock Wave* attempt to incorporate the photo-realism of live-action

²⁹¹ "Shape shifter" In *Wired*, 3.04. Apr. 1995. p. 94.

²⁹² "Microsoft joins Hollywood's dream team of moguls." David Einstein, *San Francisco chronicle*. Reported in *The Gazette* Mar 23, 1995 (D 2).

²⁹³ "A new art form may arise from myst" *New York Times*, Sunday December 4, 1994, Sect 2, p. 1.

²⁹⁴ *Ibid*.

segments into the polygonal graphics of the real-time interactive sequences.

Virtually there

With stakeholders in the hardware and software industries, in cable television, in arcades, in video rental outlets, in the home computer hardware and software industries, in Hollywood studios, predictions about the trajectory of development in VR can at best be tentative. What is clear is a lack of clarity. Indeed, the interpretative flexibility that exists in a given technology in its inventive phase would tend to prescribe an open approach to its study.

Predicting whose ideas of VR and which related technologies will become the "way of life" that Rheingold anticipates is a daunting enterprise. Michel Foucault in *The Order of Things* notes that the pursuit of an understanding of how things change in science and technology may be a futile endeavour as

the role of instruments, techniques, institutions, events, ideologies, and interests is very much in evidence; but one does not know how an articulation so complex and so diverse in composition actually operates.²⁹⁵

So many variables figure in the convergence of technologies which promise "virtual reality." It is impossible to predict or prescribe the trajectory that these technologies of virtuality will take. The meme of virtuality is, in many respects, already upon

²⁹⁵ Foucault, M. (1973). Quoted from Landow, G. (1992). p. 1.

us and will always be, for the notion of the "virtual" implies an "almost" and a "becoming." Surely technology will always be "almost" and "becoming." But by implication, human beings who are so deeply invested in this technology will also be "becoming." The next consideration, therefore, should reflect what sort of humans we are becoming.

Section 3

Play, Dramaturgy, virtual identity

Thus far, the discussion of technologies of virtuality has related to the convergence of discursive formulations of presence and telepresence and their material realization in enabling technologies. At this point, the discussion turns to the consideration of play, dramaturgy and computer mediated communications. Play and dramaturgy are proposed as approaches which invite the view that human agency and subjective consciousness are central features of presence. While technologies such as text may provide a template or lens through which culture can be framed and a critique of culture brought into focus, play and dramaturgy, seen as more basic features of social and symbolic interaction, offer a perspective which recovers agency and unique identity.

Chapter 4

Play

Play theory

The relevance of play theory to contemporary media studies has been duly noted, in relation to virtual reality (Rheingold 1991), in relation to the videogame (Meyers 1991, 1992a, 1992b) as well as in relation to networked communications (Ayccock, 1995). Play has also been discussed in post-structural theory, for example, in Derrida's consideration of semiotic play in the sense of looseness of fit (*jeu*),²⁹⁶ and Jean-François Lyotard's consideration of play in terms of agon (or joust), postmodern play seen as a contest against orthodoxy.²⁹⁷ Clearly a word which in the vernacular has many interpretations can be put to the service of many research interests. Here, emphasis will be placed on the provisional and transformative character of play, as well as the crucial role that it has in establishing and nurturing co-presence. Synchronous chat modes of CMC, for example, or the textual creation of virtual worlds in MUDs, can be seen as fostering a playful reconfiguring of more conventional modes of interaction. Play in these new domains can also be seen as a social conduit, play in computer mediated communications (CMCs) contributing to new modes of community building.

²⁹⁶ Derrida, J. (1978), pp. 278-294

²⁹⁷ Lyotard, J. F. (1988), p. 10.

Play in this capacity also has a constitutive role in the collaborative construction/discovery and maintenance of an individual's identity. Anonymity in CMCs allows the bypass of conventional means of identity constitution. The masks that avatars, aliases, nicknames and other on-line personae invite can be seen as offering new forms of social equalization. The study of play, thus, offers social scientists a method of recovering human agency, a feature of consciousness often overlooked in the study of culture and communications. What follows then is an introductory look at play theory that informs a later discussion of identity and community construction in relation to virtuality.

Play, anthropology and language

One of the earliest systematic attempts to interpret play was "practice theory" of Groos (1898, 1901). Groos's view that play was a rehearsal which prepares animals and humans for the serious endeavors of adult life came to be one of the most commonly held in play literature.²⁹⁸ Bronislaw Malinowski and A. R. Radcliffe-Brown, in formulating the functional approach to anthropology in the 1920s, introduced the notion of play as having a socializing function. Radcliffe-Brown emphasized the structures of socialization and Malinowski emphasized the individual's gratification of basic needs through an integration into the social system.²⁹⁹ George Herbert Mead (1932)³⁰⁰ also stressed

²⁹⁸ Loizos, (1967), p. 236.

²⁹⁹ See Schwartzman, H. (1978) p. 98.

³⁰⁰ Mead, G. H. (1932)

individual socialization. For example, playing a variety roles (e.g. positions in baseball), he saw children as learning the importance of specialized behaviour within groups. In learning to appreciate the role of others, a child learns to become "an organic member of society."³⁰¹ Malinowski additionally saw play as contributing to the child's understanding of the elements of culture.

The foundations of synthetic knowledge, the first elements, that is, of the scientific outlook, the appreciation of custom, authority and ethics, are received within the family. Later on, the growing child enters the group of his playmates, where, once more, he is dulled towards conformity, obedience to custom and etiquette.³⁰²

Malinowski would become an important contributor to British linguistics, offsetting the popular structuralist movement.³⁰³ Structuralism in linguistics following Saussure was a project of attempting to describe language as a coherent unified autonomous system. The work of Malinowski, Boas, Kroeber (and Sapir in the U.S.) focused on the relationship between language and culture, emphasizing the executive role that culture and context could play in determining linguistic structure. Malinowski argued that:

language is essentially rooted in the reality of the culture, the tribal life and the customs of the people, and... it cannot be explained without constant reference to these broader contexts of verbal utterance... An utterance becomes only intelligible in its *context of situation*... ³⁰⁴

³⁰¹ *Ibid.* p. 159.

³⁰² Malinowski, S. (1944). pp. 107-108.

³⁰³ See Ogden, C. K. and Richards, I. A. (1923).

³⁰⁴ Malinowski, B. "The problem of meaning in primitive languages." In Ogden and Richards. (1923), pp. 305-306.

Gregory Bateson, one of the key figures in the history of play theory, echoes Malinowski's emphasis on the importance of "context of situation." Bateson sees in play what he calls metacommunicative signals which serve as a method of "bracketing" or "framing" everyday interaction. He noticed that dogs, dolphins and chimpanzees are able to signal that a given behaviour or communicative event is "play," dogs, for example, engaging in "play" fighting. Bateson noted that such play must be signaled as "play," and that such signaling implies a level of meta-communication. The tacit signal between higher mammals that "this nip stands in for a bite and does not denote what a bite would denote,"³⁰⁵ led Bateson to the conclusion that "play" was preverbal expression.

While emphasizing context and framing, Bateson's theory is consistent with Saussurian structuralism. He suggests, for example, that, in the world of "form and communication," there are no "things, forces or impacts" only differences. However, Bateson eludes the trap of the recursion of differences which Derrida notes by suggesting that play represents "a difference which makes a difference." Like Malinowski, Bateson saw play as the foundation of synthetic knowledge. He re-evaluated the commonly held view of play as preparation through imitation, stressing that, while play does prepare children for role behaviour, it was far more important that it be understood as providing the means for them to learn about roles as ideal categories:

³⁰⁵ *Ibid.* p. 181.

It is by play that one learns that there are sorts and categories of behaviour... The child plays at being archbishop. I am not interested in the fact that he learns to be an archbishop from playing the role; but that he learns that there is such a thing as a role. He learns or acquires a new view, partly flexible and partly rigid, which is introduced into life when he realizes that behaviour can, in a sense, be set to a logical type or style. It is not the learning of the particular style you are playing at, but the fact of stylistic flexibility and the fact that the choice of style or role is related to the frame and context of behaviour.³⁰⁶

Language play

The concept of play has been a useful tool in philosophy with which to engage functional as opposed to formal aspects of language. The flexibility and provisional character of play can be seen in Wittgenstein's later work on language. In *Philosophical Investigations*,³⁰⁷ moving away from his previous more formalistic view of language, Wittgenstein developed "ordinary language philosophy" which treated language not only as a reproduction of the real (his view in the *Tractatus*)³⁰⁸ but as a response to it as well. Meaning is influenced not only by the formal semblance of its constituents to reality but by a given social context. Thus, Wittgenstein proposed the notion of the "language game," a concept which draws upon the insight that language is negotiated between participants in various situations. He describes, for example, the situational language of a builder

³⁰⁶ Bateson, (1956), pp. 148-149

³⁰⁷ Wittgenstein, L. (1953).

³⁰⁸ Wittgenstein, L. (1921).

and assistant in which the utterance "brick" would stand for "give me a brick."³⁰⁹ While language games once established are seen as "languages complete in themselves, as complete systems of human communication,"³¹⁰ they are also thought of as tools to be flexibly implemented or modified by interlocutors. Their claims to legitimacy are also arrived at in a process of tacit negotiation.

As noted above, Lyotard applies the concept of play to languages, (or orthodox codes). To do this, he adapts Wittgenstein's notion of language game to argue that the postmodern condition invites the deconstruction of fixed languages. Lyotard stresses Wittgenstein's suggestion that "various categories of utterance can be defined in terms of rules specifying their properties and the uses to which they can be put,"³¹¹ noting that these rules do not legitimate themselves but imply a social contract. The concept of language game for Lyotard invites a particular situationally-governed type of language to be played against. For Lyotard, the *agon*³¹² (or joust) sense of play is foregrounded: "to speak is to fight, in the sense of playing."³¹³ However, in Lyotard's language game, the adversary is not the interlocutor, but the accepted or orthodox language itself. Lyotard's emphasis on the language game as a socially deconstructive tool, while capturing the provisional character of language play, seems to minimize the importance in Wittgenstein's

³⁰⁹ Hardly suggestive of limited language ability, such abbreviated codes can be seen in airplane cockpits and as hospital operating rooms.

³¹⁰ Wittgenstein, L. (1958), p. 81.

³¹¹ Lyotard, J. F. (1988). p. 10.

³¹² *Ibid.* p. 88. n 34.

³¹³ *Ibid.* p. 10.

ordinary language theory of the language game as a pragmatic collaboration.³¹⁴

The post-structuralist view of language has tended to emphasize its conventional and the socializing aspects. Play theory invites a view of language which, while institutional and conventional, is constantly contextualized provisionally and playfully as a feature of ordinary language use. There are two apparent extreme views of language, implied here: one which sees language as subjectless cultural convention (negating the agency of language play) and another which sees language as entirely the whim of the individual. Neither view by itself seems tenable. However, Donald Davidson (1986) can be seen as exploring a middle ground between these two views with his notion of "passing theories." The concept "passing theories" recognizes the conventional character of language, while reflecting the transformational and provisional character of language play.

Davidson has difficulty with the term "literal" meaning. He notes that both literal and metaphoric meaning require contextual clues to aid in choosing between a number of possible referents.

³¹⁴ Wittgenstein's emphasis on pragmatics is echoed in Kenneth Burke's description of language as a goal directed symbolic activity. In keeping with Burke's Dramatism, (anticipating the next chapter of the thesis somewhat) language can be thought of as a set of stage properties. Just as stage properties are mimetic, like other objects with an institutionally assigned function, they can also be repurposed, a box becoming a chair, a cane a sword etc. In a similar manner, Paul Grice (1957, 1967) makes the important distinction in language between literal meaning and intended meaning. John Searle attempts to amend Grice's account building upon the speech act theory of Austin (1962). Searle distinguishes (1) utterance acts, the mere uttering of words, (2) propositional acts, the use of content and reference, (3) illocutionary acts, the use of language for conventional activities, e.g. greeting, promising, and (4) perlocutionary acts, the use of language to achieve an effect on interlocutors. (Searle, 1969, p. 23ff). Umberto Eco (1984) also uses Grice's distinction to explore the metaphoric use of language, the marking of clues of what he calls "implicature."

Implied or metaphoric use of language assumes shared knowledge of a literal meaning of the doubly meaningful word. Davidson therefore suggests the replacement of the problematic term "literal meaning" with the term "first meaning" (both terms implying a privileged meaning, but the former suggesting that this meaning exists apart from its being shared by interlocutors). He suggests that first meaning would have three preconditions (1) it is systematic, (2) it is shared, and (3) it is governed by learned conventions or regularities.³¹⁵

In light of this characterization of first meaning, Davidson suggests the following problem with interpretation. "First meaning" cannot account for malapropisms in language use, such as statements like Archie Bunker's, "We need a few laughs to break up the monogamy."³¹⁶ Davidson notes that such malapropisms, not incompatible with conditions 1 and 2 of first meaning, are not in compliance with condition 3. There seem to be no conventions or regularities for dealing with them. Davidson further suggests that it is expected that each interlocutor approach the speech transaction with a theory "adjusted to the evidence so far available to him: knowledge of the character, dress, role. sex of the speaker, and whatever else has been gained by observing the speaker's behaviour, linguistic or otherwise."³¹⁷ If interlocutors' theories were based solely on shared knowledge "or conventions," however, malapropisms could not fit and would represent a breakdown in communication. Davidson proposes that

³¹⁵ Davidson, D. (1986) p. 436

³¹⁶ *Ibid.* p. 434.

³¹⁷ *Ibid.* p. 441.

rather than a prior theory obtaining (based on fixed principles or competencies), what is applied is a "passing theory," "the theory he [the speaker] intends the interpreter to use."³¹⁸ This provides the flexibility to make malapropisms interpretable:

The passing theory is where, accident aside, agreement is greatest. As speaker and interpreter talk, their prior theories become more alike; so do their passing theories. The asymptote of agreement and understanding is reached when passing theories coincide. But the passing theory cannot in general correspond to an interpreter's linguistic competence. Not only does it have its changing list of proper names and gerrymandered vocabulary, but it includes every successful—i.e. correctly interpreted—use of any word or phrase, no matter how far out of the ordinary.³¹⁹

Davidson's notion of passing theory characterizes what could best be called language play, a view of communication which concedes language as neither the possession of the subject, nor completely fixed at any given moment within a culture. The notion of language play, expanding upon Wittgenstein's notion of language game, focuses on the dynamic and provisional process through which language games are developed, legitimated, altered, ignored, torn apart, reconstructed. In order for language play to work, interlocutors must play along. Thus, speakers (writers) modulate their use of language to specific hearers (readers). Speakers are more likely to engage hearers in a language game if their passing theory fits closely to the hearer's and vice versa. If not, the game is lost. It is noteworthy that, even if the speech situation calls for a deconstruction of orthodoxy, in Lyotard's sense, it

³¹⁸ *Ibid.* p. 442.

³¹⁹ *Ibid.*

will only succeed if interlocutors' passing theories are a close enough fit for something to be *shared*.

Davidson's notion of "passing theory" bears some resemblance to Lev Vygotsky's notion of language. Vygotsky (1962) saw language and thought as bound together constitutively, or as Barrett paraphrases him: "thought is not necessarily a fixed monolithic object, it is a synthesis of facts, ideas, languages."³²⁰ Vygotsky held a view of language and thought as dynamic. It suggested that the character of thought was a dynamic, transformative, changing, movement toward and in relation to objects, facts, and ideas "aimed at another person, a means of establishing relations."³²¹

Barrett (1992) rehearses Vygotsky's theory in the context of hypermedia and object-oriented programming, suggesting that

[t]hinking becomes a casting of a net (which is language), not merely a juggling of fixed objects—it is tentative (but testable), social both in the sense of grouping many things and of being articulated to an audience (and therefore responded to), "synthetic" or unifying (and therefore a personal possession—"original"—even in its social construction).³²²

Thus in a broader philosophical sense. thinking is a *play* of ideas. Communication in this light suggests *playing* at consensual thinking.

³²⁰ Barrett, E. (1992). p. 3

³²¹ Vygotsky, L. *Mind in society*. Quoted in Barrett, E. (1992), p. 3.

³²² *Ibid.*

Transformations

Considered thus, the relationship of language and thought can be seen as an intrapersonal and interpersonal play of ideas and codes of expression. In this capacity, play has an enormous transformative power. Helen Schwartzman, an anthropologist of children's play, makes the following observation:

Children transform sticks into houses, mud into food, and themselves into mothers and fathers; anthropologists transform houses into settlement patterns, food into subsistence economy, mothers and fathers into kinship systems, and people into cultures.³²³

While Schwartzman underscores the transformative power of children's play, she places equal emphasis on the transformative capacity of scholarship, a form of play with a higher degree of legitimation. Thus, she is wary of theoretical metaphors, or "theoretical kites" as she metaphorically calls them, that scholars playfully use.

Schwartzman's definition, nonetheless, shows the profound implication of this area of scholarly research:

In brief, play is an orientation or framing and defining context that players adopt toward something (an object, a person, a role, an activity, an event, etc.), which produces a text characterized by allusion (not distortion or illusion), transformation (not preservation), and "purported imitation" of the object, person, role, etc. In this way play gives shape to societal

³²³ Schwartzman, H. (1978), p. 1

affective and cognitive systems. These are play's products and they are extremely consequential.³²⁴

Play can be seen as a framing or defining activity and therefore is itself defined with difficulty without entering into the autistic circle of mirrors of which George Steiner writes. Schwartzman acknowledges the capacity for a hermeneutics of play, as play "produces texts" which invite interpretation. But there are other aspects of Schwartzman's definition which may lead to more fruitful insights into the collaborative construction of presence.

Clearly the view that play is a constitutive activity as much as it is mimetic is an important consideration. The assertion that play "gives shape to societal affective and cognitive systems" suggests a text, or "readable" product, but one produced provisionally in an activity whose central feature may indeed be mutability. For, in the activity of contextualizing, one can always introduce a new element which has the potential to recontextualize the entire activity. Indeed the framing of play itself can be reframed and the game can become more than a game. Play fights often become "real" fights.

One of the pioneers of modern-day play theory, Johan Huizinga (1938), author of *Homo Ludens* (Man the player), suggests that "play only becomes possible, thinkable and understandable when an influx of mind breaks down the absolute determinism of the cosmos."³²⁵ A text is, at best, a poor facsimile of the

³²⁴ Ibid. p. 330.

³²⁵ op cit. p. 3.

thought, desire or affective inspiration that has produced it.

The reader of a text can make only limited claims to sharing the mental state of the text's producer. Indeed the adequacy of these categories "author" and "reader," as such, as suggested above are ontologically suspect.

The consensual reality that play often strives for can serve a socializing function, the mental transformations of play occur in a fundamentally subjective domain because, as John Searle's puts it, "the ontology of the mental is an irreducibly first-person ontology."³²⁶ Thus, in addition to establishing and maintaining the group and one's role in it, play transformations are a major factor in the constitution of the self, an issue which will be taken up at length in chapter 6 of this thesis.

Transforming play into scholarship

The study of play in its own right, was at its zenith in the fifties and sixties. Historian, Johan Huizinga's, *Homo Ludens* (Man the player) originally published in Dutch in 1938, reappeared in English in 1950³²⁷ in addition to Bateson's "A theory of play and phantasy" in 1955,³²⁸ Other works from the period include W.

³²⁶ Searle, J. (1994), p. 95.

³²⁷ While Huizinga presaged Bateson and others by, in the thirties, drawing attention to the fundamental importance of play in culture, he is included in the discourse of the sixties because his greatest influences appear to be on Callois and Stephenson through his own translations of his original text (e.g. Stephenson cites the Beacon Press edition 1950, but Swartzmann uses the 1955 edition. Bateson's work on play in the thirties and forties appears to be part of a different discourse tradition, citing Malinowski and Mead, for example.

³²⁸ Bateson, G. (1955), pp 39-51. Also Bateson, (1972), pp 177-193.

E. Henry's *The Analysis of Fantasy* (1956), E. Larrabee and R Mayerson's *Mass Leisure* (1958) and Roger Caillois' *Man, Play, and Games* (1961). In the early sixties, William Stephenson (1961, 1962, 1963, 1964a, 1964b) elaborated a general "ludenic" theory which he used in concert with an innovative method of factor analysis (Stephenson, 1953) to explore the relationship between play and subjectivity.

Prior to Huizinga's work, the study of play tended toward the collection and classification of game texts (e.g. Babcock 1888, Culin 1907, Best 1925).³²⁹ Huizinga can be seen as inaugurating the anthropology of play, taking the player's perspective. As with Bateson later,³³⁰ Huizinga defined play as paradoxical to traditional rationalist thinking, "an activity of mind and yet irrational" further suggesting that "the very existence of play continually confirms the supra-logical nature of the human situation."³³¹

Huizinga's definition of play highlights play's social importance in maintaining bonds by establishing group and individual identity:

Summing up the formal characteristics of play we might call it a free activity standing consciously outside "ordinary" life as being "not serious", but at the same time absorbing the player intensely and utterly... It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner. It promotes the formation of social groupings which tend to surround themselves with secrecy and to stress

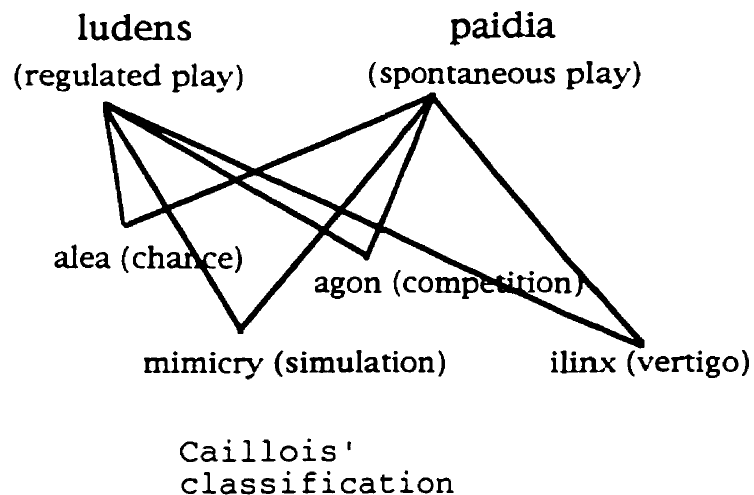
³²⁹ See Schwartzman, H. (1978), p. 257.

³³⁰ See Bateson (1958), p.263

³³¹ Huizinga, J. (1950), pp. 3-4.

their difference from the outside world by disguise or other means. ³³²

The first contentious area in Huizinga's definition was his emphasis on competition. He saw play functioning either as "a contest for something" or "a representation of something" stressing that even mimetic play could be seen as a contest for "the best representation of something."³³³ Roger Caillois addressed this emphasis on competition and highlighted a wider variety of types of play: *agon* (competition), *alea* (chance), *mimicry* (simulation), and *ilinx* (vertigo). In his analysis, Caillois frames these four categories of play under two more general categories: *ludens* (controlled and regulated play) and *paidia* (spontaneous play).



