

**“Theatre-Outside-of-Theatres”:  
Spaces of Digital Performance**

by

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in partial fulfilment of the requirements for the degree of  
Doctor of Philosophy

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## **Abstract**

Title: “Theatre-Outside-of-Theatres”: Spaces of Digital Performance  
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This work examines theatrical performances that occur outside of traditional spaces or create new spaces through the use of various types of digital technology. While theatre and technology have often had a somewhat adversarial relationship—mainly due to the emergence of film—the deployment of various technologies towards theatrical ends is currently resulting in new forms of intermedial performance. These new works produce unique representational spaces each with their own audience dynamics, semiotic codes, epistemologies and modes of interactivity.

The primary focus of my work is to examine the types of spaces and spatial relationships that come into existence when specific technologies are mobilized to create new types of mise-en-scène, noting how each one creates, informs, or critiques specific spaces through a combination of theatrical practice and the tools of technology. Since the works examined here cover a broad range of practices, this thesis builds on previous scholarship by formulating a taxonomy of *Digital Performance*, which provides a framework for the systematic analysis and classification of these hybrid performances. Each chapter of this thesis examines different facets of this taxonomy, comparing the characteristics and spatial dynamics of Traditional Theatre, Digital Theatre, Locative Media, Interactive Drama and a still-emergent VR Theatre.

For  
Ron and Judy Eaket

My first and best teachers.

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## **Chapter One:**

### **Performing Inside Representations**

In 2002, residents of Vancouver had an opportunity to visit one of the largest IKEA stores built to date. However, the visitors to the superstore were not there specifically to purchase home furnishings: they were there to attend a performance of Radix Theatre's *Swedish Play*, which used the entire store as a giant performance space. For the purposes of the performance, audiences were given an FM receiver and a set of headphones, a brief set of instructions, and a map of the store. As a variation on Augusto Boal's *Invisible Theatre* (1990)—theatre that occurs in public spaces and is not announced as such—audience members were asked to “behave just as you would if you were here to browse, like any other shopper” (*Comedy* T1, 1:45). Performers were stationed at various locations in the store, performing actions, Happenings or scenes at intervals determined by the narrowcast FM soundtrack. Other performers took the role of “guides”: dressed as IKEA sales clerks, they ensured that audience members arrived at certain locations at predetermined times, while also performing monologues and occasionally providing customer service to unwitting shoppers.

While a unique event in and of itself, Radix Theatre's *Swedish Play* is part of an emerging genre of performance marked by an emphasis on interactivity, spatial concerns and the use of technology in creating theatrical events outside of traditional performance spaces. Such performances rely on Boal's notion of metaxis, whereby one belongs “completely and simultaneously to two different, autonomous worlds: the image of

reality and the reality of the image. The participant shares and belongs to these two autonomous worlds; their reality and the image of their reality, which she herself has created” (1995: 43). Metaxis substitutes the normal dialectical relationship between spectator and actor with a more performatively active “spect-actor” who observes and acts while retaining a critical viewpoint. Through the juxtaposition of real and virtual (or real and representational) worlds, metaxis places spectators within the performance frame, thereby disrupting traditional understandings of author, performer and audience. These artworks demand more participation from their audiences in the production of meaning: whether it is by reconciling real places and their enacted representation, performing as spectator/actors, or revealing the socio-historical underpinnings of material conditions, these experiences allow the audience to actively participate in semiotic as well as spatial production. Placing the audience within the representational frame requires varying degrees of interactivity, whether with actors or environments, resulting in emergent behaviors and interpretations that would not be possible in traditional performance environments that spatially separate the actors and audience.