³³² *Ibid.* p. 13.

³³³ *Ibid.*

Another problematic area in Huizinga's definition, the ontological division between the "playful" and the "serious" was noted by Jacques Ehrmann. Ehrmann raises the contention that,

if the status of "ordinary life," of "reality," is not thrown into question in the very movement of thought given over to play, the theoretical, logical and anthropological basis on which this thinking is based can only be extremely precarious and contestable... for considering "reality," the "real," as a given component of the problem as a referent needing no discussion... They define play in opposition to, on the basis of, or in relation to this reality.³³⁴

Ehrmann's difficulty with Huizinga's distinction between "playful" and the "serious" invokes a phenomenology most associated with Schutz,³³⁵ reflecting a discourse that goes back to William James's "The perception of reality."³³⁶ James avoided the "objective" analysis of reality using a phenomenological strategy of asking under what circumstances we think things are real, W.I. Thomas responding with the dictum: "If men define situations as real, they are real in their consequences."³³⁷

The "consequences" of play are most apparent in Huizinga's analysis of the relationship between play and law. Aside from the apparently inherent element of agon in litigation, the contest of law can have either frightening or reassuring consequences, depending on how the contest is framed and depending upon which

³³⁴ Ehrmann, J. (1968). p. 33.

³³⁵ Schutz's views are elaborated in "On multiple realities" (1945) and reprinted in "The stratification of the life world" in Schutz and Luchmann's *The Structure of the Life World*. (1966).

³³⁶ In *Mind* (1869) and was reprinted as a chapter in James, W. (1950). *The Principles of Psychology*. vol 2. New York: Dover.

³³⁷ Thomas and Thomas, (1928), p. 572.

role one finds oneself in. The case of the O.J. Simpson trial is a paradigm example of how a jury's framing of a trial can affect its outcome. Courtroom procedures, admissibility of evidence, precedence and a host of other institutionally regulated practices only obtain if all jury members play by the same rules. The Simpson trial also points to two sides of the coin of "entertainments." All entertainments, all forms of play, involve a suspension of disbelief. Thus, entertainment is a two-way proposition: In order for a media object to entertain us, to hold our attention, we must entertain it, suspend disbelief in its being a mediated construction, provisionally assigning it "truth" value. In this respect communication is never (other than in the crudest statistical sense) mass communication. In the case of the Simpson trial, All jury members were "entertained" with the same evidence. However, they did not entertain the same notions of what represents "reasonable doubt."³³⁸

The context of communications

Gregory Bateson is known as much as an interdisciplinarian as he is for any one research area, his work touching the fields of anthropology, sociology, philosophy, cybernetics, and psychiatry.

³³⁸ A better example even than the famed O.J. Simpson trial of the consequences of "entertainment" in reframing "entertainment" can be seen in Errol Morris's film *Thin Blue Line*. The production of the film can be seen as bypassing the court system altogether. Morris's documentary which probes the wrongful conviction of Randall Adams for the Texas murder of a policeman and includes an on-screen confession by the murderer was seen as instrumental in getting Adams a new trial. See Pearson, J. *Spike, Mike, Slakers and Dykes*. 1996.

In the persona of a researcher in the latter area, Bateson, began work at the Langley Porter Clinic with Jurgen Ruesch with whom he co-authored *Communications: The social matrix of psychiatry* (1951). Interested in focusing on the contexts within which communications take place. Ruesch and Bateson outlined four levels or systems in a communications matrix: the intrapersonal, the interpersonal, the group and the cultural. The intrapersonal level domain referred to neurological processes, at the level of reception. The interpersonal network referred to a situation of equivalent parts in a closed circuit, for example, two people in a conversation. The group network referred to unequal parts, such as the one to many transmissions of television or radio. The cultural network referred to innumerate influences of culture on innumerable individuals.

William Stephenson (1966) attempted to provide an alternative to Ruesch and Bateson's theory,³³⁹ offering insights into the intrapersonal and cultural domains, seeing the former as a "black box," and the latter as lacking any explanatory power:

[In the cultural network] each person is seen as bombarded by countless messages, the sources of which he is quite unable to recognize; what is transmitted and what is received cannot be ascribed; and the "correction" of "information" is impossible. This is the network way of saying that the customary aspects of people's behaviour are acquired under complex cultural conditions in which the printed word, monuments, myth, primary group, and similar conditions influence the individual

³³⁹ Stephenson's critique of information theory is quite specific to Ruesch and Bateson's interpretation of it. There is no mention for example of the more commonly recognized mathematical model of Claude Shannon or its translation by Warren Weaver (Shannon, C. and Weaver, W. (1949). *The Mathematical Theory of Communication*.

without his awareness... Ruesch and Bateson regard this as an infinitesimal part of a person's total network of communication. There is no "atom," that is, no symbolism of the basic effects so that research in this area is extremely difficult.³⁴⁰

William Stephenson concerned that communications research was emphasizing "social control," offered a theory of "convergent selectivity," suggesting that individual choice was a factor in determining the type and quality of mediated interaction. His basic thesis was that "at its best mass communication allows people to become absorbed in *subjective play*."³⁴¹

To study "subjective play," Stephenson sought to unearth individuals' deep-seated ideas, attitudes, beliefs, and opinions through a technique he called Q-methodology, a form of factor analysis which focuses on subjects. The end result of Q-methodology or Q-sorting (as it is sometimes called because subjects sort through a list of opinions and score them according to their personal views) is to arrive at individual "ideal" types. Self evaluation, Stephenson felt, would reveal the "intrapersonal" data which Reusch and Bateson had suggested were unavailable to the researcher.

Stephenson explains Q-methodology as "a method by which an individual can model for himself what his attitude of mind is about complicated topics or issues."³⁴² This avoids the bias of an

³⁴⁰ Stephenson, W. (1966), p. 7.

³⁴¹ *Ibid.* p. 1.

³⁴² *Ibid.* p. 5.

"objective" observer who imposes his or her own perceptual categories onto the respondent.³⁴³

Stephenson sees self evaluation as an integral part of subjective play which in turn appears to have a constituent role in what he calls "the selective principle"

It is proposed that the basic elements in human communication in general, and mass communication in particular, are a person's self-referent opinions, discretely regarded, made in relation to events or situations.³⁴⁴

In Stephenson's view, opinion formation is an ongoing process of playing, and thus play is seen as having a constitutive function in culture:

Mass communications in its play aspects may be the way a society develops its culture—the way it dreams, has its myths, and develops its loyalties.³⁴⁵

Stephenson further suggests that certain media foster subjective play to a greater degree than others. For example, from his ludenic theory of news reading, he posits that news on radio or television, unlike news from newspapers, involves little or no subjective play. He hypothesizes that "it will be important if it can be shown that newspapers lend themselves to

³⁴³ One shortcoming of Q-methodology which Stephenson does not note is that, once the subject has responded to the Q-sort list, the data are in the hands of the researcher. Stephenson has gained less recognition for his version of play theory than for his statistical methods, cited in textbooks as an innovator in statistical analysis. See Nunnally, J. C. and Bernstein, I. (1988).

³⁴⁴ Stephenson, W. (1966), p. 14.

³⁴⁵ *Ibid.* p. 48.

such play about news, whereas the electronic media merely entertain—the former being self directed, the latter not."³⁴⁶

If, post-structuralism, as Giddens has characterized it, represents a retreat into the code, taking little or no account of human agency, then Stephenson's play theory can be seen in diametric opposition as a retreat into subjectivism. In Stephenson's play theory, language and culture have no fixity or stability outside of their being fostered in a collection of subjectivities. Unfortunately, the end result is the same, as the individual in Stephenson's analysis is statistically generalized to an ideal type and human agency is statistically reduced.

Play, individuality, psychology

Bateson suggested that one of the key components of play is the ability to adequately telegraph or flag play so as to distinguish play from non-play situations. This function is seen as carrying over to the general ability humans have for logically typing situations. Bateson applied this notion to research in schizophrenia and developed a theory of psychopathology which is seen as arising from repeated contradictions in the situational logic of social reinforcement, called "double binds,"³⁴⁷ ("damned if you do damned if you don't situations.") Other aspects of play have also been seen as central to social construction of notions of sanity in general.

³⁴⁶ *Ibid.* p. 28.

³⁴⁷ Bateson, G. (1979). pp. 133-134. Also see Watzlawick, P. 1976. pp. 18-21.

Alfred Korzybski felt that a central feature of sanity was the ability to distinguish between what he called the "map territory relation," the hierarchical relationship between a representation and its object.³⁴⁸ This oft cited concept refers, in some interpretations, to recognizing that a representation can never be what it represents³⁴⁹ or in others that an effect can never be its cause.³⁵⁰ Bateson suggests that there is often a blurring of the map-territory relation in play as it is transformed into ceremony and ritual. Particularly in art, religion and magic the distinction is easily blurred, Bateson suggests with examples of "the flag which men will die to save, and the sacrament that is felt to be more than an outward visible sign, given to us."³⁵¹

The case of "the flag men will die to save" underscores the degree to which human beings are deeply invested in symbolic and institutional facts and are thus paradoxically possessed of both a biological and a symbolic self. The life and survival of a human self is as much a question of symbolic as physical survival. Genetic diversity, in Darwinian terms, which ensures the survival of the species in the case of potential environmental change is augmented in the case of the human species by a symbolic variety, by cultural diversity.³⁵² The Darwinian concept of an instinct for self-preservation seems rather untenable for human beings, when considered in the face of certain contradictions. Smoking,

³⁴⁸ Korzybski, A. (1941).

³⁴⁹ Rheingold, H. (1991). p. 44.

³⁵⁰ Bateson, G. (1979), p. 117.

³⁵¹ Bateson, G. (1972), p.183.

³⁵² See Hall, E. (1976), pp. 1-10.

drinking, and overeating certainly do not serve biological survival. But as semanticist Samuel Hayakawa suggests, it is not so much the physical self that human beings struggle to preserve—though we will certainly exhibit this tendency as well. Rather, it is the "symbolic self" that enjoys the preponderance of our care and attention. While *homo sapiens* is no doubt a physical animal, bound by the laws and limitations of the material world, the sense of self of *homo symbolicus* "is conditioned, shaped and mediated by symbols."³⁵³ Hayakawa's "symbolic self" which he likens to Carl Roger's "self concept," is an assertion sensitive to the realization that human beings, given to abstraction and symbolization, are not only possessed of a physical self but of a self which is symbolically constructed. "Captains of industry" who commit suicide after a stock market crash are incapable of willing their physical existence to persist after fatal injury to their symbolic identity.³⁵⁴

Among Freud's many contributions to theories of selfhood is the notion of the idiosyncrasy of self, or as Rorty calls it, "the

³⁵³ Hayakawa, S. (1953), p. 37.

³⁵⁴ The symbolic self can be seen as supported and sustained by play. Through sophisticated play, human beings have created an institutional buffer, a virtual reality which in some respects transcends nature, bypassing biological evolution by elaborating its technologies. Of course, the mediational approach to communications is well-known. A tradition of scholarship has characterized technologies as extensions (McLuhan 1964; Hall, 1976) or prosthetics (Weizenbaum, 1976) which are used to augment our physical capacities (e.g. the telescope and microscope for sight; the telephone and radio for hearing; film and television for both). But these technologies or tools have a unique relationship or meaning for each individual who encounters them both on a physical and a discursive (symbolic) plane. It is play which can be seen as bracketing a monolithic view technologies as extensions, because as Schwartzman suggests, play enables us to transform its (these) objects, transform its participants, transform its settings, transform itself into a more "serious" or consequential activity.

contingency of selfhood."³⁵⁵ Freud not only dispensed with the notion of rationally centered self, but problematized certain aspects of biological determinism, suggesting that "we are all too ready to forget the fact that everything to do with our life is chance, from the our origin out of the meeting of spermatozoon and ovum onwards."³⁵⁶ Freud's concept of what Rorty calls the contingency of selfhood helps to underscore the social construction and contingency of emotions such as pity, explaining inescapable inconsistencies in human behaviour. Rorty asks, for example, how is it possible to reconcile the paradox of an individual being both a tender mother and merciless concentration-camp guard.³⁵⁷

Such narratives underscore the contingency of the day-to-day narrative of play, that is of play's texts. However, play itself seems to enjoy an executive role in its capacity for creating these texts, a capacity for engendering, orienting, and sustaining the symbolic self in socially constructed symbolic worlds. Erik Erikson³⁵⁸ suggests that a "child's play is the infantile form of the human ability to deal with experience by creating model situations and to master reality by experiment and planning"³⁵⁹ Erikson also noted that the capacity in children to play develops in stages. In Erikson's schema, play progresses from "autocosmic," kinesthetic sensations, to "microsphere," play with

³⁵⁵ Rorty, R. (1989), pp. 23-43.

³⁵⁶ Freud, S. (1909), p. 137.

³⁵⁷ *Op cit.* p. 32.

³⁵⁸ Eric Erikson's theory of psychosexual development greatly influenced Bateson and Margaret Mead in their study of Balinese behaviour. See Schwartzman, H. (1988), p. 174.

³⁵⁹ Erikson, E. (1963), p. 222.

manageable toys to "macrosphere," play in the world which is shared with others.³⁶⁰

An interesting elaboration of this developmental approach to the individual's playful construction of symbolic realities can be found in the work of British psychoanalyst D. W. Winnicott (1971).³⁶¹ Winnicott in his clinical practice is interested in what he calls "transitional objects" or "not me" possessions which the child uses in the first "playground" which is the "potential space between the mother and the baby."³⁶² Transitional objects (such as, a cloth, doll, stuffed animal or a toy) are seen to stand in for the mother's breast or other object of the child's first relationship. Eventually these objects lose their meaning, however, because

the transitional phenomena have become diffused, have become spread out over the whole intermediate territory between "inner psychic reality" and the external world as perceived by two persons in common, that is to say, over the whole cultural field.³⁶³

Thus for Winnicott there is a "direct development from transitional phenomena to playing, and from playing to shared playing, and from this to cultural experiences."³⁶⁴

For Erikson and Winnicott, play can be seen as representing an individual's continuous and continual engagement of a symbolic, or "simulated" world, a process which serves to foster the

³⁶⁰ *Ibid.*

³⁶¹ Winnicott, D. W. (1971).

³⁶² *Ibid.* p. 42.

³⁶³ *Ibid.* p. 5.

³⁶⁴ *Ibid.* p. 51.

individual's construction of an identity within socially constructed realities. This fitting together, while symbolic, is arguably rooted in more basic aspects of human biology.³⁶⁵ Individuals achieve identity with the group by "playing the game." Indeed, in response to Korzybski, Bateson (1972, 1979) and Watzlawick (1976) have argued that sanity can be seen as a measure of one's ability to play along with/in a reality which is socially constructed.³⁶⁶ Thus, it would seem that as important as maintaining the map-territory distinction, constructing a world of integrated logical types, is arriving at categories of belief that afford oneself a symbolic identity within a symbolic community.

Winnicott feels that the practice of psychoanalysis has gone astray in regard to its largely hermeneutic approach to play, concerning itself with "play content" rather than "play as a thing itself."³⁶⁷ Following Bateson, Winnicott views play not as supplementary or compensatory, but as a normal aspect of child or adult development and maintenance of social reality. Moreover, he sees the predominant approach of using play as a medium for understanding psychopathology as problematic. This is because psychotherapy is itself animated by play, as it "takes place in

³⁶⁵ Bateson, for example, recounts an experience he had while playing with a dolphin, or perhaps more accurately, while a dolphin was playing with him. All of his efforts at be non-communicative with the animal failed as she persisted in establishing a relationship with him. It became evident to Bateson that play for dolphins, gibbons and dogs involved highly patterned behaviour for "fitting together." In humans the process is much more flexible, but it nevertheless is seen as fundamental to establishing complex frames of behaviour which vary from group to group and maintain group identity. Bateson, G. (1979), p. 148.

³⁶⁶ See Berger, P. L. and Luckman, T. (1966).

³⁶⁷ Winnicott, D. W. (1971), p. 40.

the overlap of two areas of playing, that of the patient and that of the therapist."³⁶⁸

Wittgenstein makes a similar statement about language games, suggesting that "games cannot be mastered by definition because definition is a language game itself."³⁶⁹ Correspondingly, Carl Jung expressed his misgivings with the hermeneutics involved in psychotherapy when dreams or free associations are investigated for signs of repression. Again his main concern was that, when endeavoring to interpret dream symbolism, it is difficult for therapists to keep their own associations out of the process:

A doctor sees so many things from the seamy side of life that he is seldom far from the truth when he interprets the hints that his patient produces as signs of an uneasy conscience. What he eventually discovers, unfortunately, confirms his expectations.³⁷⁰

The play of imagination

Like Carlo Ginzburg whose study of the idiosyncratic cosmology of 15th century Italian Miller suggests the subjective manner in which the individual imagination can reproduce the "episteme,"³⁷¹ John Caughey stresses the role of the individual in

³⁶⁸ *Ibid.* p. 38.

³⁶⁹ *Op cit.* p. 88. n. 33.

³⁷⁰ Jung, recognized this threat in psychoanalysis, eventually giving up its practice. Jung, G. (1964), p. 10

³⁷¹ The term episteme is used in post-structuralist literature to roughly correspond to orthodox knowledge. Foucault describes the term as an historicizing term to stand for "the total set of relations that unite, at a given period, the discursive practices that give rise to epistemological figures, sciences, and possibly formalized systems... it is the totality of

constructing an imaginary social world within the culture.

Caughey's view of culture follows Ward Goodenough's suggestion that "culture consists in whatever one needs to know in order to operate in a manner acceptable to its members and do so in any role that they accept for any one of themselves."³⁷² Caughey acknowledges the normalizing capacity of culture. However, not unlike Stephenson, who opts for a view of culture as a convergence of subjectivities, Caughey draws his data from individuals and "the perspective from which they experience the world."³⁷³

Caughey's approach reveals the limitations of a hermeneutic or archeological approach to culture, or an approach that supposes that all texts and cultural artifacts can reveal an accurate picture of the experience of unique individuals. Rather than looking at exteriorized culture, Caughey emphasizes the interior existence. He asserts that, "cultural studies of social organization have neglected a fundamental aspect of our subjective experience—our pervasive involvement in imaginary social relationships."

Caughey's work on individual fans' identification with cinema and sports celebrities³⁷⁴ suggests that, akin to the Homeric *rhapsode* who formed a physical identification with his epic heroes, modern-day fans often live out an imaginary identification, becoming their heroes in imaginary play, or

relations that can be discovered, for a given period, between the sciences when one analyzes them at the level of discursive regularity." Foucault, M. (1972). p. 191.

³⁷² Goodenough, W. H. (1957), p. 167.

³⁷³ Caughey, J. (1984), p. 10

³⁷⁴ See Caughey, J. (1987), pp.19-34.

playing out interactions with their heroes in fantasy relationships. One young law student Caughey interviewed had a fantasy relationship with (pre-scandal) O.J. Simpson. She recounts:

We sometimes meet because he needs help. On these occasions, I am the best lawyer in town... a willing soul ready to do battle (for him)...³⁷⁵

A. I. Hallowell feels that "the self in relations with other selves may transcend the boundaries of social life objectively defined."³⁷⁶ In studying the importance of social relations between human beings and "other than human beings" in Ojibwa culture, Hallowell stressed the importance of a spirit world to the social fabric this culture.³⁷⁷ Caughey, heeds Hallowell's warnings that a study of non-Western social organization that does not consider spirit relations is incomplete and suggests that, in Western culture, we have our own analogous "spirit relations." Our "spirit world," the imaginary social world of fantasy, Caughey places into three categories: media figures, whom we do not interact with face-to-face (except perhaps in imaginary interactions), but who are nevertheless typically more numerous than our "real life" interactants; purely imaginary figures which are constructed in our dreams or in our day dreams; and the hundreds of people we know only as they appear in our imaginary musings, ponderings or anticipations.³⁷⁸

³⁷⁵ *Ibid.* p. 22.

³⁷⁶ Hallowell, A. I. (1955), p. 92

³⁷⁷ Hallowell, A. I. (1960), p. 22-23

³⁷⁸ Caughey, (1984), p. 21.

The impact of these imaginary social relationships is characterized by a soap-opera-addicted character in Italian filmmaker Nanni Moretti's *Caro diario* (1995), who informs us that television has not led to the collapse of the family, but surrounded us with new families: the Cartwrights, the Bunkers, the Waltons, the Ewings. This ironic sentiment is echoed by Joshua Meyrowitz (1985) who considers how electronic media are compelling scholars to re-evaluate previous frameworks for analyzing social space. Meyrowitz suggests that,

[t]he walls of the family home, for example, are no longer effective barriers that wholly isolate the family from the larger community and society. The family home is now a less bounded and unique environment because of other family members access to other places and other people through radio, television and telephone.³⁷⁹

And, of course, today one would have to add to Meyrowitz's offerings the growing evidence of relationships played out in the meeting of imaginations in the consensual symbolic worlds of computer mediated communications, e-mail, Newsgroups, CHAT, MUDs, the Web, and other computer mediated permutations yet to be conceived.

³⁷⁹ Meyrowitz, J. (1985), p. vii.

Chapter 5

Dramaturgy

This wide and universal theatre
Presents more pageants than the scene
Wherein we play in
All the world's a stage,
And all the men and women merely players:
They have their exits and entrances;
And one man in his time plays many parts

(Shakespeare: *As you like it.*)

While play theory serves to highlight a flexible and provisional character of communications at the heart of layers of socially constructed technologies and institutional facts, a look at relevant themes in research in dramaturgy will aim to underscore the manner in which communication through a wide variety of media is rooted in fundamental techniques or technologies of rehearsing and playing out social interactions.

The dramaturgical approach has been applied in a variety of fields over the past 70 years, one discourse path followed in this chapter is traceable to the "Chicago School" (Cooley, 1902; Mead, 1934) and "symbolic interactionism." One of its descendants, Erving Goffman (1959, 1967, 1974), introduced the notion of "interaction order," the normative structure guiding the face-to-face domain of communications.³⁸⁰ His dramaturgical perspective, which Giddens has characterized as a theory of "co-presence,"³⁸¹ is

³⁸⁰ Goffman, E. (1983).

³⁸¹ Giddens, A. (1987), p. 115.

enjoying a renewed popularity in research on CMCs.³⁸² Following Goffman, the ethnomethodology of Harold Garfinkel (1967), is a technique which attempts to uncover these situational norms by breaking their rules. Eric Berne in *Games People Play* (1964) has developed transactional psychology from the dramaturgical perspective that individuals play out the lifelong roles of adult, parent or child and their different nuances. The above work has collectively influenced the work of a number of contemporary researchers, including Lyman and Scott (1970, 1975) Burns (1972), Harré and Secord (1972), Lahr and Price (1973), Turner (1974), Brissett and Edgley (1975). Another discourse path which intersects at times with the one above can be drawn from the work of Kenneth Burke (1945) and his application of a theory of "Dramatism" to literary criticism. Sociolinguist Dell Hymes (1972, 1974), for example, attributes aspects of his perspective Burke's poetics of "Dramatism."