Boal’s notions of metaxis and the spect-actor have distinct parallels in human-computer interaction (HCI), which sees the user of a digital device performing acts of agency within a digital representation. Brenda Laurel’s work in both her Ph.D. thesis *Toward the Design of an Interactive Fantasy System* (1986) and her book *Computers as Theatre* (1991), proposes striking similarities to Boal’s concept of having an audience which is both the producer and recipient of an enacted representation. Laurel remarks that both “theatrical design and graphical user interface design are aimed at creating

representations of *worlds that are like reality only different* (1991:10; italics hers). She goes on to note that in the case of digital interfaces, “[i]t’s not that the audience joins the actors on the stage; it’s that they *become* actors—and the notion of ‘passive’ observers disappears” (1991:17). Like Boal, Laurel is interested in what happens when participants perform actions from within the frame of representation and what this means for the construction of virtual worlds.

This intersection between the theatrical and the digital occurs specifically when one focuses on the spatial relationships and praxis of a given performance. To act *within* a representation is considerably different than observing one from *without*, and that shift in perspective is, as Gregory Bateson would say, “a difference which makes a difference”. Acting as agents within a representation, the role of the audience changes from observer to participant, resulting in different kinds of meaning being produced. This change in perspective is important if one is going to connect with an audience that is increasingly immune to the powers of representational art and more familiar with other forms of media besides theatre. The continuing effectiveness of theatre as a engaging and political art form depends, I believe, on changing the relationship with the audience to match the kinds of interactivity they deal with everyday in a modern, technological society.

In his 1969 polemic entitled “Theatre-in-the-Street and Theatre-in-Theatres”, playwright Peter Handke critiques the efficacy of performing political activism on the theatrical stage. Although he praises Brecht for illustrating that “the state of the world, which had hitherto been taken as intrinsic and natural, was seen to be manufactured – and

precisely therefore manufacturable and alterable,” Handke doubts that a play is capable of breaking through its own theatrical frame and inciting political change (7). “The theatre in the theatre can create only hypotheses, proto-theses of new modes of thought; as a play, it cannot directly and unequivocally demonstrate the thesis itself, the new mode of thought which points to the solution” (Handke 10). Handke asserts that theatre is very good for thinking about changing the world, but only in rare circumstances is it very good at altering material and social conditions in actuality.

Handke instead argues for a theatre that is “directly effective”: “There is now Street Theatre, Lecture-hall Theatre, Church Theatre (more effective than 1,000 Masses), Department Store Theatre, etc. [sic]: the only one that doesn’t exist anymore is Theatre Theatre – at least not as a means of immediately changing prevailing conditions: it is itself a prevailing condition” (Handke 9). Handke’s preoccupation with Theatre-in-the-Streets resonates with the activism of the 1960’s, and an overarching desire to take direct action in response to what he saw as a stagnant culture, government corruption and the Military-Industrial complex.

In our own era, can Theatre-in-the-Streets again be a panacea for political change? One would hope so, but much has changed since Peter Handke’s time. The mass remediation of “anti-globalization” protests around the turn of the century—most notably Seattle (1999), Washington D.C. (2000 and 2002), Quebec City (2001) and Genoa (2001)—were mostly “spun” by major news organizations into portraying protesters as violent anarchists. After the events of 9-11, political dissent has been become almost synonymous with terrorist activity and marginalized to “free-speech

zones” in the United States. Given this historical impasse to widespread Theatre-in-the-Streets, is it possible to find alternatives to the two main forms of politico-theatrical engagement proposed by Handke? Furthermore, is it possible to find a *synthesis* between the two—one that retains Brecht’s powerful notion that society is deeply historical, manufacturable and alterable, while simultaneously occurring out in the world—therefore negating the representational and political containment which results from the use of the proscenium arch?

It is my belief that this synthesis is already occurring in various forms of Theatre-Outside-of-Theatres that utilize various technologies to create mobile, spatially dispersed or purely digital mise-en-scènes that usually exist apart from traditional theatre spaces. The artists with which I engage here use mobile, locative or digital technologies to engage with, territorialize or remake spaces in environment. By doing so, spaces are opened up for imaginary communities, ongoing cultural critique, carnivalesque events, and a radical kind of play that forces us to imagine cities and spaces otherwise. Handke remarked in 1969 that he hoped theatre activists in his own time would “go on performing until reality too becomes one single performance area. That would be fine” (Handke 10). This is a sentiment that I share forty years after Handke’s pronouncement, since I believe that the first-person engagement with spaces and the mapping of meaning onto the environment are critical if we are going to revive communities, cities and individual perceptions deadened by the relentless march of instrumentalism. By giving audiences an experience, instead of a picture-frame representation, theatre artists are still

able to make vital contributions to the aesthetic, political and social spheres in a rapidly changing culture.