³⁸² As suggested by a cursory search on the Web, for example, of CMC-related discussions or course curricula.

Drama and Dramaturgy³⁸³

Cultural studies scholar Raymond Williams³⁸⁴ stresses that while there are two meanings in modern usage for the word "drama," (one to describe the literary work of a play, another to describe its performance) it is crucial to recognize that in both forms what is described relates to action, drama coming from the Greek word *dran*, to act.³⁸⁵ Williams maintains that drama, even when it refers to the written play, refers to theactable idea, a language which one can be immersed in, which was intended for and only makes sense when considered in the light of its capacity for performance. In the same vein, the dramaturgical perspective on the social sciences, with its focus on the situation, can only be meaningful in terms of individuals' capacity, in the play of thought, to imagine (or imaginatively place) themselves in social situations, situations whose rules of conduct are prone to constant change and the negotiation of which is a flexible and dynamic process.

In concert with the perspectives offered in play theory, dramaturgy is an approach to the consensual construction of

³⁸³ Drama is the domain theatre, whereas dramaturgy makes reference to everyday social interaction. The distinction is often blurred in both sets of discourses, however, when dramatists speak metaphorically of the drama of everyday life and dramaturgically oriented social scientists are given to using dramatistic formalisms, discussing the scripting, blocking and choreography of everyday interactions. Rather than insist on a sharp distinction, it may be useful to allow some degree of play in the area of definition, as the insights of one set of disciplinary discourses can sometimes be useful in another.

³⁸⁴ Williams, R. (1968), pp. 170-171.

³⁸⁵ Partridge, E. (1983), p. 166.

symbolic worlds which invites a recovery of human agency and unique or unitary identity.

Overview

As Hare and Blumberg (1988) characterize it, social interaction is seen as performance. Thus it is dynamic and purposive. It starts with an actable idea which unfolds into a situation. The idea may be a loosely defined image (plan of action) or a detailed script. Hare and Blumberg see informal situations as tending to be governed by images, and formal situations tending to be more heavily scripted.³⁸⁶ There may be some value in drawing the connection between a hierarchy of codifiability in dramatic actable ideas or scripts and the transactionality continuum and Collins model of hierarchically codifiable expert knowledge presented in chapter one.

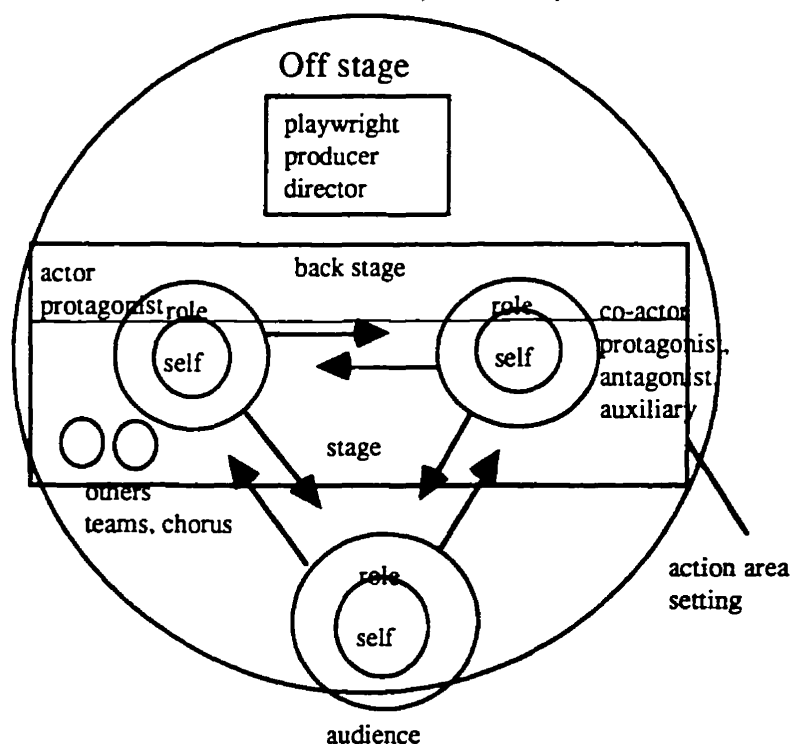
Dramaturgy invokes notions of "virtual" space and chronology. Thus, generally, an action area is designated (or understood). The idea of an action area (or definable range) is in keeping with what Kenneth Burke refers to as the scene/act ratio, the deemed range of appropriate actions in a designated action area.³⁸⁷ In addition, a performance can be analyzed in terms of an episode, a distinguishable unit of social activity, each episode generally being marked by a beginning and ending ceremony. Harré and Secord (1972) identify three types of episodes: formal episodes,

³⁸⁶ Hare, P. and Blumberg, H. (1988), p. 3.

³⁸⁷ Discussed more fully below.

routines, and entertainments. Formal episodes, such as liturgies or games, have well articulated rules. Routines tend to be processes which possess a "natural" or logical order of enactment. Entertainments are more open-ended performances that are ends in themselves.³⁸⁸ Sarbin (1976) sees episodes as instances of contextualism, the root metaphor being the historical event which consists of "an ongoing texture of multiply elaborated episodes, each leading to others, each being influenced by collateral episodes, and by the efforts of multiple actors who perform actions in order to satisfy their needs and meet their obligations."³⁸⁹ Consider the following diagram:

Definition of situation, frame, illusion.



(From Hare and Blumberg, 1988, p.7)

³⁸⁸ See Harré, R and Secord, P. F. (1972); 149-153, 176-204

³⁸⁹ Sarbin quoted in Hare, P. and Blumberg, H. (1988), p. 5.

While such dramaturgical models are tools for social scientists, they can also be seen as models of the variables which players must negotiate in formulating an interpretation of a situation. Considering the complexity of variables and the further complexity of intertextuality to which Sarbin alludes. Dramaturgy suggests a dynamic approach that assumes a capacity for dealing with perpetual change and novelty in situations as well as actors' roles within those situations.

The large rectangle represents the play action area (or scene). It can be divided into front region or "region of decorum"³⁹⁰ and backstage areas, in accordance with Goffman's distinction between performances offered in public and private spaces or to audiences who are "privileged" to a greater or lesser degree. For example, the demeanor of servers in a restaurant might vary considerably when dealing with customers in the restaurant proper (front area), and when discussing those customers with colleagues in the kitchen or backstage area. Goffman's notion of decorum makes the distinction between behaviour to an audience and front region behaviour which may be maintained even when the audience is not present.³⁹¹ Turner and Edgely (1976), in their study of funereal enactments, elaborate on this distinction with the notion of front stage rhetoric which can be illustrated by a sign they witnessed on an embalming room door:

REMEMBER

This preparation room becomes sacred when a family
entrusts us with one of its most precious

³⁹⁰ Goffman, E. (1959), p. 107.

³⁹¹ Ibid.

possessions. Keep faith with *them* by conducting *yourself* as though the family were present. The body is dear to them... Treat it reverently.³⁹²

They note that, while dealing with loved ones, in accordance with front stage behaviour, the deceased is referred to in such terms as "dearly beloved" or "loved one." Whereas, morticians use a different vocabulary among themselves when engaged in their work (backstage). Dearly beloveds become "floaters" (bodies recovered from drowning); "Mr. Crispies" (bodies of individuals who burned to death); "fresh," "warm" and "cold" ones (depending on how recently bodies have been received). While both frontage and backstage behaviour is performance, this performance applies a different set of rules. Initiates to the backstage area may need some time and the application of numerous "passing theories" to gauge the new act/scene ratio. The popular cinema and TV narrative of the rookie cop, doctor, or lawyer conflicted in the presence of veterans who are cynical and jaded after years on the job is popular enough today. Usually it involves the former discarding ideals in order to become a member of the team (or cast). At other times, it becomes a morality play in which the everyday practices of a given social group is deconstructed according to the scriptwriter's projection of the public's idealism. Notwithstanding the occasional moral indignation, the practice of alternately arranging front stage and backstage performances in accordance with audiences of varying levels of

³⁹² Turner, R. E. and Edgely, C. (1976). In Hare and Blumberg, (1988), p.144.

privilege or intimacy is an everyday occurrence at all levels of social intercourse.

Hare and Blumberg's diagram also represents offstage areas to reflect persons not present whose influence is relevant to the on-stage performance. The analogy of playwright, producer and director are used. One need only think of the rhetoric of a political campaign and the notion of paying "lip service" to appreciate how performances can be scripted, directed or sanctioned by persons outside of the scene. This aspect of dramaturgy can be considerably more subtle however. In the transactional psychology developed by Eric Berne (1964) and Claude Steiner (1975), for example, the suggestion is made that individuals adopt one of three principle roles: parent, adult, or child to engage a given situation. This suggestion implies that our situational coping mechanisms involve reliance upon previously learned scripts or strategies. People are seen as routinely falling back upon learned behavioral patterns. For example, individuals are seen as sometimes regressing into a child-like disempowerment in the presence of a parent or an authority figure who invokes a parental set of associations. Sometimes people mimic well-learned behavioral models. New teachers can find themselves, for better or worse, adopting the habits of their teachers. The statement, "You're behaving just like your father." can be offered as a reproach or as a term of endearment.

The diagram also allows the possibility of parallel or competing actable ideas. In any given situation an actor/protagonist is seen as the theme carrier of the actable idea

of the moment. There is also a co-actor who may be an auxiliary player, supporting the protagonist, or may be the carrier of another idea, possibly a competing idea. Thus, as in the case of Davidson's "passing theory," two interlocutors may launch a performance while carrying alternate models of a situation. Consider the following conversation overheard between a young man and woman in a Montreal cafe:

A. Do you mind if I ask you a personal question?

B. No, don't say it.

A. You know what I'm going to ask?

B. Don't ask it.

A. Just say, "Yes" or "No."

B. That's not fair.

A. Just say, "Yes" or "No."

B. That's not fair.

A. Just say, "Yes" or "No."

B. That's not fair

A. Just say, "Yes" or "No."

B. What about you?

A. What?

B. What if I asked you?

A. What?

B. Does it begin with 's'?

A. Umm, wait a minute.

B. What? You don't want to answer?

A. Wait a minute. I was going to ask if you're on medication.

This is a peculiar illustration of an all too common conversational gambit. Different situations offer varying numbers of contextual clues to define the actable idea which guides the performance. In this case, there appears to be insufficient context or shared background knowledge on the part of the interlocutors for their passing theories to fit. Situations can be highly ambiguous, leaving ample room for misinterpretation. But as with Davidson's example of malapropisms, such errors in interpretation can be highly instructive, as they suggest that all performances entail, to some degree, the implementation of experimental actable ideas, with tentative notions of one's role and an explicit or implicit audience.

Hare and Blumberg's diagram also shows nested circles with the self located inside the role, suggesting that each individual brings something unique to the role being played. There is also the implication that the role one plays may to some degree define one's self, or sense of self, either in accordance with particular situations or additively, that is, as the collection of roles one sees oneself as playing. Sociologist of technology and psychoanalyst, Sherry Turkle refers to one of her "selves" as "French Sherry" referring to the different persona she has assumed while studying and living in France.³⁹³ It is not uncommon for people to report that they feel as though they are "a different person" when speaking a second language. Correspondingly, within the dramaturgical perspective, one's sense of identity will be constituted in large measure by the collective set of roles one

³⁹³ Turkle, S. (1995), p. 208.

sees oneself as playing, as well as by the sense one has of the roles that one will be accepted in by a given audience or audiences.

Thus, an important component of the diagram is found in the third nested circle representing audience, as well as actors in the role of others, teams, and chorus. The "others" in a performance can be perceived as a support group in the manner of a Greek chorus, echoing or reinforcing the performance or theme of the protagonist. At times this support can be articulated vocally. At other times it can be tacit. Hare and Blumberg also note that the audience and "other" need not be a distinct physical other, that at times people are their own audience, monitoring their own performance. However, the diagram reflects the notion that all social behaviour is performed with some idea of a reference group in mind.

Immersion

Bateson's notion of frame is central to the dramaturgical perspective, frame being an apt metaphor for proscenium. The individual is seen as framing the social interaction to create a transitory "reality," or "illusion." (Burns, 1972) This is akin to "suspending disbelief" in a fiction, be it literary, theatrical or cinematic. Suspending disbelief in a cinematic fiction, for example, involves investing a certain degree of involvement in the film's diegesis (the internal logic that would obtain within it). Various genres of fiction bring with them sets of accepted

possibilities: the western, the shoot out; film noir, the anomic outsider; screwball comedy, the endless ills and accidents that cause injury to no one. The notion of investment in a fiction or enactment however raises the question of degree of investment, which in turn raises questions of attention and consciousness discussed in chapter 1.

Sarbin³⁹⁴ offers a list of seven levels of "self" involvement or investment in a given role, (in addition to non-involvement):

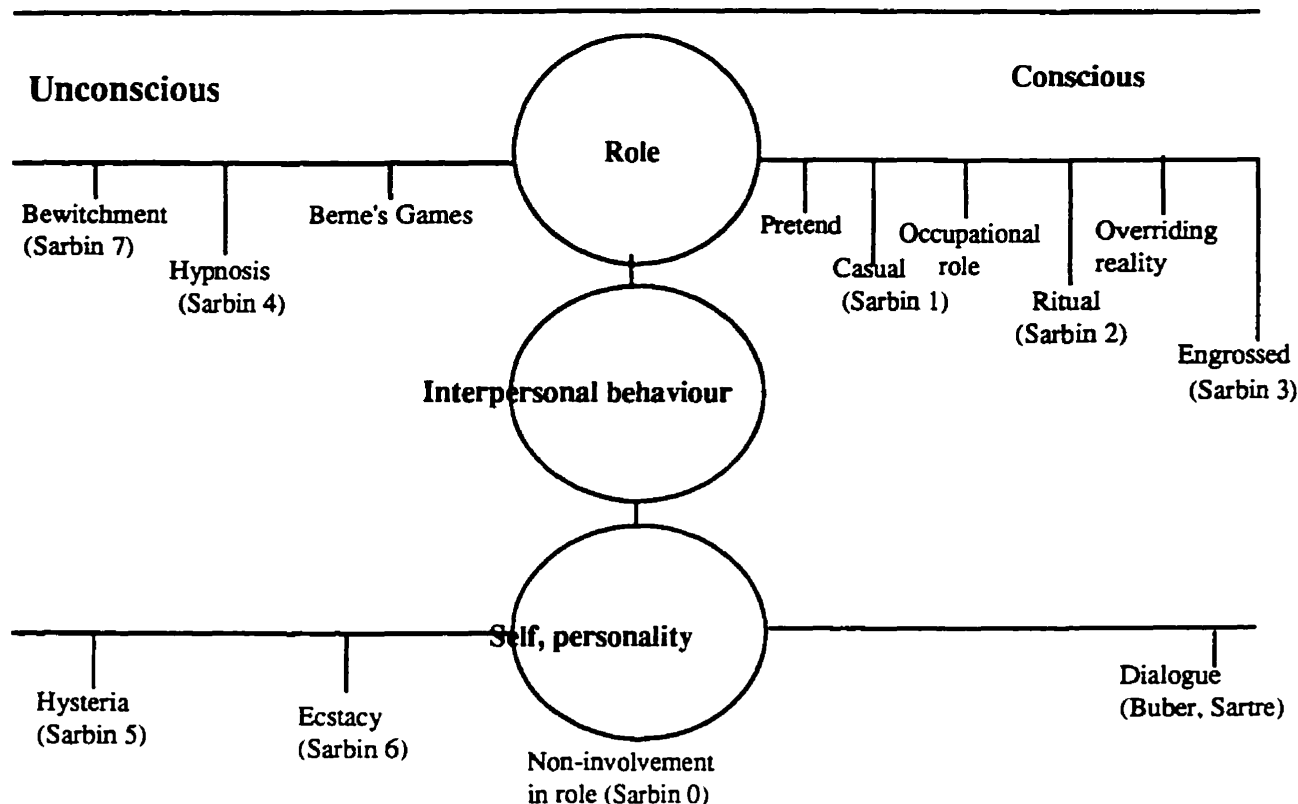
- 1) casual role enactment,
- 2) ritual acting,
- 3) engrossed acting,
- 4) classical hypnotic role taking,
- 5) histrionic neurosis,
- 6) ecstasy, and
- 7) bewitchment.

In addition, Sarbin notes that some of these levels may relate more to an actor's specific role and others more to the self or personality of the actor deemed to be at the core of the role.

Hare (1985) offers the following illustrative diagram:³⁹⁵

³⁹⁴ Sarbin, T. (1976), p. 17.

³⁹⁵ Hare, P. (1985).



From Hare, P. (1985, 154)

Hare suggests, as the diagram indicates, that levels of involvement correspond to levels of consciousness or unconsciousness as well. The vertical dimension of the diagram is intended to reflect: at the top, categories of involvement which are thought to relate more to the role that a given situation calls for; at the bottom, levels of involvement which stem more from aspects of an individual's personality and; in the middle the interrelation between role and personality, that is, aspects of a given role influenced or nuanced by individual characteristics.

The distinction between self/personality and role is an interesting one and raises certain ontological questions. For example, is the "self" or "personality" in this view realized

diachronically through the analysis of the behaviour patterns (or propensities toward certain behaviours) of the individual which are conditioned by long-term practices? Or is the self to be realized synchronically, as the sum total of all the possible roles playable by a given individual at a given moment. In either case, there is a certain determinism implied by the ontological separation of role and self. Whereas, if "role" is reliant on context, "self" seems to be fixed. This is not consistent with what is represented in the diagram. Here, the role is nuanced by characteristics of the self, but the role is also seen as constitutive of the self. In *Games People Play*, Berne (1964) describes the "family" game as "an ongoing series of complementary ulterior transactions progressing to a well-defined predictable outcome."³⁹⁶ But as Joshua Meyrowitz has noted, in modern societies, and in the context of modern modes of mediating experience, individual's spend increasingly less and less time in the company of family members. Thus, personality traits which are formed as the result of family transactions come in conflict with those formed in other interactional contexts. "Personality" or "self" can, in this case, be characterized as a work in progress, reflecting a struggle to reconcile conflicting selves, or senses of self. This complication in the definition of self is exacerbated in the context of the MUD and other modes of CMC, considered by Turkle (1995) and others as a laboratory of identity. These new media environments and their impact on identity will be considered in the next chapter.

³⁹⁶ Berne, E. (1964), p. 44.

The horizontal dimension in the diagram is seen as reflecting degrees of consciousness or involvement in a given role. Again, here, the term "consciousness" is problematic. On the right hand side of the continuum, "consciousness" is used synonymously with "awareness" or to recall Csikszentmihalyi's term, attention. In this respect, Hare's placement of "occupational role" and "overriding reality" to the right of "pretend" seems counter-intuitive. Pretending would seem to involve a greater suspension of disbelief. That is, pretended roles would seem more vulnerable to reframing than "occupational roles" or "overriding realities." Perhaps pretend here is taken to intimate distraction, or trance-like separation from "everyday reality." In that case, Hare's use of the word consciousness would tend to privilege the "everyday reality" frame as deserving conscious attentional control. However, as Csikszentmihalyi's work on flow, discussed in chapter 1, suggests, the escape from "everyday reality" motive demands and enjoys our attention to a considerable extent, an extent that will also be given further consideration in the next chapter.

If consciousness is problematic, then the unconscious is doubly so. On the right side of the continuum, particularly in relation to aspects of the self, unconsciousness is seen as reflecting a more clinical notion of "unconscious" extracted from psychoanalytical discourses. At the extreme left, for example, we find Sarbin's notion of "hysteria" from histrionic neurosis. In contrast, on the extreme right side we find the hyper explicit features of self awareness found in the notion in Buber (1970) of

dialogue between I and Thou.³⁹⁷ It is unclear in this formulation whether "unconscious" refers to a lack of attentional control accompanying non-explicit features of a social situation, or to a category of behaviour legitimated in psychoanalytic discourses. There appears to be a qualitative difference between these two types of "unconscious." Moreover, the continuum does not reflect the automation of certain performance behaviours through practice and habituation. In the learning of cues or patterns which enable human beings to interpret social situations, as in the learning of one's first language,³⁹⁸ there is no need to believe that these cues or patterns are, or need to be, learned explicitly, that is consciously. Thus, the area of consciousness and unconsciousness in this formulation is a fuzzy area.

Truth and reality

The lifelong playful and dramatic negotiation of social situations can be seen as aiding in the construction of individual and social realities. Davidson's notion of passing theory then can be seen as a continual, provisional loose alignment of interlocutors world views and a shoring up of the differences in points of reference. Such a proposition, however, would seem to be contingent on interlocutors accurately representing their world views. Contrary to this expectation, research in dramaturgy favours the view that categorically "honest" interactions are

³⁹⁷ Or in Sartre, in the opposite of "Bad faith." See Caws (1979). p. 76.

³⁹⁸ For example, one may ask whether human beings are "conscious" of the rules of their language until they are learned explicitly.

neither a prerequisite to the maintenance of social "realities," nor are they representative of the norm.

Goffman (1959) in outlining the dynamics of "teamwork" in maintaining the "interactive order" asserts that even though "one over-all objective of any team is to sustain the definition of the situation that its performance fosters. This will involve the over-communication of some facts and the under-communication of others."³⁹⁹

Turner, Edgely and Olmstead (1975) seeking to test interlocutors' truthfulness in their everyday interactions, found through informants' self-evaluations, that only 38.5 percent of their exchanges were perceived to be completely honest. For the other 61.5 percent, five basic motivations for the apparent lack of truthfulness were determined. The most frequent motivation was "to save face" (accounting for 55.2 percent of the cases). An untruth could be seen as saving the face of the speaker or of the person being spoken to. The second most common reason for untruthfulness (accounting for 22.2 percent) was "to avoid conflict or tension." (e.g. "I'm not angry, I've just had a rough day.") A third reason (accounting for 9.9 percent) was to maintain social interaction (e.g. feigning interest during dinner conversation). A fourth reason (accounting for 9.6 percent) was to affect interpersonal relationships. (e.g. One could suggest that giving a ride was not taking one out of the way.) And the final motive for untruthfulness (accounting for 3.2 percent of the cases) was to achieve personal power. (e.g. The classic case:

³⁹⁹ Goffman (1959), p. 141.

turning down an invitation with the claim that one was too busy.) Turner, Edgely and Olmstead's study⁴⁰⁰ of the self-evaluations of 130 subjects raises many questions in relation to conclusions one might want to draw about larger social norms from self-reports and researchers interpretations; however, it tends to underscore Goffman's statement above.