While theatre and technology have often had a somewhat adversarial relationship—mainly due to the emergence of film—the deployment of various technologies towards theatrical ends is resulting in new forms of performance. These new forms of performance mainly exist outside theatres, and each one produces its own unique form of representational space with its own dynamics, semiotic codes, epistemology and modes of interactivity. The primary focus of my work here is to examine the types of spaces and spatial relationships that come into existence when specific technologies are mobilized to create new forms of mise-en-scène, noting how each one creates, informs, or critiques specific spaces through a combination of theatrical practice and the tools of technology. Another part of this research is geared towards formulating a taxonomy of these types of *Digital Performance* in order to systematize their analysis and to a certain degree, their classification.

Before examining the range of performances and spaces enabled by the combining of theatre and technology however, one must outline the historical transition of performance from traditional to non-traditional spaces in order to understand how the jump to Theatre-Outside-of-Theatres occurs. As well, one must examine the disciplinary concerns arising from the intersection of theatre and technology, and note the similarities between recent spatial concerns in performance and those surrounding the use of technology.

## **Performance Spaces: A Brief History**

Traditionally, theatre has been performed in “two kinds of venues: 1) those spaces which were set up expressly in order to serve as theater buildings and (2) those spaces which were created to serve a different practical function, but are used temporarily or repeatedly as a theater” (Fischer-Lichte 97). These buildings follow the same signifying processes as architecture in general, and can reveal a great deal about the ideology, cultural priorities, and socio-material conditions of the societies that built them. Similarly, such purpose-built structures have a great deal to tell us regarding the status and place of theatre within the society, as well as its relationship to representational practices in general.

The circular structure of the Greek theatre for example, can be interpreted in relation to the polis of Athens and its democratic institutions; its proximity to the orchard of Dionysus signifies a special relationship of the theatre to the Cult of Dionysus, its ritual practices and the significance of religion and theatre to the polis. Likewise, the Easter celebrations of the Christian Middle Ages were largely performed within the church, “as part of the liturgical ceremony, as part of religious service: the church as venue refers to the sacred function and meaning of the performance (Fischer-Lichte 97). Much of early theatre is marked by a spatial proximity to religious structures, and likewise functions allegorically in relation to sacred myths and texts.

The baroque period, in contrast, encloses the theatrical space in buildings where both the actors and audience remain illuminated and audience members face one another,

so that everyone in the society can see and be seen; the theatre becomes a highly social event as well as a form of entertainment, and all classes within the social hierarchy appear on the stage as well as in the audience. As Erica Fischer-Lichte notes, “this distribution of space is an emphatic reference to the special validity and meaning which the theatrical simile possessed for the baroque period” (100). The performance of social roles—particularly the ostentatious visual display of these roles—bears a great importance to the society of the period, and the spatial arrangement of the theatre building reflects this concern with public visibility. The emphasis on theatre as a simile for the “proper” performance of social roles underscores a desire for social harmony, as well as a certain attitude towards the power of representation more generally.

The box-set stages of the nineteenth century, and the rise of the “fourth wall” of the proscenium arch proper, marks a shift in the theatre’s relationship to the world at large. The actors are completely separate from the audience, both spatially and through the use of lighting; the audience now sits in darkness while the actors are bathed in gas or electric light. The effect is a separation of theatre from the rest of social life and the loss of its status as an integrated reflection of society (Fischer-Lichte 100). The stage becomes a space for isolated observers to project their psychological inner life and speculate on the sociological workings of society; the educated bourgeoisie who patronized the theatre of the period (and still do, to a certain degree) projected their values of individuality, psychological interiority and a scientific orientation to the world, changing the stage into a kind of “lab” for observing human behavior. Thus the signs of performance operate more at the level of individual subjects rather than society; the

scientific eye of the audience member decodes the character in performance by watching for the exterior clues that reveal a subjective interiority. In Naturalism and Realism, there is an assumed psychological indexicality between the physical signs of performance and the emotional and mental states of the character. The spatial demarcations of audience and actor, as well as the bright illumination of the stage, aids this process of decoding psychologically indexical signs—the dominant form of representation in this period.

Various forms of theatrical experimentation from the 1960's onwards have explored the possibilities and practicalities of performing outside of traditional spaces. There are three major changes in perspective which are occurring in this period. First, there is an attempt to redefine the relationship between the actors and audience, in order to blur the distinction between those who act and those who observe. Second, there is a historical movement away from the theatre as a fixed place or structure towards theatre as an event (Cole 109). This turn towards theatre-as-event parallels the more generalized shift in the post-industrial world towards an “experience economy” based on services, customization and the constructed memories of the consumer as a “product” (Pine & Gilmore 1999). Third, and perhaps most importantly, the recognition of the environment as a set of signs (Barthes 1966; Debord 1958; Baudrillard 1981) collapses the distinction between the real and representational. The spatial separations and representational practices that functioned to give the theatrical stage its “iconic identity” (Carlson 84) have, for the most part, collapsed. This collapse means that the physical frame of the proscenium arch, which once marked off the *mise-en-scène* from the rest of reality, is

replaced with individual perceptual frames (Goffman 1974). As the theatre semiotician Marvin Carlson remarks:

As theatre, in its continuing colonization of reality, has moved outside its traditional spaces and renounced the conventional “frames” of elevated stage or encompassing proscenium, the importance of “seeing as” has become especially clear, as has the close relationship between this process and the role of the icon in the theatrical experience. The conversion of real space into iconic space, a conversion essential for it to be utilized in theatre, depends precisely upon a person or, more commonly, a group of people choosing not merely to “see” it, but to “see it as,” in Wittgenstein’s terms. This is what occurs when, as Bullough observes, “by a sudden change of inward perspective, we are overcome by the feeling that “all the world’s a stage.”” (Carlson 89)

This emphasis on perceptual shifts engendered by performance outside of traditional theatre spaces is at the heart of many of forms theatre in the latter half of the twentieth century that blend elements of real life and performance: Happenings, Situationist actions, Street Theatre, Invisible Theatre, Environmental Theatre, and Site-Specific Art in particular. These art forms also provide a background to the spatial concerns, attitudes towards representation and semiotic operations of contemporary artworks that use technologies for performances in non-traditional spaces.

While several early theatre practitioners such as Nikolai Oklopkov and Jerzy Grotowski experimented with the blending of actor and audience space through the extension of scenography into the auditorium, their performances were still enclosed

within a traditional theatre building; likewise both still utilized some form of physical separation between the theatrical, iconic space of the actor and the viewing space of the audience (Carlson 81). It is only with the development of Happenings in the late 1950's that these spaces are intentionally blurred, and often combined. Allan Kaprow defined Happenings as "an art form similar to theater in that it takes place in a specific time and a specific location. Its structure and its content are a logical extension of the [performance] environment" (Becker and Vostell 46). Characters, settings and plots are replaced by what Michael Kirby calls "non-matrixed performance", a form that refuses the world-building aspirations of mimetic performance (25-6). The development of Happenings was remarkably important historically, since it emphasized the perceptual framing of location and action as event (rather than theatre-as-place), while at the same time drawing into question what could and could not be considered performance—much like Duchamp's *Fountain* (1917) had done previously in the visual arts.