Goffman's interest in teams is related to what he calls face work. Much of our behaviour in social settings is seen as having the ultimate aim of controlling the impression others have of the situation, saving or keeping face both for ourselves and for others or shedding a favorable light on a situation. Much of Goffman's work involves the examination of work environments and he is quick to point out that face work is not always self promotion or playing an auxiliary role in supporting others' self promotion. Performance teams often serve to provide impression management for a work environment, such as the waiter or waitress whose demeanor gives a restaurant a certain atmosphere.⁴⁰¹ Goffman also gives examples of special categories of occupational performance such as shilling, in which gamblers are hired by a Nevada casinos to play to give the impression of activity at a table or in an establishment. Likewise, he describes special roles such as "stick," the local kid at a circus who is given flashy prizes to create the impression that winnings are to be had.⁴⁰²

⁴⁰⁰ Turner, R. E., C Edgely, and G. Olmstead. (1975), pp. 69-89.

⁴⁰¹ Goffman, E. (1959). p 77.

⁴⁰² *Ibid.* p. 146.

Face work is also an important notion which relates back to issues role and self. Goffman highlights this distinction or what he calls "a double definition of self" in order to explain discrepancies in interlocutors capacities to manage face work.⁴⁰³ An individual having embarrassed another can separate the self as actor from the self as object (role and self, in Hare and Blumberg, 1988) castigating him/her self the actor (the behaviour) without demeaning the self as object. However, others can not utter the same slurs to face without causing potential harm. Harré and Secord (1972) elaborate on Goffman's face work notion, suggesting that not only are individuals preoccupied with presenting an image of self to others, but that this presentation of self is indeed a process of self discovery.⁴⁰⁴ Performance becomes a testing ground for self actualization.

Goffman breaks face work into two categories: avoidance processes and corrective processes. In avoidance processes, one uses go-betweens or avoids actions or situations which might threaten an acceptable self-image. Thus, an "inappropriate" or importune behaviour such as a slip of the tongue or a rumbling stomach will usually go unnoticed, that is, individuals enter the action area with blinders to actions which would threaten the integrity of the scene. Corrective processes are put into effect to restabilize a situation gone wrong, e.g. excusing oneself, offering an apology or an excuse.

⁴⁰³ Goffman, E. (1967), p. 312.

⁴⁰⁴ Harré, R and Secord, P. F. (1972), p. 215.

Embarrassment is the result of the awareness of behaviour which is inappropriate to the situation or "out of character" with the self-image which one attempts to project.

[I]mportant everyday occasions of embarrassment arise when the self projected is somehow confronted with another self which, though valid in other contexts, cannot be sustained in harmony with the first. Embarrassment, then, leads us to "role segregation." Each individual has more than one role, but he is saved from role dilemma by "audience segregation," for, ordinarily those before whom he plays out one of his roles will not be the individuals before whom he plays out another, allowing him to be a different person in each role without discrediting the other.⁴⁰⁵

In addition to everyday performances being largely "untruthful," Goffman stresses that teams are primarily secretive, team members being linked together by a bond of reciprocal dependence. This bond, Goffman stresses, is not to be confused with the clique.⁴⁰⁶ Sometimes the possibility of resisting an undesirable collusion can present itself as the more salient act and an even less desirable threat to the maintenance of face. One's refusal to go along might stand out more than an act of untruthfulness, for example.

The notions of untruthfulness and secrecy need not be seen as malevolent. Again focusing on the work situation, Goffman stresses that workers in an establishment who maintain a tacit set of rules of behaviour with regard to clients are in effect members of a secret society. The fact that they do not share these rules is not undesirable to clients. Their auxiliary role as client

⁴⁰⁵ Goffman, E. (1967), p. 108

⁴⁰⁶ Goffman, E. in Hare, P. and Blumberg, H. (1988), p. 39.

serves to maintain this scenario and protect their privileged status.⁴⁰⁷

Altercasting

While face work underscores the collaborative nature of maintaining social "realities" or actable ideas, this tacit conspiracy is sometimes an unwitting, or less-than-willing collusion. Weinstein and Detschberger (1963) have coined the term altercasting to refer to the process of enlisting others in roles which are supportive of to the maintenance of a given scene. The process of enlisting auxiliary cast members is a subtle one and Elizabeth Burns⁴⁰⁸ notes that it is clumsy at best. Scenes do not come off, as cast members in auxiliary roles fail to deliver the appropriate lines, or as in theatrical improvisations, the actors dry up. Altercasting also reflects the degree to which the poetics of social interaction are learned. Children, for example, prove to be poor co-conspirators when they show no interest in the conversation of adult dinner guests.

The "passengers on a train" theme is a popular one for illustrating how rapid provisional relationships are formed. Meyrowitz alludes to Simone de Beauvoir's example.⁴⁰⁹ The following from Hans Magnus Enzensberger⁴¹⁰ illustrates the rapidity

⁴⁰⁷ The status of customer may not always be privileged one. This is a matter of the prestige associated with the work situation in question. (e.g. certain sectors of the entertainment business would seem obvious exceptions.

⁴⁰⁸ Burns, E. (1972), p. 139

⁴⁰⁹ Meyrowitz, J. (1985), p. 55.

⁴¹⁰ The example is meant by its author as a parable of the tenuous concept of nationhood (and the corresponding intolerance of migration) in Europe

with which cast members are tacitly enlisted and how community is socially constructed and maintained in a performance whose casting is both inclusive and exclusive:

Two passengers in a railway compartment. They have commandeered the little tables, clothes-hooks and baggage racks: made themselves at home. Newspapers, coats and handbags lie around on the empty seats. The door opens, and two new travelers enter. Their arrival is not welcomed. The original passengers, even if they do not know one another at all, behave with a remarkable degree of solidarity. There is a distinct reluctance to clear the free seats and let the newcomers share them. The compartment has become their territory to make available, and they regard each new person who comes as an intruder. This behaviour cannot be rationally justified; it is more deeply rooted.

However, matters virtually never get to the point of open conflict. That is because the passengers are subject to a system of rules; their territorial instinct is curbed by the institutional code of the railway as well as by other unwritten norms of behaviour: like that of courtesy. Looks are exchanged, and formulaic apologies are muttered through clenched teeth, but the new passengers are tolerated. One gets used to them. Yet they remain, even if to a decreasing degree, stigmatized.

This harmless model is not without its absurd features. The railway compartment is itself a transitory domicile, a location which serves only to change locations. The passenger is the negation of the sedentary person. He has traded a real territory for a virtual one. Despite this he defends his transient abode with sullen resentment.

Two new passengers open the compartment door. From this instant the status of those who entered earlier changes. Only a moment ago they were intruders; now they are natives. They belong to the clan of compartment-occupants and demand all the privileges due to them.⁴¹¹

Another interesting perspective on altercasting can be drawn from reconsidering Csikszentmihalyi's views on transactions and

⁴¹¹ Enzensberger, H. M. (1992), pp.17-18.

recalling his suggestion that the objects one attends to or surrounds oneself with, or conversely, the objects which "select the individual" by calling attention to themselves, are indexical of "the patterns of attention that help to structure the everyday consciousness."⁴¹² In a similar fashion, altercasting can be considered in the larger view in terms of the "others" individuals choose to surround themselves with (including others in the world of imaginary social interactions discussed by Caughey⁴¹³ such as celebrities and imagined others).⁴¹⁴

Identity creation, that is, the creation of one's self concept, as suggested above, can be seen as involving the collection of roles which one sees oneself as playing, as well as the collection of roles which one deems others to feel are possible or acceptable roles for one to play. Additionally, just as one's sense of self can be seen as constituted in one's self-referent relations with objects,⁴¹⁵ one can equally be seen as constructing a self-concept in terms of one's self-referent relations to others. A person's circle of friends; a person's mate, or intimate others, or love interests; academics' circle of authors, read and reflected upon, with whom an identification is made, all the persons actual and imaginary, to whom one gives over one's attention, can be seen as important determinants in one's self concept. Thus, through altercasting one sets about the task

⁴¹² Csikszentmihalyi, M & Rochberg-Halton, E. (1981), p. 185.

⁴¹³ Caughey, J.(1984).

⁴¹⁴ In the same sense that audiences need not be actual audiences, merely reference groups, these others need not be actual, merely a part of one's imaginary social interactions.

⁴¹⁵ Csikszentmihalyi's definition of object is an extended definition which includes animate objects. Csikszentmihalyi, M. (1981), p. 184.

of constructing a self concept by association. However, altercasting is a collaborative enterprise. One is aided or hindered in the process with the tacit complicity of others to be altercast.

Language and dramaturgy

Dramaturgy can be used in studying the ways in which social interactions are coded or structured akin to the manner in which language is studied. Noam Chomsky's linguistics (1957, 1959, 1965) stressed the innate capacity of human beings to acquire the rules of a language, or more specifically its syntactic rules. Indeed, Chomsky's focus has been exclusively on the rules of syntax.⁴¹⁶ In considering Chomsky's theory of linguistic competence, the capacity unique to humans of acquiring the grammatical rules of a language, Dell Hymes adds that

Within the social matrix in which it acquires a system of grammar a child acquires also a system of its use regarding persons, places, purposes, other modes of communication, etc.—all the components of communicative events, together with attitudes and beliefs regarding them.⁴¹⁷

⁴¹⁶ See, for example, Chomsky, N. (1965). in the introduction to *Aspects of the Theory of Syntax*.

⁴¹⁷ Hymes, D. (1974), p. 75. Chomsky (1957) argued convincingly that not only could the syntax of a language be studied in isolation but that there was strong evidence to refute the behaviorist theory of imitation and conditioning. In effect, children exposed to a natural language acquired a set of rules which they could apply creatively. However, a linguistic theory which cannot incorporate a larger communicative models seems to be the question.

The child learns not only the language (the formal code), but the appropriate use of that language in the many scenes, acts and plays in the drama of everyday life. Sociolinguist Hymes explores language through "communicative events," or dramatic instances that form the context of human communication. Just as language is meaningless without context, knowledge of context is, if not a prerequisite, a corollary of language learning. As Bateson says, "without context, words and actions have no meaning at all. This is true not only of human communication but of all communication whatsoever, of all mental processes, of all mind."⁴¹⁸

In considering a broader view of language through a theory of communicative events, Hymes steers away from the "logical analysis" offered by semioticians such as de Saussure and Levi Strauss⁴¹⁹ and instead draws from Kenneth Burke (1945) and Roman Jakobson (1953). Burke's pentad of components of a performance: act, scene, agent, agency, and purpose is similar to the elements of communicative competence noted by Hymes. Hymes perspective also owes a great deal to Jacobson's more exhaustive inventory of elements that aim at a comprehensive ethnographic account of a communicative event. These include: *participants* (e.g. senders-receivers, addressors-addressees, interpreters and spokesmen); available *channels* and their modes of use (e.g. speaking, writing, drumming, blowing, whistling, singing, face and body motion, tasting and smelling, tactile sensation); *codes* shared by groups (e.g. linguistic, paralinguistic, kinesic, musical,

⁴¹⁸ Bateson, G. (1972), p. 482.

⁴¹⁹ Hymes, D. (1974), p. 6.

interpretive, interactional); *settings*, including nested communications where one communication occurs within another, also *settings* in which communication is permitted, enjoined, encouraged, abridged; *message forms*, including *genres* (e.g. sonnets, sermons, sales pitches, routines and styles); *attitudes* and *contents*, the bias or topic; *the event* itself and the possibility of self reference.⁴²⁰ Clearly, to communicate within a community, one must possess more than merely the rules that determine word order and inflection in a language. Moreover, there may be reason to give general communicative competencies priority over syntactic ones.⁴²¹ One can talk of interpretative frames, screens, templates or schemata (Rummelhart, 1981, 1984, 1985; de Beaugrande, 1981)⁴²² all referring to conceptual tools which humans instantiate in order to interpret social situations.

Burke's notion of terministic screens⁴²³ is such a tool which refers to the template of "culture" or "consciousness" through which our experience is mediated.⁴²⁴ Erving Goffman uses Bateson's term "frame" in a similar manner:

⁴²⁰ From Jakobson (1953, 1960). In Hymes, (1974), p. 10

⁴²¹ For example, in some artificial intelligence (AI) research in the 70s, machine-human understanding was often more successful when contextual considerations were designated an executive function over syntax. See for example Schank, R. and R. Abelson (1977).

⁴²² The term schema was first used by Kant in the *Critique of pure reason* to refer to "the device through which the rationality applies its categories on the manifold of sense perceptions."

⁴²³ Burke's expression "terministic screen," can be likened to Kant's schemata, Heidegger's "Dasein" (consciousness), Wittgenstein's "networks" in *Tractatus* or "language games" in *Philosophical investigations*.

⁴²⁴ Burke also applies Heidegger's hermeneutic circle to the terministic screen so that self-reflexivity obtains. The terministic screen can be both the tool of interpretation and at the same time its object ("Terministic screens" in Burke (1966), p 53.)

I assume that definitions of a situation are built up in accordance with principles of organization which govern events—a least social ones—and our subjective involvement in them; frame is the word I use to refer to such basic elements.⁴²⁵

or the term "framework":

[A] primary framework is one that is seen as rendering what would otherwise be a meaningless aspect of the scene into something that is meaningful.⁴²⁶ (1974, 21)

Edward Hall also suggests that culture is a phenomenological screen:

One of the functions of culture is to provide a highly selective screen between man and the outside world. This screening function provides structure for the world and protects the nervous system from informational overload.⁴²⁷

Hall adds to the notion the variable quality of a filter which can be employed in degrees. Thus cultures and uses of cultural knowledge vary in terms of the manner in which cultural knowledge is coded. Hall implements the notion the of a high-low context continuum, the high-context end of the scale reflecting the degree to which persons are aware of the selective screen they place between themselves and the outside world, and the low-context end of the scale reflecting the degree to which information is "vested in the explicit code."⁴²⁸ Hall suggests, for example, that Japan tends to be high-context (HC) and the U.S. tends to be low-context, HC communication being implicit and LC communication

⁴²⁵ Goffman, (1974), p. 11.

⁴²⁶ Goffman, (1974), p. 21.

⁴²⁷ Hall, E. (1976), p. 85.

⁴²⁸ *Ibid.* p. 91.

being explicit. HC communication he suggests is "fast, efficient and satisfying," however it requires an investment in programming.⁴²⁹

From play theory it can be understood that contextual frameworks are highly mutable objects of interpretation. For the ability of one screen to be rapidly transformed into another Goffman uses the musical analogy of "keying" (to account for the transformation of one primary framework into another). Play is the best example of this. The activity has all the characteristics of the primary framework, but is keyed to be understood as "play."⁴³⁰ Major types of keys are: *make believe*, *contests*, *ceremonials*, and *technical redoings* (practice, simulation, experimentation), as well as a special category which Goffman calls *regrounding*. In regrounding, the activity is not transformed, however, the motives for performing it are reframed. Charity work, work done as a form of leisure, or legal cases done as test cases, are some examples. Another is "shilling," mentioned above, the practice in which hired players gamble at tables to create the illusion of activity.⁴³¹

⁴²⁹ These ideas of HC and LC communication echo the discussion raised in chapter 1 of transactionality best represented on a continuum, as well as Collins (1989) view of types of knowledge in expert systems being graded from highly codifiable to tacit knowledge.

⁴³⁰ Goffman, E. (1974), pp. 40-44.

⁴³¹ *Ibid.* p. 76.

Agency and other stage properties

Dramaturgy can be seen as an alternative means of encoding or decoding communication in the manner of language. However, it is difficult to employ the dramaturgical approach to the notion of a "subject-less" language suggested by Giddens,⁴³² for, as Hare and Blumberg note, paraphrasing Burke (1945) "to act in a scene, the agent must employ some means, or agency."⁴³³

Seeing Hymes's notion of communicative competence as a transdisciplinary use of Kenneth Burke's theory of "Dramatism"⁴³⁴ requires some poetic license, the former referring to capacities of the language user and the latter to a method of literary criticism. Burke's critical theory, however can also be seen as paralleling the functional approach to language competencies of John Austin (1962). Austin suggested that the act of communication, or "speech act," has three components: The locutionary act: "the act of 'saying something'," the illocutionary act: "the performance of an act in saying something" (e.g. greeting, promising) and the perlocutionary act: the act, through saying something, of producing consequences such as emotions, etc.⁴³⁵

Similarly, in Burke's "Dramatism" he conceives of the communicative event as situated in action. He notes that interpretation and criticism interfere in this process. Thus he

⁴³² Giddens, A. (1987), p. 86.

⁴³³ Hare, P. H. and Blumberg, H. (1988), p. 4.

⁴³⁴ Burke, K. (1967).

⁴³⁵ Austin, J. (1962), pp. 94-101.

devises what he called the act/scene ratio (range or limit of interpretations of a situation): "In the selection of terms for describing the scene, one automatically prescribes the range of acts that will seem "reasonable," "implicit" or "necessary."⁴³⁶

Burke's "Dramatism" bridges implicit and explicit aspects of interpreting the communicative event. It provides a comprehensive overview which examines the tacit but implicit interstices between explicit declarative points of reference:

Dramatism is built upon the systematic view of language as a species of "symbolic action." While not slighting the importance of terminology in the communicating of knowledge, which in turn shapes our concepts of "reality," Dramatism is a method of terministic analysis (and a corresponding critique of terminology) designed to show that the most direct route to the study of human relations and human emotions is via the methodic inquiry into the cycle or cluster of terms and their functions implicit in the key term, "act." "Act" is thus a terministic center from which many related considerations can be shown to radiate... dramatism centers in observations of this sort: For there to be an act, there must be an agent. Similarly, there must be a scene in which the agent acts. To act in a scene, the agent must employ some means or agency. And there can not be an act, in the full sense of the term, unless there is some purpose.⁴³⁷

Burke's theory is easily reframed as a tool for understanding face-to-face communication as a dynamic process. Variable situational features of communication, such as those presented in his pentad can be seen as aiding an interlocutor in applying a "passing theory" with the best fit to another interlocutor. This

⁴³⁶ Burke, K. (1967), p. 341.

⁴³⁷ *Ibid.* p. 332

can be illustrated by a theatre technique called a shadow scene with a dialogue such as the following:

A: Hey you.

B: Who, me?

A: Yeah you, what are you up to?

B: I thought it was pretty obvious.

A: Do you know who I am?

B: Yeah, I guess so.

A: Well, come with me.

This type of scene is used in theatre workshops as an exercise in interpretive flexibility, in which the actors attempt to the provide dialogue with a context through their gestures and intonations. The actors often attempt to "interpret" the dialogue in as many different ways as possible (e.g. A=cop, B=thief; or A=teacher, B=student; or A=prostitute, B=client). In this manner, actors experiment or "play" with various elements of Burke's pentad (for example the agent, and agency) and by extension all of the variables can be transformed from one act to another.

Thus, Burke's pentad might also be illustrated thus. Someone (an agent) might walk up to another (agent) saying, for example, "You're wearing white." On examining the utterance's declarative meaning, one is required to seek its illocutionary force, as it would be deemed inappropriate for a speaker to state the obvious. Thus, the interpreter (e.g. addressee) would either reflect upon

the statement as fitting into a larger context (act), perhaps inquiring: "So what?" (a request for specification of the relevant context), or dismiss the utterance as coming from someone without the status (sufficient agency) to provide illocutionary force to the statement, or dismiss the utterance as a non-sequitur, fitting into no intelligible context (an unlikely case).

Some interpretation strategies might suggest that: the scene (e.g. a funeral, or a second wedding) traditionally calls for another manner of dress, or an agent (the addresser) is aware of some food being served or some task to be performed which may potentially soil the white garment. In addition, the *purpose* of the statement would be sought. Was it a caveat, or an attempt to embarrass? The addresser or agent's role in the scene (age, history between addresser-addressee) may limit his or her *agency*. The same statement might carry varying degrees of weight uttered by agents deemed to have different degrees or claims on agency, e.g. a superior or colleague, an adult or child. In this view of agency, Davidson's notion of "passing theory" may also be a feature of the background knowledge of agents. The same communicative event will be interpreted differently by different individuals in accordance with the agency that their background knowledge affords them. Given the example of an adult and a child watching a television program such as *The Simpsons*. The capacity of each to recognize metaphor, irony, self reference, for example, would be a feature of their background knowledge. There may be a higher degree of continuity between the adult and child, on the

level of narrative interpretation than on the level of satire, for example.

Shared experience between agents may offer shared but exclusive gain of self-knowledge and play a role in altercasting. Two individuals can "make fun" at the expense of another on whom the sarcasm may be lost. Again, this is a feature of learned performance codes and norms. This feature of altercasting can be demonstrated in counterpoint as well. The performance can be sabotaged by what might be called "hostile disinterest." Employees or students or children, for example, can manage not to "clue in" to an intended communicative event when they do not feel they have a vested interest in its successful enactment (say of a directive). Thus, communication is collaborative work. The dramaturgical approach recognizes the role of individual agents to play their roles in an interaction.

Mediated altercasting

Michael Schrage, an MIT researcher in technology and corporate culture, has a vision of communications in the increasingly digital world which echoes dramaturgical notions of performance and altercasting. In *No More Teams*, Schrage (1995) anticipates a society whose technological complexity poses certain challenges to the notion of teamwork which, in its traditional view, implies a clear rank and file division of labour. Schrage's argument which is in part a critique of media theory, stems from what he sees as a new (or an emerging) epoch in the development of

media technologies, one that fosters "collaboration" rather than "teams":

Media environments can indeed be collaborative environments that spark fundamental changes in science, the arts, and technology. As prescient as McLuhan may have been, he could not have foreseen the emergence of a new generation of collaborative media precisely because of his own perceptual biases about what media do.⁴³⁸

In Schrage's new epoch, "we use media technology to share an experience rather than to create a shared experience."⁴³⁹ He cites John Chris Jones of Softechnica in stressing in the new media environment: "The context, not the boss, has to become the manager of what is done and how."⁴⁴⁰

Schrage places emphasis on a dialectic of collaboration with numerous examples of famous collaborators in conflict, the premise being that healthy debate fosters clarification. In this regard, he takes the position that, "collaboration is a relationship with a dynamic fundamentally different from ordinary communication."⁴⁴¹ What is missing in Schrage's research is an analysis of the ways in which collaboration, particularly as it relates to new media situations, is like everyday communication and ways in which it is not.⁴⁴² As our communications become increasingly digital,

⁴³⁸ *Ibid.* p. 24-25.

⁴³⁹ *Ibid.* p. 23.

⁴⁴⁰ *Ibid.* p. 26.

⁴⁴¹ *Ibid.* p. 34.