Building on many of Kaprow's concepts, the Situationists of the 1950's and 1960's saw their goal as the "having to do with the theory or practical activity of constructing situations" (Debord 1958). Heavily influenced by Surrealism and Marxism, Situationists like Guy Debord sought to unify art and everyday life, so that the two would become indistinguishable. Their strategy was to discover techniques that would alter habitual perceptions, actions and thoughts, thereby producing new perspectives on the material environment and society. The technique of psychogeography, "[t]he study of the specific effects of the geographical environment (whether consciously organized or not) on the emotions and behavior of individuals" has had a major influence on contemporary

locative practitioners; likewise, the Situationist *dérive* or drifting, “a technique of rapid passage through varied ambiances” (Debord 1958), has become a major trope of discourses surrounding Locative Media (cf. Glowlab, Networked Performance, London Psychogeographical Association).

Richard Schechner’s experiments in Environmental Theatre in the 1960s and 1970s similarly attempted to displace, surround and involve the audience to create a more interactive theatre experience. Schechner was heavily influenced by Kaprow, and borrowed the term “Environmental” from Kaprow’s 1966 book, *Assemblages, Environments and Happenings* (Schechner 1994). The emphasis on the spatial dimension of performance and the audience’s positioning within that frame, much like Debord’s “construction of situations,” radically altered the demarcations between audience and actor. Schechner’s Performance Group used found spaces combined with a total utilization of the space in performance; this meant that the perceptual demands placed on the audience also changed; attention to the real and the image simultaneously—the operation of metaxis—was highlighted, as was the unique viewpoint of the individual spectator.

This emphasis on audience perception and reflexive spectatorship was also a dominant concern in other visual arts of the 1960’s and early 1970’s. Minimalist sculpture, in particular, began to question the Modernist notions of an autonomous and self-referential work of art. Similarly, the concept of the museum as a *tabula rasa*, a blank space disconnected from other systems of cultural and economic production, came under attack. Instead, site-specific work came to emphasize the bodily experience of the

viewing subject, the relationship between the work and its site, and the presence of the viewer for the work's completion (Kwon 2004). The minimalist emphasis on spatial extension and temporal duration, combined with the situational positioning of object and viewing subject, marks the transition of minimalism into the theatrical and performative (Fried 1967). While Michael Fried sees this as a negative development—a divergence from the “pure” plastic arts of Modernist aesthetics—the recognition of the viewing audience as an active participant in the production of artistic meaning highlights the continuous interplay between content and context that constitutes the art object. In site-specific practices, the intentional foregrounding of the interplay between content and context is often at the very core of the work. As Nick Kaye remarks, “site-specific practices are identified … with a *working over* of the production, definition and *performance* of ‘place’” (46; italics his). They often analyze the opposition between “real” and “ideal” spaces, ultimately upsetting or deconstructing that opposition through performance.

The work of theatrical groups such as Brith Gof and Forced Entertainment in the UK brought many of the concepts of visual arts-based site-specificity into mainstream theatre throughout the 1980's and 1990's. The emphasis on audience reception—particularly through the reconciliation of opposing viewpoints—and a stress on the importance of context in the constitution of artistic meaning built on many of the concepts already established by Environmental Theatre. Instead of constructing a space of performance, however, site-specificity used the built environment as a “ready-made” around which an artwork could be structured. The movement from “seeing” to “seeing-

as” that Carlson discusses in relation to the perceptual framing of performance outside of theatres is virtually complete: the iconic status of the stage is transferred to the real world through “keying” audiences into a certain perceptual frame that constitutes the *mise-en-scène* (Goffman 40).

The historical arc of public performance, from Happenings to Site-Specific Art, marks a series of conceptual shifts. First, the lines between performance and life become increasingly blurred, interrogated and negotiated by performers and audiences. Second, the rise of “non-matrixed” performance alters the relationship of theatre to mimetic imitation of reality, and opens up new possibilities for artistic production. Third, the emphasis on the physical *mise-en-scène* as a framing device is diminished, as works open up the space of performance to encompass the audience as well as performers in non-traditional venues. Lastly, the concern with the embodied spectator, the importance of site and the viewer’s role in the completion of the work cements the audience’s position as a co-producer of meaning and underscores the importance of place in contemporary performance.