⁴⁴² What is meant by collaboration needs more clarity. On one page (p. 40) Schrage elaborates on a dialogue between Brague and Picasso and how their mutual critique pushed them create at an otherwise higher standard. On another page (p. 42) he writes that "the technological collaboration between Microsoft and Intel has made these two companies the dominant firms in the industry." Surely, a different dynamic obtains between the context of two individuals evaluating each other's work and the complex of contexts in which

increasing invested in the complexity the next layer of institutional facts that virtuality represents,⁴⁴³ it becomes correspondingly important, as Schrage suggests, to address the ways in which the "interaction order," and the "act/scene ratio" of everyday communications are impacted. In addition, it is important not to become so focused on the superficial aspects of mediated interactions that fundamental elements such as agency are overlooked.

two multi-national corporations enjoy world supremacy in software and microchip production. Moreover, it is unclear that the partnership between Microsoft and Intel represents the dialectical character of collaboration that Schrage elsewhere stresses.

⁴⁴³ Critics of modern communication technologies have decried the assault to language that is wrought in the "virtual reality" of cyberspace, suggesting that the further the multiplication of media takes us from language the more abuse it undergoes. (See Birkherts, S. in "What are we doing on-line." Harpers. Aug. 1995. p. 41.) A closer examination of Jakobson's inventory of even a preliterate language users' competencies tends to make the notion of an "unadulterated" language facile. To appreciate Jakobson's inventory fully, one would have to acknowledge that before and while language is influenced by what have traditionally been called media, (e.g. writing, printing, broadcast media or Internet) it is both girded and bound up within the network of social practices and social identities. In face-to-face communication, even in cultures uncomplicated by the stability of print or electronic modes of disseminating information, communication is still a process of an on-going negotiation (i.e. the application of passing theories) of a complex set of situational and social variables. The idea of working one's way back through the layers of media to an unadulterated language or to a point when language had reached its evolutionary zenith rests upon the contradictory notions that language should evolve and at the same time be non-adaptive or perhaps more alarmingly that language has some viability outside of its social use.

Chapter 6

The virtual stage

In the last two chapters, play and dramaturgy is introduced in order to provide a perspective on contemporary communications which emphasizes certain fundamental human capacities and modes of interaction. In the case of play, the emphasis is on the capacity for symbolic transformation, that is, for engaging in the dynamic creation of flexible and provisional symbolic structures and symbolic realities. These symbolic structures are in effect "virtual" entities, both because they exist in the ethereality of the imagination, and because they have the capacity of "becoming." Through their currency, through their routinely and habitually being put into play, these symbols and symbolic realities are socially reified. Moreover, through play with and within these symbolic realities, one's symbolic self is realized.

In the case of dramaturgy, the emphasis is on conventional notions of situation, performance and appropriate roles for oneself and for others. These can be seen as central features of language and culture, and as part of the institutional fabric of social reality. However, an overlap between the areas of play and dramaturgy should be apparent. Dramaturgical interaction is also a highly dynamic process, often built upon tentative and thus equally playful or provisional structures of situation and setting, of appropriate roles, or the range of appropriate roles playable in a given setting. Moreover, dramatic interaction can

be equally consequential, our social reality and identity, in effect, defined in terms of it.

The meme or metaphor of "virtual reality" or "virtuality" which pervades discussions of contemporary media and contemporary media situations may have less to do with immersive hardware and sensitive software, and actually reflect a growing tacit cultural awareness or appreciation of the extent to which social "reality" is and always has been "virtual." In this chapter, I will discuss what I am calling the "virtual stage" both to reflect the appreciation of virtuality at this point in history and to reflect the extent to which the contemporary media situation is still very much rooted in dramaturgical conventions with their concomitant models of setting, self, agency and altercasting.

Interface value

Sherry Turkle, a clinical psychologist and sociologist of science at MIT, has been immersed in the rarefied atmosphere of that institutions's media and artificial intelligence discourses⁴⁴⁴ and has monitored their evolution. From her vantage point, Turkle feels that there has been a shift in these discourses over the past twenty years from a modernist perspective in which the focus was on calculation to a postmodernist perspective in which an

⁴⁴⁴ Turkle who, once immersed in post '68 Parisian post-structuralist politics, has lived and studied in Paris in the 60s and 70s and has written on Jacques Lacan's psychoanalytic theory. She notes that after the failed student revolt of 1968, Foucault and Lacan became French intellectual heroes. (Turkle, 1995, p. 272) The influence of the work of these post-structuralists is also evident Turkle's analysis of technologies.

emphasis is placed on simulation. She suggests that this shift in attitudes about computers may reflect a larger cultural shift in which modernist attempts to look for explanations of the inner workings of things have been supplanted by a postmodernist satisfaction with surfaces and simulations.⁴⁴⁵ She suggests, for example, that in the context of postmodernism, the superficial, or *prima facie* criteria of the Turing test (the computer's ability to fool an interactant into thinking it is human), becomes more compelling than it once was.⁴⁴⁶

The viability of AI, in Turkle's view, has evolved from theoretical matter to a pragmatic one. Programs which act as stand-in therapists such as Eliza, an experiment of Joseph Weizenbaum in the 60s, or Depression 2.0, a more commonly available expert system, created by Kenneth Colby, programmed to simulate responses given by a human psychotherapist, often pass the Turing test. Turkle contends the new pragmatism toward such *prima facie* computer psychotherapy has to do with utility. Depression 2.0's creator argues that "cost, convenience and constancy" make such expert systems a viable alternative to their human counterparts, adding that "computers don't have family problems, money problems, commit sexual indiscretions, or have a more interesting case coming up."⁴⁴⁷ Turkle's informal surveys reveal an increasing acceptance of the viability of computer

⁴⁴⁵ Turkle. (1995). p. 42. Throughout this work, Turkle uses the term postmodernist rather than post-structuralist, suggesting that the former is an extension of the latter. (Turkle, S. 1995, p. 15)

⁴⁴⁶ The Turing test is a proposition seen by many as refuted by Searle. See Turkle (1995). pp. 85-87.

⁴⁴⁷ *Ibid.* p. 107.

psychotherapists. She outlines the case of one individual who in spite of several interactions with Depression 2.0 which would be unconvincing to the objective witness, found the overall experience to be helpful.

Social interactions with computers like those with humans involve a degree of suspension of disbelief, allowing the computer to play the role of expert. In this regard, such expert systems, are no less compelling than self-help books or popular culture "experts," such as Anthony Robbins who mass market "expert knowledge" garnered from having digested hundreds of other experts' knowledge. Certainly there is no end to testimonials of the effectiveness of this sort of therapy. Having the capacity to fine-tune such expert knowledge to the needs of an individual user can only be seen as an innovation.

Another superficial argument for AI is illustrated by intelligent agents and "bots" which are becoming commonplace features of on-line communications. Intelligent agents, or "software surrogates" as William Mitchell calls them,⁴⁴⁸ can be programmed to perform a number of on-line tasks (such as sorting e-mail or retrieving news) for their creators and other users. Similarly, "bots" (derived from robots) are artificial intelligences found in MUDs, sometimes left behind as stand-ins for MUD regulars to interact while they are engaged in real-world tasks. Bots can act as intelligent butlers for their "real life" counterparts, paging them when needed, or interacting in programmed ways with other MUD participants.

⁴⁴⁸ Mitchell, W. (1995), p. 13.

One bot, Julia, created by Michael Maudlin, is regularly taken by other players of LamdaMOO to be a human participant.⁴⁴⁹ Patti Maes, a researcher at MIT, considers her on-line agents to be "organism made of computer code."⁴⁵⁰ Maes's agents learn through experience and positive feedback. The ones that perform best are chosen to produce offspring, creating even more effective agents.

Intelligent agents are designed to collaborate with humans as well as other machine agents. In the culture of MIT, there has even been anticipatory lore of "double agents," bots who are designed to pretend to be loyal to their creator while reporting to another user or machine agent.⁴⁵¹ Turkle argues that the ability of such entities to pass the Turing test (to be convincing stand-ins), along with the confusion created by fragmented and blurred identities of users of MUDs and MOOs, points to a cultural paradigm shift in the way that we understand simulation, artificial intelligence and identity. Resistance to such notions she compares to resistance to other great scientific upheavals offered by Copernicus, Freud and Darwin. She underscores the many questions that the current paradigm shift will raise:

Once we take virtuality seriously as a way of life, we need a new language for talking about the simplest things. Each individual must ask: What is the nature of my relationships? What are the limits of my responsibility? And even more basic: Who and what am I? What is the connection between my physical and virtual bodies? And is it different in different cyberspaces? These questions are framed to interrogate an individual, but with minor modifications they are equally central to thinking about community. What is the

⁴⁴⁹ See Turkle, S. (1995), pp. 88-92.

⁴⁵⁰ *Ibid.* p. 98.

⁴⁵¹ *Ibid.* p. 100.

nature of our social ties? What kind of accountability do we have for our actions in real life and in cyberspace? What kind of society or societies are we creating, both on and off the screen?

Turkle raises important questions about the impact of CMCs and "virtuality" on cultural institutions such as notions of self and community. The language she finds most compelling to discuss these issues is the language of post-structuralism, with its vocabulary of "fragmented identity," "decentered subjectivity" and "non-linear narrative." This language, however, has no vocabulary for discussing human agency. The implications of "virtuality" which Turkle raises can also be discussed in terms of shifts in the act/scene ratio (Burke, 1945) and a concomitant disruption of the "interaction order" (Goffman, 1959). "Face value" identity, whether in relation to intelligences which convince or humans with a "virtual" mask of MUD is contingent on a human actor with the agency to be altercast in the virtual scene.

Dramatic Interface

As discussed in chapter 2, hypertext has become a mascot of post-structuralism and theories of textuality which challenge linear narrative and unique authorship. Moreover, notions of decentering and fragmentation, it was suggested, can be generalized to a broader set of CMCs (Bolter, 1990). Brenda Laurel's theories of computer interface, however, present an alternative means of framing CMCs which views linear narrative as a central feature of even mundane computer applications.

In *Computers as Theatre*, Laurel outlines a theory of computer interface that takes the intuitive step away from textual metaphor of screen (text) and user (reader) toward the more immersive metaphor that theatre offers. Her primary interest being interface design, Laurel has greatly advanced the view that computer applications can best be understood in terms of dramatistic theory.

Laurel's dramatistic model of computer interface is built upon Aristotle's *Poetics* emphasizing catharsis as the *raison d'être* of dramatic enactment. Laurel considers both Aristotle's theory of catharsis, that drama provides release of emotion which is normally a burden on the human capacity of reason, as well as the Brechtian view that catharsis can be a political instrument, drama potentially stimulating an individual's intellectual capacity and motivating action. Laurel suggests that the representations of theatre "live somewhere between imagination and reality, serving as a conductor, amplifier, clarifier and motivator"⁴⁵² and that the computer can best be conceived similarly:

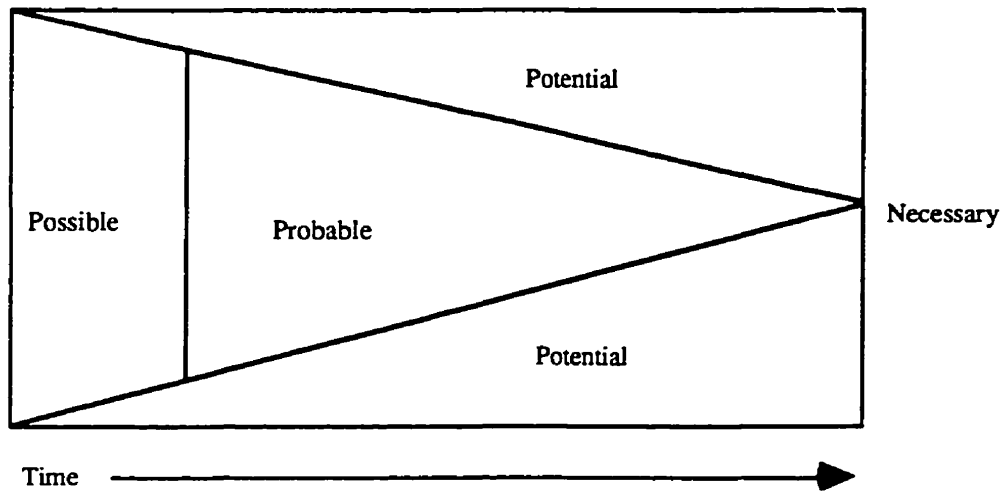
[C]omputer based representations work in fundamentally the same way: a person participates in a representation which is not the same as real life but that has real life effects or consequences.⁴⁵³

A human-computer interaction is likened to a dramatistic enactment in which an event unfolds from a state of uncertainty to a state of discovered outcomes. Like the plot of a drama in which

⁴⁵² Laurel, B. (1993), p. 31.

⁴⁵³ *Ibid.*

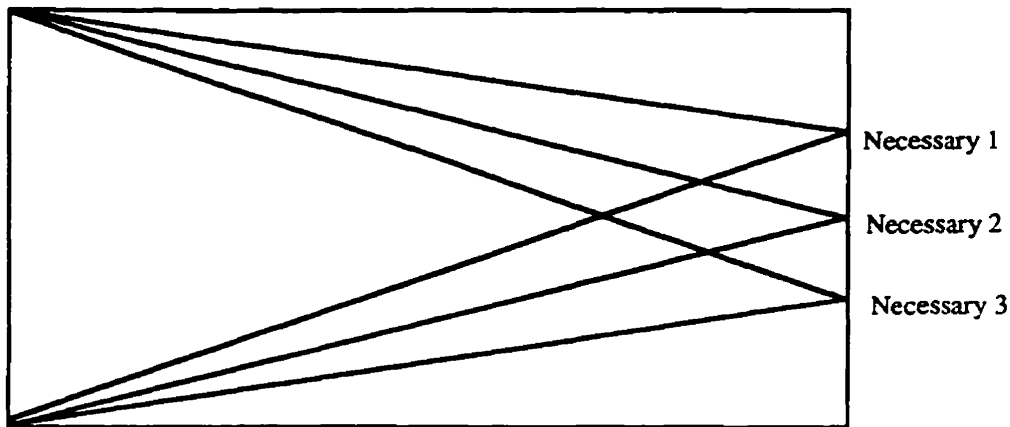
there is progression through increasing levels of revelation, the use of an application such as database program or word processor can be seen as allowing the user to engage a task in a revelatory progression. Laurel illustrates the process through the "flying wedge":



The "flying wedge." A plot progression from the possible to the probable to the necessary

Fig. 1 (Laurel, 1993, p.70)

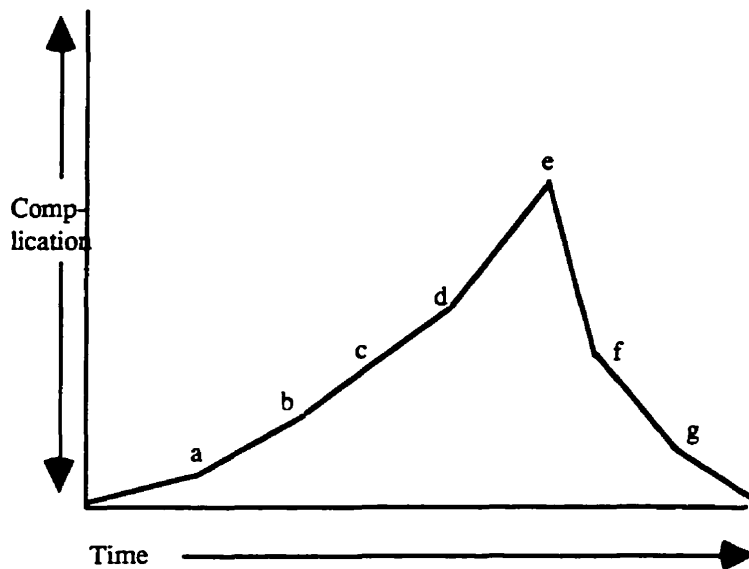
However, the flying wedge is a conception designed for the spectacle, an enactment in which the spectator is passive. Thus, she modifies the model to reflect "interactive" applications in which the user can effect a number of possible outcomes.



(Laurel, 1993, p. 72)

Laurel applies a second dramatistic model to human-computer interaction, using a modified version of the Freytag triangle⁴⁵⁴ which depicts rising and falling action (i.e. introduction, rise, climax, fall and catastrophe) to represent the use of such mundane CMCs as the use of a spreadsheet program. The example of a spreadsheet's use in trying to determine whether one could afford to buy a new house is given: a) Entering in all relevant numerical data, b) discovering how much the new house will cost (e.g. \$1,000 more per month), c) considering tax benefits, utilities costs etc., d) calculating trade-offs (e.g. foregoing a new car), e) making the decision that it is affordable, f) finalizing the document, g) saving the file and exiting the program.

⁴⁵⁴ Laurel elaborates the simple Freytag triangle by correlating rise and fall as degrees of complication and significance in events in an enactment. Actions are assigned values according to how they affect plot progression. Complication is assessed a + or - value and significance is a quantitative measurement.



(Laurel, 1993, pp. 86-89)

One insight which can be drawn from Laurel's formulations is that, while communications are reportedly more fragmented in the digital world,⁴⁵⁵ and the linearity of narrative is challenged in the world of hypermediation,⁴⁵⁶ the conjectural model still holds. The linearity suggested by the drive or attraction toward a progression from possibility toward necessity, and the integrity suggested by establishing a theme or actable idea and seeing it through to its resolution still obtains in the reportedly fragmented world of CMCs.

Another insight that can be gained from Laurel's dramaturgical perspective is the view that even mundane virtual endeavours can be treated as dramatic enactments. CMCs like other everyday enactments require a suspension of disbelief. On the

⁴⁵⁵ Mitchell, W. (1995). p. 12.

⁴⁵⁶ Landow, G. (1992), p. 25.

simplest level, this leap of faith involves a belief in the necessity of the technology.⁴⁵⁷ The view that human beings invest themselves in computer representations invokes Thomas's dictum: "If men define situations as real, they are real in their consequences."⁴⁵⁸

Toward transactional games

While associated with "play," in its most literal sense of "not serious," the videogame⁴⁵⁹ is a technology whose consequences or cultural impact are being most deeply felt. First as a commodity, as young videogame designers in Japan are increasingly becoming corporate leaders, the videogame may be seen as instrumental in a shift in Japan's *international* and, more importantly, *intranational* corporate identity, traditional structures of education and seniority devalued in the process.⁴⁶⁰

Secondly, as videogames become more culturally embedded, affecting "literacy" in a manner which invokes Krueger's notions of an experience society, their utility will be revealed. To wit, videogames are already being taken more seriously in some quarters. On Aug 24, 1996, for example, Jacques Villeneuve won

⁴⁵⁷ As one journalist who had lived through the transition from analogue to digital media quipped, he did not remember spending week-ends at Smith Corona conferences. Nor could he remember wasting half a day trying to get his typewriter to print.

⁴⁵⁸ Thomas and Thomas, (1928), p.572.

⁴⁵⁹ In this section the term "videogame" is taken to stand for games designed for arcades, for dedicated game systems which connect to televisions in both stand alone and networked systems, as well as stand alone and networked computer games.

⁴⁶⁰ "Game designers shaking up Japan Inc.'s culture." In *The Gazette*. Aug. 16, 1996. D7.

the pole position on the Belgian Grand Prix circuit. He attributed his success to hours of practice on a simulation of the circuit on a Grand Prix computer game.⁴⁶¹ Other evidence suggests that such auto racing simulations are taken so seriously that they represent a new-found need to aggressively promote "reality." The Russell Racing School and The Bob Bondurant School of High Performance attest to this perceived need by stressing in their advertisements that their classes are given in "real" cars on "real" race courses, not simulations or videogames.⁴⁶²

While these videogame simulations anticipate a blurring of "play" and "non-play" videogame simulation, the technology remains in its infancy. The exponential increase in processor speeds has improved image resolution and the speed with which the computer can manipulate digital objects, but advances in interactivity have not kept pace with aesthetic improvements. In 1984, Turkle in describing the "controls" of the game Asteroids noted: "There are separate control buttons for steering, accelerating, and decelerating the spaceship and for firing its rocket guns..."⁴⁶³ More than ten years later, Chris Crawford, game designer and editor of *Interactive Entertainment Design*, describes a similar interface design as a limitation:

The algorithms [phrases of programming language] used for interaction in games right now are ridiculously primitive... It is the same problem with inputs--the inputs to the player are really stupid in terms of the language of expression... up, down, right, left or fire. And then there are jump, duck, or a few others. A very simple question a very good designer can ask is: What does a player get to do? Don't

⁴⁶¹ "Villeneuve takes pole for Belgian GP." *The Gazette*. Aug. 25, 1996. B1.

⁴⁶² *The Edge Trouble and Attitude*. No. 3.

⁴⁶³ Turkle, S. (1984), p. 64.

tell me what he hears, don't tell me what he sees—those are passive things. Those are things that happen to him. Tell me what he does! What are the verbs available to him.⁴⁶⁴

Despite its limitations, Turkle anticipated the potential of the medium, pointing out that videogame users are mastering patterns of interaction within "rule-governed worlds" as they confront the "rules of simulation."⁴⁶⁵ When one considers the constraints on creativity of the current interactive syntax, however, it is perhaps not surprising that the videogame is perceived by some as a marginally more interactive medium than television. As game designer and screenwriter, Mike Backes, suggests the videogame industry is waiting for its *Great Train Robbery*,⁴⁶⁶ a game which will provide a prototype which exploits the potential of the new medium.

Considering the videogame according to the criteria of vividness, interactivity and transactionality, introduced in chapter one, the videogame has seen marked improvement along the vividness dimension. Increasing processor speeds have been exploited to render higher resolution graphics in "real-time" play mode, and CD-ROM storage systems have allowed for live action and photo-real still and video inserts into real-time play. In contrast, processor speeds have lent themselves to almost no improvement along the interactivity dimension. In addition, as suggested in chapter one, there may be much to be gained by

⁴⁶⁴ "The way games ought to be." *Next generation: Leading edge computer and video games*. Vol 1 (12), Dec. 1995.

⁴⁶⁵ Turkle, S. (1984), p. 66.

⁴⁶⁶ "Shape shifter" *Wired*, 3.04. Apr. 1995. p. 94.

considering the videogame (and other CMCs) in relation to a transactionality dimension.

If the player's limited functional vocabulary in current videogames were married with the functional vocabulary of MUDs (e.g. say, emote, whisper, and page) interactions would not merely double but would expand geometrically. Players would not only begin to use the videogame "constructively," creating experimental worlds, but would also be able to negotiate the value and meaning of those worlds as well as to develop interpersonal relationships within them. Crawford, for example, feels that the real potential of the videogame can be realized through the concept of multi-player supergames. Crawford, who has worked for three and a half years on the problem of automating human interaction with artificial characters in computer games, has come to understand the difficulty of providing characters with context, the detailed history each character needs. This experience has made him realize that, "when you use the computer to connect humans rather than to simulate them, you save lots of resources."⁴⁶⁷

Crawford sees several obstacles to the realization of global-multi-user supergames. These include the potential for player dropout, the inability to control the quality of interpersonal interaction, the timing of interactions across time zones and the maintenance of dramatic content. These obstacles⁴⁶⁸ to the transactionally focused videogame trajectory turn out to be considerations which invite the dramaturgical perspective. The

⁴⁶⁷ "The Way games ought to be."