Many of the recent questions raised by practitioners of Digital Performance regarding the interaction between real and virtual worlds were previously points of discussion by theatre practitioners since the Happenings of the 1950’s. Since that period, performance analysis has built up a rich set of semiotic tools for analyzing how audiences produce meaning from works that blend real world and representational elements. Using public space as “one single performance area” (Handke 10) is made easier through the use of ubiquitous technologies, which allow *any* space to potentially be a location for

site-specific interventions or locative practices. Likewise, with the advent of computer-based genres of theatre, certain types of performance can be available anytime and anywhere.

The historical moment when any space can be used for performance marks a radical shift from historical periods that required a specific ritual location or social gathering place for performance. All that is necessary now is a perceptual frame and the construction of an event for a post-dramatic performance to occur. The advanced technological and consumer society of Western culture readily lends itself to this theatricalization of the real. The ubiquity of advertising, the density of urban architecture, and an increased emphasis on context and viewpoint have changed the way that we see our environment; technology and representations surround us to such a degree that we are never “outside the text” of our own culture. The fingerprints of human production, creativity and narrative are everywhere around us, always.

My interest in this historical shift and the types of performance it engenders stems from four main beliefs. First, that theatre, with its long history of engagement with theories of representation has a great deal to tell us about new media practices and our changing relationship with the material environment. Second, that if theatre is to stay relevant, it must step outside its “edifice complex” of attachment to theatre buildings and engage publicly with the society in which it exists. Third, that the sharing of stories, whether through live theatre or mediated performance, is an important means of constructing social imaginaries and meaning within society. Last is a belief that subjects are highly influenced by their environment, and while one cannot change the material

environment *in toto*, one can help change perceptions of it, thereby encouraging new subjectivities and outlooks in a non-coercive, non-deterministic way. The production of space is always the production of a social subject—the difficult part is how to do that so that meaning-production ultimately resides with the audience of a given performance.

Digital Performance continues the historical trend of increasing concern with context, non-linearity and audience reception by focusing on space, representation and mobility. Any space can be a site of artistic engagement and audience interaction, or one can create a virtual space that facilitates new interactions. In a historical period where we are constantly surrounded by material culture and our own representations, theatrical forms that investigate what it means to be inside a representation, or examine the relationship between space and subjectivity, seem wholly appropriate and necessary.

### **Traditional Theatre: Disciplinary Concerns**

The ontology of liveness, which privileges the live, unmediated nature of performance as the defining feature of the theatrical form, has contributed to some of the most productive and insightful debates in Theatre and Performance Studies. Traditional Theatre has used the idea of liveness to distinguish it from other forms of mediated performance such as television and film, and simultaneously highlighted the body as the primary site of semiosis on the stage. However, as *the* definition of theatre's media specificity, "liveness" as an ontology has failed to account for a changing media landscape, becoming instead as an absolutism that actually does more harm than good for

the discipline as a whole. Martin Esslin suggests that the division between the live and the mediated “has become somewhat of an anachronism and inhibits clear critical thinking about the very considerable number of essential and fundamental aspects that the dramatic media have in common” (31).

Initially a means of differentiating theatrical performance from cinema in the early part of the twentieth century, liveness has taken on the role of a tautological justification of theatre’s relevance in the early twenty-first. On the one hand, liveness as an ontological criterion has contributed to extraordinarily sophisticated analyses of embodiment and its role in producing meaning in performance. Feminist theory, queer theory, various post-colonialisms, and audience reception theory have all foregrounded the body as the primary site of semiosis on the stage, and rightfully so. However, more often than not, the live embodied actor is problematically taken to be a privileged object that axiomatically grants integrity, authenticity or truth. The implications of liveness as an ontology of theatre has been widely debated, with Peggy Phelan and Philip Auslander taking up opposing sides of the debate. As the boundaries between the live and the mediated blur, “[t]he result of this implosion is that a seemingly secure opposition is now a site of anxiety, the anxiety that underlies many performance theorists’ desires to reassert the integrity of the live and the corrupt, co-opted nature of the mediatized” (Auslander 39).