⁴⁶⁸ Such obstacles are called reverse salients in social construction of technology literature (Hughes, 1989).

timing of interactions—specifically across time zones can be seen as the inability to establish a virtual play-action area. The contingency of player dropout, the control of the quality of interpersonal interactions and the maintenance of dramatic content (ensuring that interactants will not over or under dramatize for others' tastes) are all aspects of the capacity for altercasting. They are coincidentally central prerequisites of community building.

In flow

As with hypertext and other CMCs, the scholarly study of the videogame has been greatly influenced by the post-structuralist trend. Many studies (e.g. Kinder, 1991, Provenzo, 1991, Fuller and Jenkins, 1995) tend to treat the videogame merely as a text for examination and critique. Fuller and Jenkins (1995), for example, explore the Nintendo's Mario Bros. from the perspective of post-colonialist narratives, suggesting that, in such games

most of the criteria by which we might judge a classical constructed narrative fall by the wayside when we look at these games as storytelling systems. In Nintendo's narratives, characters play a minimal role, displaying traits that are largely capacities for action: fighting skills, modes of transportation, pre-established goals... the movement in space that the rescue plot seems to motivate is itself the point, the topic and the goal and this shift in emphasis from narrativity to geography produces features that make Nintendo and New World narratives in some ways strikingly similar to each other.⁴⁶⁹

⁴⁶⁹ Freidman, T. (1995). pp. 58, 61.

For the reasons that Fuller and Jenkins give, videogame designers, particularly those of graphically flat, side-scrolling games like Mario Bros.⁴⁷⁰ have tended not to emphasize narrative in its traditional sense. It is quite possible to play Mario Bros, (or at least it was before a companion Hollywood film was released), having no idea about a rescue plot. The dynamic of videogame narratives would more suitably be framed in the manner that Laurel suggests, as a progression through increasing levels of revelation. Videogames have can be usefully studied from another important perspective, in terms of players' mastery of objects and object-events. What one learns from playing a videogame is an important research consideration. This can arguably be better understood from an immersive dramatistic perspective than from the textualist one.

Several videogame researchers have taken such an approach. Ted Friedman (1995), for example, is critical of textual approaches to the videogame, particularly the hypertext model of interactivity, suggesting it "traps software theory in traditional notions of textuality," the hypertext user simply navigating through a network of choices.⁴⁷¹ In contradistinction to Bolter's critique of the videogame, in which it is argued that videogame play involves mere passive perception,⁴⁷² Friedman argues that learning how to play a videogame involves "learning a distinct semiotic structure." A learning curve is involved, as every new

⁴⁷⁰ Sigeru Miyamoto the creator of Mario Bros. has recently released a 3D version for Nintendo's 64 bit Ultra 64. However, traditional narrative elements are equally marginal in that version.

⁴⁷¹ Friedman, T. (1995), p. 74.

⁴⁷² See Chapter 2 above.

game is "its own world, its own semiotic system." However, "this language, like that of classical Hollywood narrative, carries over from one text to the next."

Freidman extending the classical Hollywood narrative metaphor considers two different videogame genres: the "interactive cinema" genre outlined above, and the "software toy" genre which is best illustrated by the game *SimCity*, a simulation game in which the player orchestrates the building of a city and responds to different crises (e.g economic or ecological disaster) that the simulation poses. Freidman notes that players can become totally absorbed or lost in these games through an identification with objects and events in them. There is "a constant shifting of positions of identification, depending on whether one is buying land, organizing the police force, paving the roads, or whatever."⁴⁷³

David Myers (1991) observes that one's immersion in games such as *SimCity* can easily lead to distortion of subjective time. Players often find themselves spending eight hours or more at a single sitting.⁴⁷⁴ Myers (1990, 1992) has evaluated this subjective compression of time in relation to the "flow" experience elaborated by Mihaly Csikszentmihalyi (1975, 1981, 1988).⁴⁷⁵ Through this sort of analysis, videogames, in their capacity to provide escape through "flow," particularly reputedly "addictive" games such as *Simcity*, may provide important insights into computer mediated transactionality and identity constitution.

⁴⁷³ Freidman, T. (1995), p. 84.

⁴⁷⁴ Meyers, D. (1991). p 343.

⁴⁷⁵ Particularly Csikszentmihalyi, M. (1975).

Csikszentmihalyi describes flow as an autotelic (self-directed) state in which a person experiences a "unified flowing from one moment to the next, in which he is in control of his actions, and in which there is little distinction between self and environment, between stimulus and response, or between past, present, and future."⁴⁷⁶

Flow is seen as arising from the proper balance of boredom and anxiety, or as the proper balance between "the challenges perceived in a given situation and the skills a person brings to it."⁴⁷⁷ Meyers (1992) in studying the subjective compression of time experienced by computer game players, concurs that the proper ratio of skill to challenge elicits subjective reports of a positive computer gaming experience. However, he argues that "boredom" does not always ensue when skill surpasses challenge. Often players report a trance-like or meditative experience from the repetitious playing of a game at a level of challenge well below their skill level.⁴⁷⁸

Meyers' interest in flow and the videogame is actually an evaluation or critique of the attribution of subjective compression of time in videogame play to the flow experience.⁴⁷⁹ Evaluating the experiences of players of *Civilization*,⁴⁸⁰ Meyers notes that advancement in the game involves the capacity to

⁴⁷⁶ Csikszentmihalyi, M. (1988). p. 36. Csikszentmihalyi calls flow an anthropologically "native" category. That is, it is one used by informants to describe their own experiences of activities such as chess, rock climbing and basketball.

⁴⁷⁷ Csikszentmihalyi, M (1988). p. 30.

⁴⁷⁸ Meyers, D. (1992), p. 444.

⁴⁷⁹ *Ibid.* p. 441.

⁴⁸⁰ *Civilization* is a history theme strategy game created by Sid Meier and Bruce Shelley in 1991.

resolve the game's different oppositions. (Players must determine, for example, whether communism or democracy is better suited to given historical situations.) With experience, players are able to contextualize, "move from consideration of matters involving single units to consideration of matters involving the relationship between multiple units."⁴⁸¹ Meyers attributes the subjective compression of time to the nesting of symbolic contextualizations in which sets of object-events are chunked and embedded into larger object-events. He suggests that experience has the effect of contextualizing and thereby compressing the subjective passage of time.

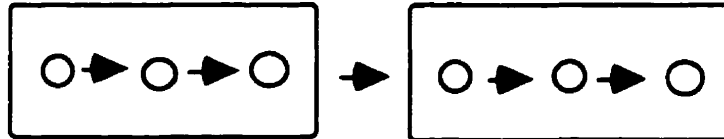
This process can be illustrated with the more familiar videogame Mario Bros. As the initiate scrolls left to right through the game, each object and interaction with it (exploding an object or landing on an object, etc.) is perceived as a separate object-event. As the player gains experience, repetitious encounters with sets of such object-events are contextualized or chunked together, (first sequence of first level, second sequence, etc.). Subjective compression of time occurs as a player nests sets of object events. That is, instead of attending to each object and object-event separately, the player perceives objects and object-events in sets or clusters, illustrated by the diagram below:

⁴⁸¹ Meyer, D. (1992), p. 450.



Game sequence:

○ = object-event; ➡ subjective passage of time



Contextualized sequence (only middle arrow
perceived)

Adapted from Meyers (1992, pp. 449,451)

While Csikszentmihalyi's account of the subjective compression of time (as well as loss of one's sense of self) are related to the extreme attentional demands of flow inducing activities, Meyers' explanations for subjective compression of time have to do with the temporal demands of playing out symbolic enactments.

Subjective reports of other virtual reality experiences seem to favour Csikszentmihalyi's view. In *Char Davies Osmose*, for example, participants have reported a distinct temporal compression: the twenty minutes spent is perceived by many as lasting roughly three minutes.⁴⁸² At the Musée d'art contemporain in Montréal, *Osmose* was both projected onto a screen with stereo video projectors (to give the sense of three dimensions), as well as offered as an immersive experience with headmounted display and

⁴⁸² Personal experience and personal communication with George Mauro, a Soft Images representative at the Musée d'art contemporain.

tracking devices.⁴⁸³ Viewing the VR traveler's journey projected onto a screen, participants did not report the subjective compression of time. Indeed, in response to the non-interactive format, viewers seemed to perceive time as dragging, often not staying for the entire experience; whereas, those who participated in *Osmose* in the VR immersion usually reported that the experience was too short and wished it to continue.

In *Osmose*, subjective compression of time can be accounted for by Csikszentmihalyi's suggestion of increased attentional demands in interaction; whereas it cannot be accounted for by Meyers' suggested symbolic contextualization, as repeated experience and habituation are not factors. However, Meyer's view may be seen as contributing to Csikszentmihalyi's.

If Meyers' model of symbolic contextualization is considered from the perspective that, with experience, certain aspects of interaction (objects, object relations and object-events) become automatized, it points to elements of flow which could be below the level of conscious attention, no longer reliant upon attentional control. Csikszentmihalyi considered such a proposition suggesting that:

the organization of household artifacts also represents a structured and structuring process of attention at a more unconscious level. Indeed, most of the vitality of a culture seems to reside in its ability to provide a vast reservoir of ideas and feelings that exist as unquestioned assumptions and which allow the individual to learn complex information with relatively little self-consciousness or direct attention.⁴⁸⁴

⁴⁸³ See chapter 3, p. 123 for fully description.

⁴⁸⁴ Csikszentmihalyi (1988), p. 185. This perspective may inform the discussion raised in the last chapter on the level of immersion in one's role (Hare, 1988, Sarbin, 1982) and address fuzzy notions of the "unconscious." One's immersion in a role can be understood to some degree as a feature of

Perhaps then, flow should not be so closely associated with "attention." Indeed, the concept of "intentionality" as it is discussed by Searle (1980, 1984, 1994, 1995) might be a better index of flow. Intentionality, referring to "beliefs, desires, hopes, fears, love, hate, lust, disgust, shame, pride, irritation, amusement and all other mental states (whether conscious or unconscious)"⁴⁸⁵ underscores the complexity of "psychic energy" both attentional and non-attentional with which cherished and un-cherished (even abhorrent) objects and object-events are imbued. At the same time it maintains the linkage between the psychic energy attributed to objects and others and the agent who imparts that psychic energy.

Flow can be understood from the vantagepoint of *intrapersonal* and *interpersonal* enactment. In addition to being a useful tool for understanding personal growth and identity constitution, flow can be a useful tool for examining community building. Moreover, paralleling the view of transactionality as a continuum from brute to institutional realities, Csikszentmihalyi's discussions of the relationship between flow and culture suggest issues about subjectivity which are both biological and cultural:

The arguments in favor of the universality of flow is that the specific content of the activities producing flow vary from culture to culture; in the West, flow activities might

automatized routines. However, in this view flow would be seen, initially, as an escape from everyday reality, but potentially as an entrapment in new habits or modes of engagement. What begins as a diversion, in Csikszentmihalyi's flow model, can with dedicated practice become an "investment" in automatized objects, object events and object relations. In this respect "flow" speaks to broader issues of consciousness and identity.

⁴⁸⁵ Searle, (1984), p. 16.

indeed be on the whole more active, competitive and controlling than in other parts of the world. But the dynamics of the experience that make enjoyment possible are presumably the same regardless of culture.⁴⁸⁶

In this regard, two types of flow can be outlined: being "in the flow" and being "in flow with," the former suggesting a subjective experience of peak performance, the latter suggesting a subjective sense of being "clued in" to the normalized character of a given socially constructed situation or dramatic enactment.

For Csikszentmihalyi, objects "attain their significance through psychic activities or transactions."⁴⁸⁷ Personal and cultural meanings are derived from individual or collective attention to specific objects, object-relations and object-events. In addition to its being a useful notion in videogame studies, flow theory is enjoying new found "attention" from marketing specialists interested in the design of Web pages,⁴⁸⁸ flow being relevant to the navigational characteristics of the Web page and their attentional dynamic. For marketing specialists, understanding the "what," "how" and "how much" of potential consumers' attention is a central concern. For cultural theorists, the transactional aspect of flow also raises interesting questions about identity.

The transactional sense of culture that comes out of the flow model is akin to William Stephenson's view of culture being an

⁴⁸⁶ *Ibid.* p. 10.

⁴⁸⁷ *Ibid.* p 179.

⁴⁸⁸ For example Vanderbilt University's Donna Hoffman and Thomas Novak. See "Go with the flow>" *Wired* 4.09, Sept. 1996, p. 160.

aggregate of individuals' "self-referent opinions, discretely regarded, made in relation to events or situations."⁴⁸⁹ Such a collective or transitory view of individual and cultural values and meanings on the surface seems consistent with post-structural theory. Decentering of subjective and cultural meanings is a small conceptual step to take from here. Deleuze's formulation of "nomadic centers" is invoked, as Edward Said (1985) paraphrases it: "Knowledge is intelligible in terms of nomadic centers, provisional structures that are never permanent, always straying from one set of information to another."⁴⁹⁰

Such a conceptual step is seductive, particularly in reference to discursive formulations of virtuality and post-structuralist notions of hypertext as the *manifestatio* of decentering and fragmentation. The notion of a "homepage" in the hypertext environment of the Web calls to mind Csikszentmihalyi's semiotics of the domestic environment.⁴⁹¹ In Csikszentmihalyi's formulations of identity and transactions with *domestic* objects, he suggests that "the organization of the household can be seen as a pattern of attention and inattention and intention made concrete in the artifacts and the ambiance they create."⁴⁹² The homepage can also be seen as representing a person's self-referent opinions and interests through the objects included in it and the links made to others. In these links to other pages, including the homepages of others, which in turn represent other self-referent

⁴⁸⁹ Stephenson, W. (1966), p. 14.

⁴⁹⁰ Said, E. (1985), p. 376.

⁴⁹¹ Csikszentmihalyi, M. (1988). p. 185.

⁴⁹² *Ibid.* p. 184.

identities, it is not difficult to formulate a recursion of self-reference and a concomitant difficulty in establishing the boundaries between individuals' identities. However, this can only be done when one loses sight of the agency implied in the act of creating a homepage. Each page stands for an agent's efforts at self-representation. The world is the stage and the homepage stands for its creator's attempt to be an actor on it. Rather than representing someone's loss of self in a recursive process of disconnected identities, the homepage is a paradigm case of its creator attempting to be recognized as a unique individual, saying "Hey this is me!" This spirit is aptly expressed by the creator of one the most popular personal homepages on the Web, Justin Hall:

I used to spend 6 or 8 hours a day playing computer games. That was all right but it got to be pretty bad after a while 'cause they don't give you anything back. This... like I, you know, go out on the net and I find something cool and I write a little blurb about it and I put it up and people find that blurb. And then they write back and they say, "Thank you." That was great. Like here's what I'm doing. Check this out, Justin 'cause I think you'd like this as well. And that's really exciting for me. It's back and forth. It's living.⁴⁹³

⁴⁹³ Understanding the Internet. URL: <http://www.screen.com/start>

Community dialects of virtuality

Just as contemporary media present new stages on which individuals can work out alternative identities or augment existing ones, so on-line communications offer new stages and new possibilities for community building. The transactional perspective, particularly when considered diachronically, in terms of communities whose institutional stability will vary through time, highlights the insight that on-line interactions engender communities with variably shared histories.⁴⁹⁴ Accordingly, the stabilization or "solidification" of institutional facts and objects, legitimated in the conventional languages of these communities should increase over time.

While an archeology of the virtual or potential could at best be dubious, the search for artifacts to reveal such "cultures" of the Internet is already under way. In one project, Lee-Ellen Marvin a graduate student in folklore and folklife at Pennsylvania University studied 6 different MOO communities over a period of 18 months, identifying four lexical items which she deemed to be community inventions, or at least conventions, within MOO interactions: "Spoof," for unattributed or unclaimed contributions, "Spam," for excessive communications, "Lag," for a mechanical impedance of communication, and "Lurk," for refusal to communicate.⁴⁹⁵ Marvin suggests that a normalizing, or socializing effect in on-line communications can be inferred from the use of

⁴⁹⁴ See particularly Rheingold (1993) *The Virtual community*.

⁴⁹⁵ Marvin, L. E. (1995).

these terms and the negative connotations associated with them.

She explains this socialization process and its norms as follows:

Ideal behaviour the MOOs is attributed, brief, participatory and speedy communication. Attribution allows others to respond to the appropriate source, brevity provides opportunity to respond, participation is necessary for interaction to occur, and speed increases the volume of what is communicated and thus created. So we see that the special lexicon of the MOOs is an integral part of its "virtual reality" and provides pointers to a newbie on how best to behave.⁴⁹⁶

While Marvin's study could be read as emphasizing the existence of normalizing or socializing forces in CMCs, it also shows that act/scene ratio imperatives (the appropriate behaviour in a given setting), and the agency it implies, obtain even in "virtual communities" whose ties to exterior modes of legitimation and stability are loose or non-existent. Even in MOOs which offer complete anonymity, there is an apparent drive to require the most basic of dramaturgical tenets: To be an active member of the cast.

Another study of normalizing interactions within a specific news group, rec.arts.tv.soaps (r.a.t.s. for short), shows an interesting case of how community identity in CMCs can be formed in counterpoint to "real world" community identity. Nancy Baym, a communications student at Wayne State University⁴⁹⁷ studied retellings, the specific activity in r.a.t.s. in which participants give humorous summaries of events in previously broadcast episodes of television soap operas. Retellings serve Baym to note how individuals give "close and distant readings of

⁴⁹⁶ Ibid. Conclusion.

⁴⁹⁷ Baym, N. (1995).

the soap opera, which place the participants in close relationships with one another and distance them from the soap opera's writers and producers."⁴⁹⁸ Baym's study which focuses on the dynamics of how group solidarity is built through humour underscores the necessity of altercasting, the enlistment of interactants in specified roles, particularly in the reportedly fragmented world of on-line identity building.

Alan Aycock's study of on-line identity and community building frames the study of CMCs in the language of post-structuralism, in theories of "language" and coded culture. Thus, while attempting to explore issues of identity in on-line communication, Aycock's application of Foucault's "technologies of the self" is something of a rehearsal, or a *repetition*, of the discourse of the oppressiveness of culture.

Foucault's work has been characterized as exploring what Carlo Ginzburg calls the "languages of exclusion."⁴⁹⁹ Like Giddens

⁴⁹⁸ *Ibid.*

⁴⁹⁹ While Foucault's history of expert discourses leans toward what Stephenson refers to as an emphasis on "social control." Carlo Ginzburg has sought to explore the manner in which knowledge of oneself and the world comes about through lay discourse. In *The Cheese and the Worms*, for example, Ginzburg's approach to technology is more in keeping with the vernacular use of the word. That is, he explores the individual's relationship with the technology of the book in the of the Reformation and Counter-Reformation. Ginzburg's Menocchio an Italian miller is an individual who, through a limited acquaintance with reading, develops a world-view which proves not only heretical to the inquisitor but anachronistic with the world view of any widely understood discourse community. Ginzburg explains that "a century later Menocchio probably would have been committed to an insane asylum," but that during the Counter-Reformation "the methods of exclusion were quite different." The case of social control in Menocchio's case is appears quite obvious. But like the inquisitor in Ladurie's *Montaillou*, Menocchio's inquisitor seems to have presaged Stephenson's notion of "selective convergence." He takes quite seriously the idiosyncratic cosmological transformations of an individual, an individual who interacts with, influences or is influenced by, other individuals in his community. His inquisition is as much fact finding mission, as much survey as it is persecution. And Menocchio, is an interesting character because he is a heretic, but also

who has criticized Foucault and other post-structuralists for ignoring or minimizing the role of the self-determining agent in social processes, Ginzburg notes Foucault's heavy emphasis on language as an historical construction, giving little consideration to its negotiation among users. In relation to the constitution of self, Foucault's historicizing of the languages of exclusion can be seen as an excavation of the epistemic systems and normalizing technologies through which a given self-concept is possible. In this light, Alan Aycok sees Foucault's later work, particularly the notion of "souci de soi" (the care of the self), as addressing not only the above criticisms, but also as applicable to the question of the Internet's capacity to foster self-constitution.⁵⁰⁰

In *Technologies of the self*, using the words technology and technique interchangeably,⁵⁰¹ Foucault suggests a change in direction in the focus of his work:

Perhaps I've insisted too much on the technology of domination and power. I am more and more interested in the interaction between oneself and others and in the powers of individual domination,

because he asserts himself as a player by framing a heretical cosmology out of half-read or misread texts. He reminds us that subjectivity is fundamental determinant in world view. Ginzburg, C. (1980). *The Cheese and the Worms*. pp. xvii-xviii.

⁵⁰⁰ Aycok, A (1995).

⁵⁰¹ Foucault classifies four types of technologies: 1) technologies of production, which permit us to produce transform and manipulate things, 2) technologies of sign systems, which permit us to use signs symbols meanings or signification, 3) technologies of power which determine the conduct of individuals and submit them to certain ends of domination, an objectivizing of the subject, and technologies which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies, souls, thoughts, conduct, and way of being in order to attain a state of happiness, purity, wisdom, perfection, or immortality." Martin, L. H., Gutman, H., Hutton, P. H. (1988). *Technologies of the self: a seminar with Michel Foucault*. Amherst: University of Massachusetts Press. p. 18

the history of how an individual acts upon himself,
in the technology of self.⁵⁰²

However, while Foucault's expressed interest is face-to-face interaction, the outcome of this project is a reiteration of his analysis in *The History of Sexuality* in which he explores the normalizing aspects of Catholic policies toward confession.⁵⁰³ In *Technologies of the Self*, Foucault undertakes a hermeneutics of Epicurian, Stoic and Christian techniques for self-examination and disclosure.⁵⁰⁴ He emphasizes the technique of *exomologesis*, as it is interpreted by early Christian authors, in which there is a coming to "know thyself" through self-revelation and denial, a process associated with martyrdom. Thus, in the Christian tradition of penance, there is an inherent renunciation of self:

In *exomologesis*, the penitent superimposes truth about self by violent rupture and dissociation. It is important to emphasize that this *exomologesis* is not verbal. It is symbolic, ritual, and theatrical.⁵⁰⁵

Foucault's exposition of Christian technologies of self does not consider "individual" self discovery and revelation in the manner

⁵⁰² *Ibid.* p. 19.