Our current anxieties over the live and the mediated are not new; as Peter M. Boenisch points out:

As soon as new media technologies like photography, the telephone and radio had become more widely available in the early decades of the twentieth century, their effects on and potential interaction with established media and art forms, such as novels and theatre, became a matter of (quite often heated) debate. New aesthetic products, especially the moving picture, instigated a broad range of refection on the influence of (media-) technological innovation on art and its perception.

Walter Benjamin set the landmark for that particular period of discussion with his essay on *The Work of Art in the Age of Mechanical Reproduction* (1936). (2003: 34)

Boenisch's mention of Benjamin is striking, since the "auratic" quality the latter identifies closely matches Phelan's discussions of originality and "representation without reproduction" (Phelan 3). "On stage," writes Benjamin, "the aura emanates from Macbeth, [and] cannot be separated for the spectators from that of the actor." In film, this is not the case, since "the singularity of the shot in the studio is that the camera is substituted for the public. Consequently, the aura that envelops the actor vanishes, and with it the aura of the figure he portrays" (229). Benjamin's point is that with mechanical reproduction, the basis of art shifts from presence, ritual and tradition to the practice of politics. Phelan valorizes a lack of technological reproduction in theatre as a strength, whereas Benjamin sees auratic art as having "parasitical dependence on ritual" (224).

Written in 1936, *The Work of Art in the Age of Mechanical Reproduction* appears the same year as Kodachrome colour film is introduced to the public. Benjamin writes at a time when the art of painting is coming under threat from colour photography. The

threat of technology in the early 20<sup>th</sup> century clearly did not make painting obsolete, but rather forced it in entirely new subjective directions: Post-Impressionism, Cubism, Surrealism, Abstract Expressionism and so on. The imitation of nature was no longer tenable as a defining ontology, given the technology of colour photography. In reaction to cold, technological objectivity of the device (the camera), subjectivity was emphasized as an artistic criterion. This supplementary quality emphasizes the subjective perceptions of the artist over the imitation of reality, resulting in such forms as expressionism and impressionism in painting, or such theatrical forms as Stanislavskian acting (psychological depth of the character) and Worker's Theatre (social praxis of the performative act). In addition, there can also be an emphasis on the subjective perceptions, interpretations and reflexivity of the audience; in painting, this historically resulted in abstract or conceptual works, while in theatre it shifted the emphasis towards anti-realism in the form of Brechtianism and Absurdism. As a process of redefinition, a medium might also begin to incorporate others into its frame to become more intermedial (ie. Happenings, Installations, Performance Art (Higgins 1965). Later on, these tentative, experimental techniques are usually incorporated into the larger art form, becoming part of the “territory” of a particular disciplinary formation. The process of ontological challenge and the subsequent rethinking of boundaries and assumptions is vital to the continuing re-structuration of disciplines and media (cf. Giddens 1986).

Contemporary debates surrounding performance follow a very similar pattern to arguments in the early part of the twentieth century concerning technology and the reproducibility of art. In *Unmarked: The Politics of Performance* (1993), Phelan argues

that performance is defined by its non-reproducibility: “Performance’s only life is in the present. Performance cannot be saved, recorded, documented, or otherwise participate in the circulation of representations of representations: once it does so, it becomes something other than performance.” Performance “becomes itself through disappearance” (146). The non-reproducibility of theatre is seen here as a holdout against the endless proliferation of simulations and signs in the postmodern economy (cf. Baudrillard 1981; Jameson 1991). The ephemeral nature of the theatrical event as it passes into memory is proposed as a means of escaping the “reproductive economy” of patriarchal power, which seeks oppress political opposition and control signification (146). Phelan gestures towards Mulvey’s notion of the “male gaze” (Mulvey 1989) in asserting that performance and the (female) subject can only become what they truly are “through disappearance”—that is, by escaping the objectifying nature of representational artifacts (ie. film or photography) and by resisting the “flattening out” of embodied subjectivity that comes with static artifacts or signifiers.