⁵⁰³ For example, Foucault illustrates how in the 19th ecumenical council of the Roman Catholic Church, better known as the Council of Trent, lengthy debates (1545-47, 1551-1552, 1562-1563) in Trento resulted in confessional manuals for the exorcism of the most private of thoughts, effectively "passing everything having to do with sex through the endless mill of speech." The establishment of these policies and normalized practices (or technologies) of confession Foucault sees as akin to an ontological transformation of human sexuality from the physical to a discursive domain. Foucault, M. (1978), p. 21.

⁵⁰⁴ Foucault, M. (1988), pp. 6-7.

⁵⁰⁵ *Ibid.* p. 43.

of Ginzburg's Menocchio,⁵⁰⁶ for example. Rather, once again, Foucault's excavation takes on a distopic tenor. The self as agent is disregarded. What is of interest is technologies of self-oppression, among the many sins of Catholicism and, by extension, Western culture.⁵⁰⁷

Taking a somewhat broader view of "technologies of self" than perhaps Foucault intended, Aycock takes "the Internet to represent one such technology of self."⁵⁰⁸ Examining the discourse of members posting to the USENET Newsgroup rec.games.chess, Aycock examines group participation according to the Foucauldian paradigm of "self fashioning." The news group participants are seen to exhibit 1. identity (inner substance) in terms of stating who they are in the world of chess players (e.g. Grand master (GM), level B player), 2. commitment to an appropriate chess-player attitude (deemed to be "cool," or reserved), 3. observing the routine practices of the community (e.g. exchanging facts and techniques), and 4. attempting to transform (or improve) themselves as a chess players.⁵⁰⁹

⁵⁰⁶ Ginzburg's (1980) Menocchio, a 16th century heretic who constructs a reality (a cosmology even) for himself based on a loose affiliation with the world of books is perhaps a better case from which to study "technologies of the self" as was Foucault's intention, or the Internet as a technology of the self as is Aycock's. Menocchio's use of his limited knowledge of "the cosmos" from books is akin to the "newbie" in a MUD, who is able experiment with models of the world, and consequently of self which were previously unavailable to him.

⁵⁰⁷ The irony in this should not be lost. Just as penitence, in the Christian tradition, can be seen as a renunciation of the sins of self, so archeology of the unsavory aspects of the background against which the self is constituted (in the post-structural context) represents a process of renunciation of the sins of culture. It is unclear, however, whether the cultural critic takes on the role of the penitent or that of the priest prescribing penance.

⁵⁰⁸ Aycock, A. (1995).

⁵⁰⁹ Foucault's categories are (1) identification of an individual's ethical component or substance which must be developed, (2) subjection to the ethical

Aycock suggests that participants' inner substance "discerned by the way people speak about themselves" reveals both romanticist (passionate and creative) and modernist (rationalist) strategies, and adds that Foucault's notion of "self fashioning" exemplifies two sides of a debate over the Internet being a liberating versus an oppressive force, as "fashions may be both imposed and freely chosen."⁵¹⁰ He also suggests that the exchange of facts and techniques in rec.games.chess illustrates the relevance to CMCs of the sort of semiotics Mark Poster's prescribes: "Routines or disciplines on the Internet consist of the use of "words without things," [in the case of chess, the unquestioned authority of facts in rule books] in which the words themselves become resources for self-fashioning."⁵¹¹ Aycock raises doubts about his earlier claims of the Internet fostering agency when he, with the following citation from Foucault invokes the image of the culturally-constrained soul posting to a Newsgroup:

In each sentence that you pronounce--and very precisely in the one that you are busy writing at this moment, you who have been so intent, for so many pages, on answering a question in which you felt yourself personally concerned and who are going to sign this text with your name--in every sentence there remains the nameless law, the blank indifference: 'what matter who is speaking; someone has said: what matter who is speaking'⁵¹²

rule (3) a effort to be transformed by the ethical rule, and (4) a commitment to such "care of the self." (Foucault, M., 1990, *The Use of pleasure: History of sexuality Vol 2.*, pp. 26-28)

⁵¹⁰ Aycock, A. (1995). p. 1

⁵¹¹ *Ibid.* p. 5, citing Mark Poster's comments on self-reference. (Poster, M., 1990, p. 17.)

⁵¹² Foucault, M. (1991). Politics in the study of discourse. Quoted in Aycock, A. (1995).

There are a few points in Aycock's essay which deserve special comment. First, Foucault's paradigm for "self fashioning" represents a technology or technologies which Foucault has uncovered in the Christian tradition, whereas Aycock uses it as an analytical template. The Internet might be seen more as an analogue of the Church in Foucault's analysis than as a "technology of the self" as Aycock suggests. While it seems fair to suggest that similar forces of coercion (to abide by the rules of the community) may obtain, the use of Foucault's Christian "technologies of the self" as a template or map for analysis does not seem in the spirit of these technologies uncovering. These are descriptive categories in Foucault's analysis, whereas they verge on prescriptive categories in Aycock's.

Secondly, and perhaps more relevant to issues of identity and community construction in CMCs, is Aycock's intimation that observations in rec.games.chess are representative of general community practices on the Internet. This assertion raises important questions about the influence of convergent media and the relevance of prior community traditions and practices on self and community constitution. Just as Nancy Baym's study of on-line soap opera critiques indicates the importance of building on-line community in relation to outside communities, Aycock's work shows the importance of giving serious consideration to the cross pollination that may occur between on-line and off-line communities.

The history of an institution or community, the stage of diffusion of technologies and techniques related to it, can be

seen as contributing to interpretive flexibility. As Aycock has argued convincingly elsewhere on chess,⁵¹³ the rules of chess have been established over centuries. Likewise many of the legitimated practices in the community may be deeply entrenched. A related literature has existed for almost as long as the game itself. Chess clubs, competitions, columns in periodicals and coverage in the popular press have all certainly contributed to the building of a chess community and the establishment of identities within that community.⁵¹⁴

Finally, Aycock suggests that the notion of "words without things" is exaggerated on the Internet where reference and accountability are illusive. This point is well taken. It can be said to underscore a pervasive meme of virtuality in CMCs. However, it should not be forgotten that the notion of "words without things" characterizes all manner of institutional facts. Money, position, status, and aesthetic constructs are all institutional notions, which as Searle (1995) suggests, often have no material referent. These "virtual" things do not gain currency because of the Internet *per se*. Rather, they are made and kept current through their use and the tacit consensus of those who use them, in this case on the Internet.

Newsgroups on USENET and other bulletin boards have varied histories and varied networks of community and identity building activity outside of CMCs. Few other Newsgroups have the history that rec.games.chess has. In addition, other modes of CMC on the

⁵¹³ See, for example Aycock, A. (1988), pp. 124-137

⁵¹⁴ *Ibid.*

Internet such as IRC, MUDs and MOOs, not having the stable community tradition of chess, can make different claims to community and identity building according to the investment or lack of investment of each in traditions of institutionalized and legitimated background material.⁵¹⁵ Different virtual environments

⁵¹⁵ The Newsgroup rec.games.chess may indeed be representative of a good many "virtual communities" which have formed as an ancillary channel of communication for well-established off-line communities. However, MUDs and MOOs are better served by analogues such as Dungeons and Dragons (D&D) which inspired them. For D&D itself, a sizeable legitimating literature already exists as well as firmly entrenched institutions. Turkle gives the example of a 10 year old she interviewed suggesting that D&D was like history except that it was more complicated, there were hundreds of books about D&D. The child assumed that "history" was represented by his text book (Turkle, 1995, p 237). Another example of an off-line simulation game which perhaps better illustrates the interpretive flexibility of newly formed play-action areas is the card game *Magic: The Gathering*. Much of the activity which makes up *Magic* falls outside of what would be considered the game raising questions about the ontological boundaries between what may be considered a game proper and what may properly be taken as ancillary activity. On one hand, the boundaries between play and reality are blurred as *Magic* cards tend to be exchanged for "real" dollars. In *Magic* the player is immersed in the world of *Magic*: the rules of the game into which game creator, Richard Garfield, has expressly incorporated interpretive flexibility: "As in roleplaying the object of the game [*Magic*] in the unstructured mode of play is determined largely by the players. The object of the duel is usually to win, but the means to that end can vary tremendously. Most players find that the duel itself becomes a fairly minor part of the game compared to trading and assembling decks... Another characteristic of *Magic* which is reminiscent of roleplaying is the way players are exploring a world rather than knowing all the details to start. I view *Magic* as a vast game played among all the people who buy decks, rather than a series of little duels." (*The Magic The Gathering Pocket Players' Guide*, p. 19). The performance characteristics of participation in *Magic* is akin to MUDs and MOOs which have been characterized as "verbal puppetry." In *Magic* Garfield suggests: "Each player's deck is like a character. It has its own personality and quirks... decks often get their own names: 'The Bruise,' 'The Reanimator.'" (Op cit. p. 18) Likewise, in MUDs and MOOs, there seems to be a similar sense of dual personification when characters are represented on the screen in third person. For example: Jane says "Hello." Or Jane waves (See *Play and Performance in Computer mediated Communications*, JCMC Vol 1.2. General Introduction). Like D&D *MAGIC* consists in a great deal of discussion and debate. However, in *Magic* players do not join in a consensual fantasy as much as debate the actual rules of the game. Thus, in contradistinction to chess, the syntax of play is very much arrived at through "passing theories." One proceeds as if one is playing according to consensual rules. Only at the objection of an opponent do the rules get reappraised and a new consensus achieved. The players have as much a role in establishing rules as any legitimated set of institutional facts. Thus *Magic* is best learned, its creator suggests, and as Meyers suggests of videogames, by playing. Clearly the emphasis in a game such as *Magic* is, to invoke Dewey, on the knowing

can be seen as fostering interpretive flexibility and as providing alternative modes of community and self-construction to varying degrees as a feature of their history of development, the degree of entrenchment of their institutions, the currency of their technologies, techniques and institutional facts.

Virtual speleology

It's some caving trip: Far below you is an active volcano from which great gouts of molten lava come surging out, cascading back down into the depths. the glowing rock fills the farthest reaches of the cavern with a blood-red glare, giving everything an eerie macabre appearance. The air is filled with flickering sparks of ash and a heavy smell of brimstone. Embedded in the jagged roof far ahead are myriad twisted formations composed of pure white alabaster, which scatter murky light into sinister apparitions on the walls.

Neither a description of a Paleolithic cave ritual or of Plato's cave allegory, the above is a sampling of the type of textual virtual reality created in computer simulation games, in this case *Adventure*, created by Will Crowther and Don Wood in 1976.⁵¹⁶ Such early textual simulations created for stand-alone computers have been supplanted by multi-user adventures (MUAs),⁵¹⁷ which have further spawned the many MUDs, MOOs, and MUSHes on the Internet today.⁵¹⁸ These multi-user dimensions represent virtuality at the

rather than the known. In a similar manner, on-line MUDs and MOOs seem to foreground interaction itself, emphasizing the collective, if fleeting, establishment of a play action space and the concomitant impermanent construction of one's identity or role and the identities or roles of others.

⁵¹⁶ Quoted in Stoll, C. (1995), p. 5.

⁵¹⁷ Bartle (1990) researched most of the MUAs which have appeared since MUD1 launched by himself and co-author Roy Trubshaw in 1979. In this on-line report, he discusses game architecture, strategy and reviews of more than 20 MUDs and MUAs produced before December 1990.

extreme of the transactionality axis. These are "virtual realities" which are provisional by design. Such an open architecture makes MUDs, MOOs and MUSHes playgrounds of identity and community.

Like other on-line channels, MUDs foster anonymity and necessitate a renegotiation of the "interaction order" which Goffman sees as informing face-to-face communications. MUDs which can be described as a collective effort to construct and maintain a virtual play-action area in text which stands in for a physical play-action area can be seen as fostering a more provisional sense of presence than other on-line channels.⁵¹⁹ Bartle describes the architectural design of MUDs thus:

MUAs are made up of 'objects', which have properties. Some of the objects represent rooms, others represent players, and others represent ordinary/non-specific objects. Rooms are linked together in a network by means of 'exit' properties, and each has a 'contents' property."⁵²⁰

He also notes the process by which individuals create characters or personae in the textual virtual realities:

Players have 'personae', which exist in a world elsewhere. The computer is their interface to this other world, carrying out their orders and reporting back to them what has happened.⁵²¹

⁵¹⁸ MUD =(multi-user dungeons, after the dungeons of D&D, since called multi-user dimensions) and MOO =(MUD, Object-Oriented), MUSH = (multi-user shared habitat)

⁵¹⁹ IRC, e-mail, BBSs and other multi-user CMCs suggest a play-action area as well. However, but not necessarily an ostensible simulation of a physical space.

⁵²⁰ Bartle, R. (1990).

⁵²¹ Ibid. p. 8.

In terms of Burke's Dramatism and Hymes's inventory discussed in the last chapter, MUDs can be seen as refiguring the act/scene ratio. That is, they call for a constant renegotiation of the features: *act* (the MUD world or universe and its laws or conventions); *scene* (a particular setting within the MUD world); *agent* (the player); *agency* (the player's capacities in relation to description: physical characteristics, race, sex, and social status; and *channel* (specific modes of interaction, i.e. in the MUD syntax, usually four modes of expression: "say" (to have one's persona's words appear to all MUD participants). "whisper" (to send a message to an individual participant), "emote" (to have one's persona gesture) and, "page" (to communicate with a participant who is not immediately present). All of these renegotiations can be seen as governing communications in the MUD, allowing interactants to sustain a consensual reality.

In a MUD, the dramatic narrative can be seen as a feature of interpersonal encounters and how they are resolved, or "played out." Unlike D&D in which the drama is narrated by the Dungeon Master and the dice, in a MUD, each player is the author of his or her own identity, narrating his or her own drama.

The tradition started in early MUDs,⁵²² sometimes called "hack and slay"⁵²³ games because their object, reminiscent of D&D, is to win experience points by killing monsters and dragons. This genre of MUA persists today in a variety of medieval and modern

⁵²² In 1992, there were some 170 different MUAs on the Internet. Bartle estimated that there had approximately 100,000 MUD participants worldwide and Curtis estimated that there were about 20,000 active MUDDers at that time. See Rheingold (1993), p. 146.

⁵²³ Turkle (1995), p. 181.

incarnations.⁵²⁴ However, a more interesting site of inquiry can be found in non-competitive MUDs designed for "playful" work.

James Aspnes seeking to create a non-competitive, non-violent MUD laboratory, wrote TinyMUD in 1988. It led to a variety of MUD languages and number of different MUSEs (multi--user simulation environments). Such MUSEs were not only expressly egalitarian, but also open to interpretive flexibility by design. Aspnes explains:

Most adventure-style games and earlier MUDs had some sort of scoring system which translated into rank and often special privileges; I didn't want such a system not because of any strong egalitarian ideals (although I think that there are good egalitarian arguments against it) but because I wanted the game to be more open-ended.⁵²⁵

It is perhaps a contingent outcome that TinyMUD's design attracted players who were less interested in competition and more oriented toward egalitarianism. Amy Bruckman, a MUD researcher at MIT, sees this as a confirmation of Langdon Winner's assertion that "artifacts have politics."⁵²⁶

One of the better-known non-competitive or collaborative MUSEs, Cyberion City, discussed in chapter 3, dovetailed nicely with the tradition of constructionism surrounding Seymour Papert at MIT. In Cyberion City and the larger MicroMUSE⁵²⁷ rather than the "newbies," "wizards" and "gods" of D&D inspired MUDs, there are citizens, builders and administrators. Rheingold suggests

⁵²⁴ One can visit TrekMUSE, for example, a text based virtual world inspired by *Star Trek: The Next Generation*.

⁵²⁵ Quoted in Rheingold (1993), p. 163.

⁵²⁶ *Ibid.*

⁵²⁷ The term MicroMUSE is an offshoot of Papert's (1980) term microworld.

that the defining metaphor of this community is a learning colony. The citizenry, children, educators and librarians, place an emphasis on co-operation while "having fun" and, he adds, "the locals all seem to go out of their way to show you around."⁵²⁸

The MediaMOO project is another serious playground. It is designed to be both "conservative" or "conventional" and, at the same time, open. Run by Amy Bruckman and Mitchel Resnick at MIT, MediaMOO is "a text-based, networked, virtual reality environment designed to enhance professional community among media researchers." It has many of the essential characteristics of an MUA except that from its inception, it was designed for serious play.⁵²⁹ (An important distinction is that interactants are required to submit their "real" names and research interests.)

Spatially, inside MediaMOO is virtual copy of the MIT Media Lab. Participants are invited to build their own offices wherever (on the globe) they are. Bruckman and Resnick argue that "there is a psychological power in the ability to construct a real place in the virtual world which is your own."⁵³⁰ The prospect of mapping all the spaces between MIT and remote regions, however, would be prohibitive. Therefore, a 'virtual Internet' was constructed to connect interactants.

Unlike Cyberion City, where the artistic license of precocious pre-adolescents can be extremely disorienting,

⁵²⁸ Rheingold, 1993, p. 160.

⁵²⁹ The mediaMOO (MUD Object Oriented) began in Oct. 1992 and was launched to the public in Jan 1993.

⁵³⁰ Bruckman, A and Resnick, M. (1995), p. 103

MediaMOO's attachment to mimesis, as one visitor's account suggests, can be a source of great comfort:

I logged in first as a guest, and came out in the E&L Garden. I had never been to the Media Lab IRL [in real life], so I felt a bit lost...Then I met Michele, and when she found out I was from Apple, she said that someone had constructed our building, and she'd take me there. ...When we stepped into the Apple R&D building atrium, I felt this incredible shock of recognition... More than that, I felt a sense of relief that there were places here that were familiar and home to me just as the Media Lab was to you. And all of this was from a couple of lines of textual description.⁵³¹

The mimetic faithfulness of MediaMOO reflects attention to J.J. Gibson's notion of "affordances."⁵³² In perceptual psychologist Gibson's theory affordances are the distinctive features of objects that help us distinguish things from what they are not. VR researcher Hillary McLellan suggests that affordances are a key aspect of virtual reality design. Considering the importance of avatars (visual simulacra for a user's hand or body) in aiding orientation in graphically based VR experiences, she suggests: "Affordance perceptions allow learners to identify information through the recognition of relationships among objects or contextual conditions."⁵³³ In text-based VR experiences, affordances must be negotiated through text unless they are programmed by the MUD creator or by participants. In MediaMOO there is a recognition of the affordance value of having institutional objects which are easily recognizable (e.g. having a corollary object in real life). Otherwise, objects and object-

⁵³¹ *Ibid.*

⁵³² Gibson, J.J. (1986).

⁵³³ McLellan, H. (1993).

events would need to be constantly up for renegotiation.

Recalling Meyers' notions of the contextualization of objects and object-events, the mimetic character of MediaMOO, additionally makes for efficient automatization of objects and object-events.

While mimetic faithfulness is a feature of MediaMOO which distinguishes it from many other MUDs, there is still a playfulness in it and a flexibility toward contributory objects which keeps the space fresh and faithful to its constructionist design. The construction of rooms and objects in MediaMOO is seen by Bruckman and Resnick as facilitating literacy in the emerging world of object-oriented programming (OOP). The virtual world is made up of computational objects, some of which are 'parent' (or root) objects, and others which are 'child' objects which possess root characteristics inherited from the parent. Objects can be manipulated and customized. For example, one interactant at MediaMOO was able to customize the parent object, "generic portable room," into a train system for taking new users on a virtual tour.⁵³⁴

Bruckman and Resnick stress a constructionist philosophy in MediaMOO which echoes Csikszentmihalyi's views on identity building through transactional involvement with objects in one's domestic environment:

The center itself-its rooms and objects-are constantly being constructed and reconstructed by the participants... It asserts that learning is a creative process, in which people actively construct knowledge from their experiences in the world... Secondly constructionism adds the idea that people construct new knowledge with particular effectiveness when

⁵³⁴ Bruckman, A and Resnick, M. (1995), p. 106.

they are engaged in constructing objects which are personally meaningful to them.⁵³⁵

The simulation games *SimCity* and *Civilization* invite players to create urban models or politico-historical constructions by manipulating the game's constituent features. MUDs invite players to construct their own identity by manipulating features akin to those suggested in Burke's Dramatistic pentad (act, scene, agent, agency, purpose) in an environment which leaves many of these contextual features to individual and consensual discretion. Indeed, lack of contextual feedback has been a major focus in the literature of CMCs (Cheesboro & Bonsall, 1989; Keisler, Seigal & McGuire, 1984). Elizabeth Reid (1995) suggests that the exaggeration of character descriptions one is likely to encounter in MUDs can also be seen as an attempt to compensate for the lack of non-textual communication channels that normally inform identity. Personal description in MUDs, she notes, must make up for a complex mixture of context cues, such as accent, dress and race, that inform our interactions in everyday life.⁵³⁶ Pavel Curtis (1992), lamdaMOO's creator, sees player personae in MUDs as largely a case of wish fulfillment, noting that he could not count the number of "mysterious but unmistakably powerful" characters he has seen in [player's descriptions of their MUD persona in] lamdaMOO.⁵³⁷ Notwithstanding "fantastic" personal descriptions, rather than being a *tabula rasa* of identity, MUDs call on

⁵³⁵ *Ibid.* p. 96.

⁵³⁶ Reid, E. (1995) p. 179

⁵³⁷ Curtis, P. (1992). p. 29.

participants to construct their MUD persona from their cultural knowledge of themselves and others.

While non-competitive MUD builders have expressly designed spaces for egalitarianism, MUD researchers have noted that it is the lack of information on gender, status, race, rank, physical appearance and other features of public identity in textual virtual realities in general which can be seen as the equalizing force (Walther, 1992) which limits the possibility of interactants dominating or imposing their views on others. However, this same anonymity tends to be non-conducive to efficient decision making. That is, when everyone's persona is also a voice to be heard, it takes longer to complete a task or reach a consensus (Sproull & Kiesler, 1991).

One of the more noted areas of "social leveling" in MUDs is the not-uncommon practice of gender switching. While other character identifiers are ambiguous, players must specify gender. Partially a linguistic constraint, MUDs require interactants to set their "gender flag" so that the program can assign the appropriate pronouns to be used.⁵³⁸ Because of statistics on the Internet, it is commonly felt that most MUDDers are male, yet according to Reid's estimates, female-presenting and male-presenting characters are found in almost equal numbers.⁵³⁹ Other estimates while more conservative are still significant. Turkle (1995), for example, notes that in Habitat, a MUD run for profit

⁵³⁸ Some MUDs offer three genders, male, female and neuter. Others offer a larger selection, male, female, neuter, plural, hermaphrodite. However, one gender must be selected before a player can enter the MUD.

⁵³⁹ Reid, E. (1995), p. 180.

in Japan,⁵⁴⁰ registered male users outnumber registered female users four to one. However, the ratio of male presenting to female presenting characters is only three to one. With a subscription of 1.5 million users, this disparity suggests tens of thousands of virtual gender switchers in this MUD alone.

According to Reid, opinions about gender switching in MUDs are mixed. Some players feel it unfair for male players to cross-gender and take advantage of the chivalry and favoritism shown to female-presenting players. They have also expressed concern about the discomfort they would feel upon discovering the "real" identity of a cross-gendered player. However, while gender switching among males on MUDs is received with mixed feelings at best, there is much more tolerance of the phenomenon of women presenting as male characters. Reid reports that those opposed to gender switching by male players are often indifferent to the practice by female users, often seeing the practice as "evening the playing field," as it were, or avoiding the usual treatment received by females, as one male MUDder's account suggests.

I played a couple of muds as a female, one making it up to wizard level. Other players started showering me with money to help me get started, and I had never once gotten a handout when playing a male player. And then they feel they should be able to tag along forever, and feel hurt when you leave them and go off to explore by yourself. Then when you give them the knee after they grope you, they wonder what your problem is, reciting that famous saying "What's your problem its only a game." I can see why some women say men are bastards.⁵⁴¹

⁵⁴⁰ Habitat was started by Lucasfilm's Games Division and since is owned and run by Fujitsu. See Rheingold, H. (1991).

⁵⁴¹ Quoted in Reid, E. (1995), p. 181.

Adopting an empowering persona may be seen as escape or wish fulfillment by some, but it can also be seen as a form of bypass in which individuals can experiment with symbolic selves. That is, individuals can present themselves to others, bypassing channels in which more superficial aspects of self-presentation are foregrounded, aspects over which in everyday life they have little control. In Burkean terms, gender variability in MUDs allows interactants greater control over agency.

In a similar fashion to therapeutic role playing, MUDs can sometimes be seen as a way of simulating and working through identity problems. Turkle (1995), however, notes that in assuming "different" identities in MUDs as a means of working through difficulties, there is sometimes a problem in separating one's on-line persona from one's off-line identity, virtual reality from reality. She conveys one MUDDer's account of never "not playing a MUD":

I like to put myself in the role of hero, usually one with marginal powers, on one MUD, start a few conversations going about MUD matters, and ask people to drop off replies to me in a special in-box I have built in my MUD "office." Then I'll put my character to sleep and go off and do some work. Particularly if I'm in some conflict with someone at work it helps to be MUDDing, because I know that when I get back to the MUD I'll probably have some appreciative mail waiting for me. Or sometimes I use a few rounds of MUD triumphs to psych myself up to deal with my boss.⁵⁴²

The difficulty that players often have separating on-line identities with the "real" identities, virtual reality from reality, reflects the degree to which our biological selves are inextricably connected to our symbolic selves, the degree to which

⁵⁴² Turkle, S. (1995), p. 189.

reality is already largely virtual, constructed in the negotiation and maintenance of institutional facts. Symbolic identities as well as symbolic relationships may be deemed as virtual, but they can be equally "real by their consequences."

Intimate altercasting

While "Cybersex," or "TinySex" as it is referred to in MUDs, in the most extreme cases can be a form of verbal rape, as in a well publicized case of the LamdaMOO rape,⁵⁴³ it can at the other extreme be the verbal consummation of an innocent on-line romantic acquaintanceship. In both cases, it raises questions of one's accountability in virtuality. Jennifer Lewis a young business woman tells of meeting a "kindred soul" in IRC.⁵⁴⁴ She and her acquaintance had daily conversations for more than a year, sharing thoughts on a wide variety of personal subjects, becoming "cyber friends" and eventually becoming "virtually" lovers. As Lewis explains, such textual intimacy,

has a lot to do with your imagination and your ability to drum up a story in your head, because you have to co-create situations. It was kind of awkward if someone was nibbling at your toes and you decide to sit down, kind of thing. You both have to be running the same scenario to some to degree or you can really screw it up and drop out of the fantasy really easily.⁵⁴⁵

⁵⁴³ See "Rape in Cyberspace" Dibbell, J. *The Village Voice*. 21 December, 1993, p. 38.

⁵⁴⁴ Interview with Jennifer Lewis on *High Tech Culture*. Discovery Channel, Jan. 25, 1995. 8 pm.

⁵⁴⁵ *Ibid*.

As in face-to-face communications, for such a scenario to work, a suspension of disbelief is required. Actors must accept their role and indulge others in theirs. In the case of Jennifer Lewis, a suspension of disbelief that worked for more than a year when mediated on-line, could not be sustained for one month in the usual interaction order of "the real world." After agreeing to meet "IRL" (in real Life), Lewis's on-line relationship disintegrated. "He got really busy," she explains. This account illustrates the difficulty that may arise in trying to keep "virtual reality" and "reality" separate, as well as the degree to which virtual reality can be "real" in terms of its consequences.

Investment in virtuality

Accounts like Jennifer Lewis's above as well as more highly publicized on-line events such as the "rape in LamdaMOO" point to the ethical issues attached to "investing" ourselves emotionally, institutionally and culturally in virtuality. The lens of post-structuralism offers a view of on-line identity which is multiple, fragmented and for which the boundaries between self and other are greatly blurred. In contrast, the dramaturgical frame suggests physical realities augmented by symbolic ones constructed and maintained by communication among intentional agents.

Elizabeth Reid's early work (1991) on IRC exemplifies the post-structuralist language:

IRC is a playground. Within its domain people are free to experiment with different forms of self-representation... The methods by which such groups are usually held together rely on physical proximity. These methods are not open to users

of IRC-computer mediated communications challenges and deconstructs these social tools.⁵⁴⁶

In her more recent work, however, Reid has moved away from the aesthetic concerns of post-structuralism, and placed greater emphasis on CMCs as a form of community building collaboration in which virtual reality is seen as social construction, engendered and elaborated by individuals in their capacity for self-substantiation:

Virtual worlds exist not in the technology used to represent them nor purely in the mind of the user but in the relationship between internal mental constructs and technologically generated representations of these constructs. The illusion of reality lies not in the machinery itself but in the user's willingness to treat his or her imaginings as if they were real.⁵⁴⁷

This willingness of interactants to treat their imaginings as real, in dramaturgical terms, suspension of disbelief, places particular emphasis on transactionality. Just as, in Yates (1969) account, medieval scholars used memory theatres to work out ideas, in turn, to build cosmologies, interactants in IRC and MUDs use their imaginations to construct worlds within which to build relationships between objects and others, and consequently to work out their own symbolic identities. The suspension of disbelief, the consensual sharing of constructs of this space serve to reify the space and the relationships played out within it. Individuals "invest"⁵⁴⁸ themselves (their time, their psychic energy, their identity) in virtuality.

⁵⁴⁶ Reid, E. (1991).

⁵⁴⁷ Reid, E. (1995). p. 166.

⁵⁴⁸ Investment can be taken here to mean dress, or embody themselves, or to use De Kerckhove's (1995) metaphor, make a skin for themselves.

One construction of the discourses of virtuality, borrowed from post-structuralist tradition, is the meme of a multiple, decentered self whose boundaries are unclear. If only taken as social construction, the increasing popular notion of this "virtual" self is legitimated in discourse and institutionalized in practice, as noted by Turkle (1995):

[t]he many manifestations of multiplicity in our culture, including the adoption of on-line personae are contributing to a general reconsideration of traditional unitary notions

of identity...the essence of this self are not unitary, nor are its parts stable entities.⁵⁴⁹

The evidence from computer mediated communications only serves to reinforce the view that the self is multiple, that is, that it is comprised in the many roles it can assume and sustain through altercasting. However, for accountability and social responsibility to be viable notions, the notion of selfhood must be framed in a theory that maintains the connection between a self concept and an individual consciousness grounded in brute facts, in the biological existence of agents who are unitary and distinct from one another. Considered from a dramaturgical perspective the claims to multiplicity and fragmentation of identity in virtuality do not disappear. However, an account of them may be considered which seems consistent with technologies of performance older than history records, an account which also stands a better chance today of entertaining our suspension of disbelief.

⁵⁴⁹ Turkle, 1995, pp. 260-1.

Conclusion

"Reality," "virtual reality," and "simulation" represent enormous territories of inquiry themselves, but each begs an ontological interrogation. This dissertation began by questioning some of the assumptions underlying these notions. As has been argued, the weakness of much research in this area has been to treat "reality" as a fixed and observable entity. Thus, notions of "virtual reality" and "simulation" have often been conceived only in relation to a fixed observable reality. An alternative view of "reality" proposed, considers "reality" to consist, in large part, of social constructions which are highly volatile by virtue of their provisional character. The concept of "transactionality," adapted from Dewey and Bentley's notion of "transaction," provides a key conceptual tool for understanding communication as involving a dynamic relationship between human beings in which they continually construct and maintain "reality" through their social interactions, a provisional reality which in turn plays a constitutive role in their construction of provisional symbolic identities. Rather than proposing two realities as Watzlawick (1976) suggests, "transactionality" is conceived as a third axis alongside those of "vividness" and

"interactivity" suggested by Steuer (1995) in terms of which the experience of telepresence can be more productively understood. Thus considered, transactionality reflects, at one extreme, a material "physical" reality, with social constructions of increasing degrees of institutional fixity through the center, and, at the other extreme, provisional constructions which invite interpretive flexibility and rely heavily on individual and collective negotiation and re-negotiation.

Virtuality is presented as a technological "stage," to reflect a current in our cultural and technological history, as well as to reflect the drama of interpretive flexibility inherent in technologies early in their diffusion. Virtuality is a drama whose resolution is yet to be fully "interpreted" by the many social actors and actor communities who entertain it. The view proposed throughout this dissertation is that social reality is to a great extent a virtual reality. Examples of proto-VRs suggest that the goal of telepresence is not an exclusively recent preoccupation. Such examples also suggest the palimpsest of earlier technologies underlying contemporary modes of communication.

Throughout this dissertation, technology has been viewed as an inherently human enterprise. Thus, the social construction of technology has been presented as an alternative to critical approaches which generally pit technology against humanity. The social construction of technology approach, it is argued, also proves to be a more useful means of dealing with interpretive flexibility and convergence, issues which are seen as central to

the study of virtuality. Convergence, the thesis argues, represents not only the coming together or clustering of the machinery of technology, but an intersection of the actor communities needed to interpret and therefore sustain a given technological trajectory.

The implications of these technologies of virtuality are presented as no less complex than the technologies themselves. The perspective argued to be most suited to the consideration of the implications of the virtual "stage" is through theories of play and dramaturgy. In dramaturgical theory, play is seen as a transformative capacity which has an executive function over even the most institutionalized of constructions, including language. Play theory thus highlights the provisional and volatile character of socially constructed realities. At the same time, play, as the capacity to frame or contextualize human action, forms the basis of some the most fundamental systems of human communication, performance and dramaturgical enactment. Dramaturgical theory provides additional tools for evaluating consensual and individual realities, created in the performance of "roles" in social enactments as well as in "altercasting," or recruiting social support for these adopted roles. Dramaturgical theory thus provides an alternative to post-structuralist conceptions of how "selves" are constituted within socially constructed reality. The "virtual stage" in contemporary communications, it is argued, does not alter the integrity of identity. Rather, agency and self concept are central components of the dramaturgical approach

which, evidence suggests, are persistently employed in "realities" whose ties to a physical, or brute "reality" are tenuous at best.

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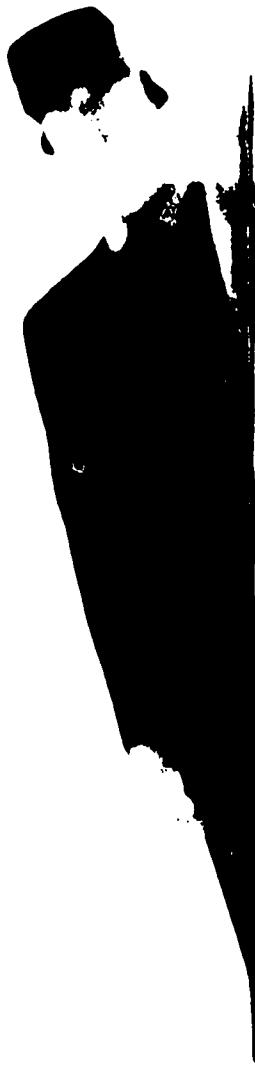
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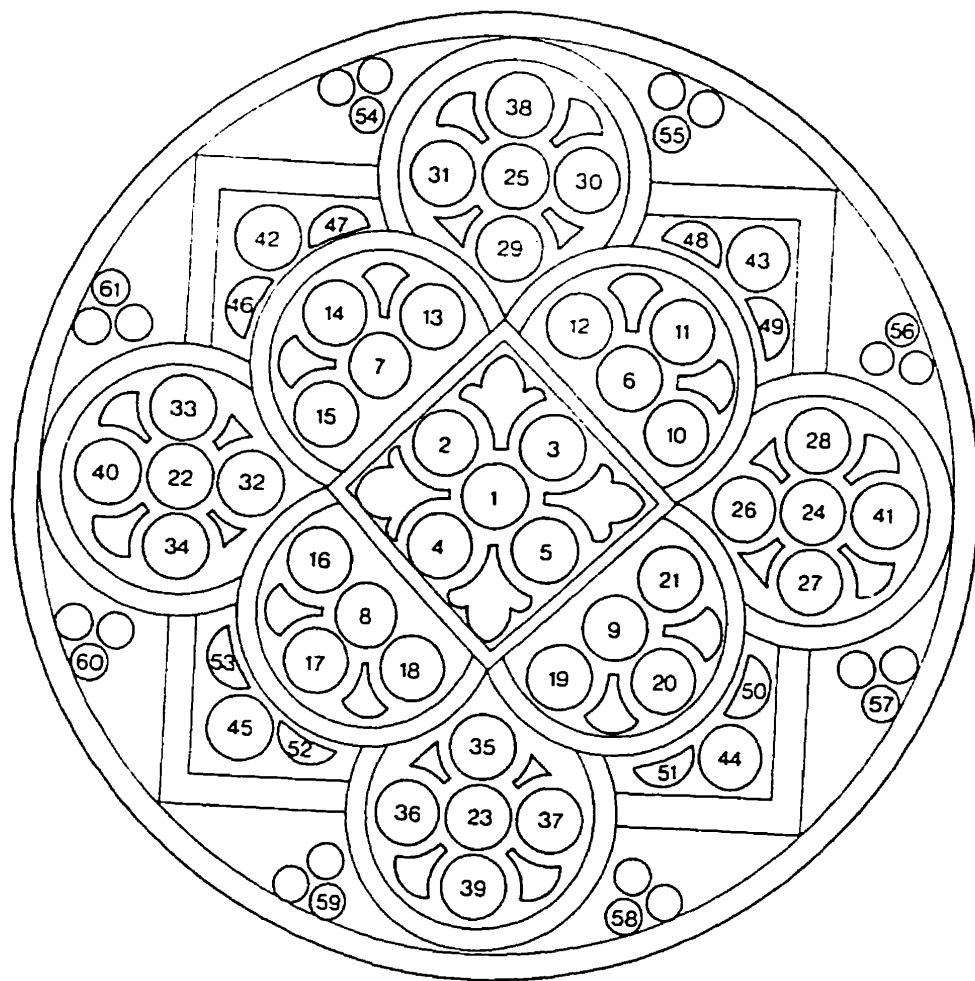
REALITY CAN BE SIMULATED.

REALLY GOOD SUITS CAN'T.

RENÉ LEZARD

Men's Business Collection





Here is the present disposition of the
Rouen rose. Panes asterisked
are nineteenth-century replacements.

1 God the Father *

Matter in the small square

- 2 Light and dark *
- 3 Land and sea *
- 4 Fish and birds *
- 5 Animals and men *

Time in the four semicircles

- 6 Spring, a man surrounded by flowers and leaves and holding a flower
- 7 Summer, red rays warming the blue sky
- 8 Autumn, amid the red and white grapes
- 9 Winter, dressed in white and hooded, weathers a storm of icicles
- 10 March, wearing a cotton turban-like hat, pruning the vines
- 11 April, wearing a toque, flowers in hand, opens the door to his garden
- 12 May, on a white horse, carries his falcon to the hunt
- 13 June, inaccurately labelled JULIUS, cuts the hay
- 14 July, reaps the harvest with a sickle
- 15 August, stripped to the waist, threshes the harvest under a baking sun
- 16 September, harvesting the grapes
- 17 October, tending his pigs while they eat acorns (and hunt for truffles?)
- 18 November, the month of cattle and pig slaughter

19 December, raising his glass to drink, symbolizes the year that has gone *

20 January, a double-headed Janus figure, with one half holding up his cup to the bountiful year ahead, the other, looking at the year that has passed

21 February, warming his hands *

The elements and the Zodiac, tornadic and beyond time

- 22 Earth, a woman surrounded with ears of corn
- 23 Water, breast-feeding a fish
- 24 Air, doing likewise to a dragon
- 25 Fire, feeding a salamander
- 26-37 The signs of the Zodiac portrayed in usual medieval style; 27, 29, 34 and 36 are replacements.
- 38 The sun with a fiery halo being drawn across the sky in a chariot.
- 39 The moon being drawn likewise but with only two horses.
- 40 Aeromancy, surrounded by seven doves by whom she foretells the future
- 41 Pyromancy, foretelling the future from the flames of the fire

Paradise and the lands of myth

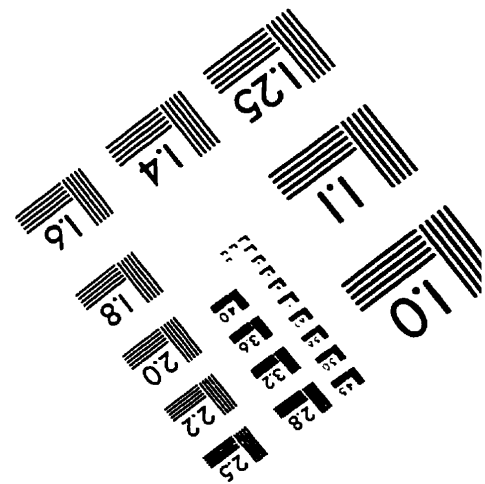
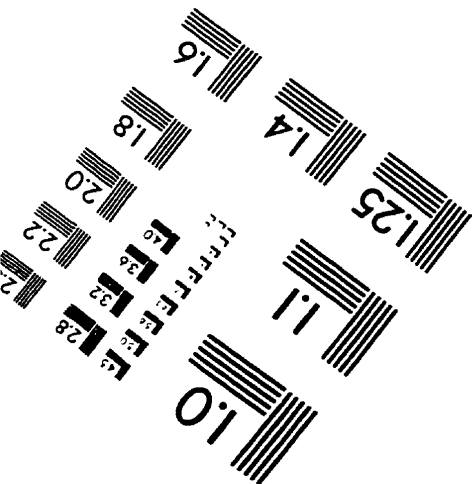
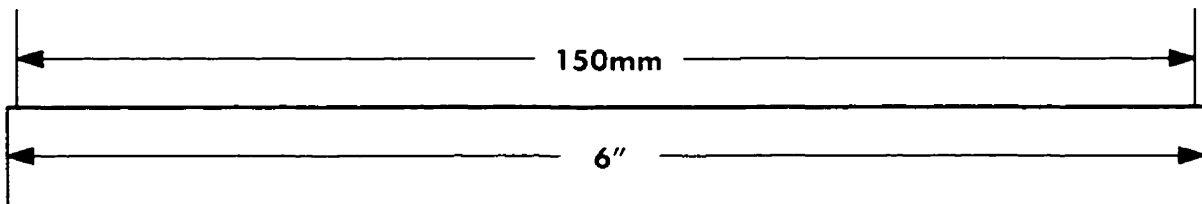
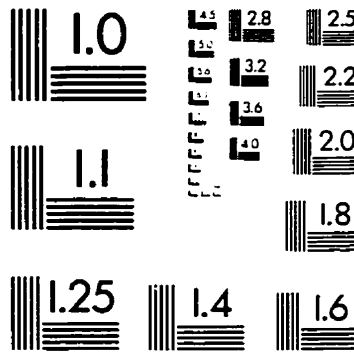
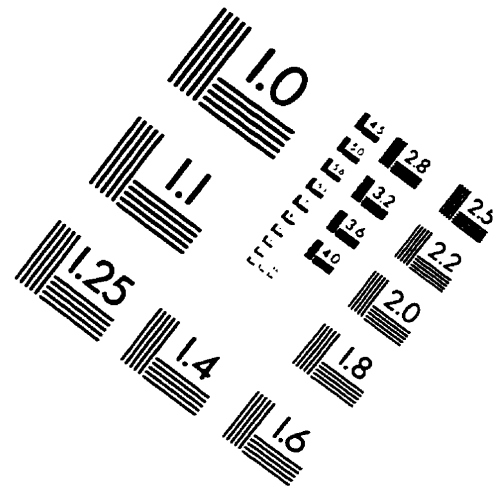
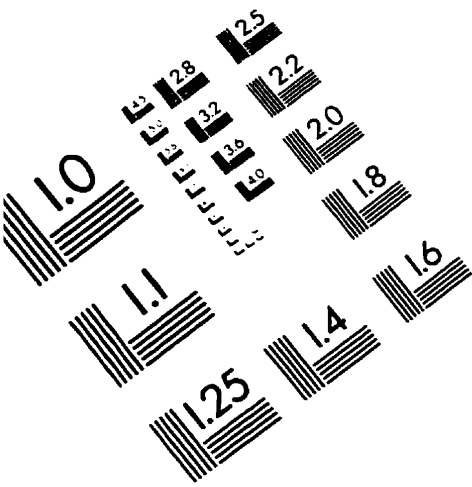
The four rivers of Paradise portrayed as bearded men pouring their waters across the four corners of the earth

- 42 The Geon (Nile)
- 43 The Tigris
- 44 The Phison (Ganges)
- 45 The Euphrates
- 46 Ethiopians, with four eyes to help the accuracy of their archery
- 47 Gangandae, inhabitants of the Ganges who supposedly lived off the sweet smell of fruit – and died in the presence of any foul odour
- 48 Acephali, creatures with no heads and with eyes in their bodies
- 49 Cynocephali, dog-headed men thought to live in India
- 50 Pygmies, also thought to inhabit India, here fighting a crane
- 51 A Satyr, a small hook-nosed creature with horns and goat-like feet
- 52 Sciapodes, creatures that lived in the desert and had only one foot, which they used as a sunshade *
- 53 Cephi, elusive creatures detectable only by their human-like footprints

The eight winds of the cosmos

- 54 Auster, the south wind
- 55 Euroauster, the south-south-east wind
- 56 Subsolanus, the eastern wind of the Levant
- 57 Vulturus, the south-east wind
- 58 Septentrion, the north wind
- 59 The north-west summer wind
- 60 Zephyr, the west wind
- 61 Austerozephyr, the south-west wind

IMAGE EVALUATION TEST TARGET (QA-3)



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