*Unmarked* asserts that performance is characterized by an aesthetics of presence whereby “[p]erformance implicates the real through the presence of living bodies ... Without a copy, live performance plunges into visibility—in a maniacally charged present—and disappears into memory, in the realm of invisibility where it eludes regulation and control” (148). There is a semantic conflation at work here, with bodies being spatially near (present), as things occur “now” (the present). The first (embodiment) is an important factor in theatrical event, while the second (temporality) is somewhat of a tautology: any ‘life’ a performance achieves can only occur in the present,

and there is no such thing as a present unless there is a "spectator" (or a consciousness) there to experience it. "In other words, the same logic applies as well to laughter, dreaming, reading, a dinner party, or any durational experience which, having passed, ceases being itself and assumes the ontological status of memory" (States 10). Phelan's aesthetics of presence, with the "notion of presence as the ontological foundation of performance [is] not simply a characteristic of performance art but the most persistent consideration in any discussion of performance in general" (States 9); her position was not an exception within performance studies at the time *Unmarked* was written, but a discursive norm which served to partition off theatre from film and other technologically-based media.

Given the nature of the live/mediated binary, it is perhaps not surprising that it came under deconstructive attack by Philip Auslander, first in essay entitled "Just be Yourself" : Logocentrism and difference in performance theory" (1994), and later in his book entitled *Liveness: Performance in a Mediatized Culture* (1999). Auslander's analysis of the theatre's prioritization of the live over the mediated in many ways replayed Derrida's deconstruction of the cultural prioritization of speech over writing in *Of Grammatology* (1976); the issue of presence looms large in both texts, and it is an issue which I will return to later in this chapter. Instead of essentializing liveness as a mode of *being* which qualitatively defines performance, Auslander states that "liveness is historically conditioned and ... a cultural construct, not an ontological condition" (2). As historical and technological conditions change, the definition and cultural investment in liveness changes as well:

The live is, in a sense, only the secondary effect of mediating technologies.

Prior to the advent of those technologies, e.g. photography, telegraphy, phonography, there was no such thing as the "live," for that category has meaning only in relation to an opposing possibility. Ancient Greek theatre, for example, was not live because there was no possibility of recording it.

(51)

Thus the live and mediated are co-dependent, deriving their meaning from relational difference rather than essential qualities; liveness does not being as a pristine originary condition, but rather emerges as a separate cultural category as a result of mediatization.

As Conner remarks, "the desire for originality is a secondary effect of various forms of reproduction. The intense "reality" of the performance is not something that lies behind the particulars of the setting, the technology and the audience; its reality consists in all of that apparatus or representation" (153; qtd. in Auslander 53). Or as Herbert Blau succinctly puts it in *The Eye of Prey*, "[t]here is nothing more illusory in performance than the illusion of the unmediated. It can be a very powerful illusion in the theater, but it is theater, and it is theater, the truth of illusion, which haunts all performance whether or not it occurs in the theater, where it is more than doubled over" (1987: 164-65).

Indeed, what many theatre scholars such as Phelan seem to have forgotten is that theatre is one performance medium among many, communicating meaning through various culturally determined semiotic channels and cultural codes. Similarly, theatre has readily incorporated other media into the creation of its mimetic worlds at least since the Greeks. Theatre does not stand in opposition to technology or other media forms; rather,

it has almost always sought in one way or another to incorporate them into the mise-en-scène. From the masks and *carunthi* of the Greeks, to the incorporation of gas and electric lights, to the multimedia spectacles of Robert Lepage or Cirque du Soleil, theatre has quite readily incorporated technology to produce new aesthetic worlds and perspectives. From the viewpoint of the actor, perhaps it does seem that theatrical liveness is a safeguard against the encroachment of technology, but from the booth (where the lighting and audio effects are controlled) the perspective is quite different.

If ‘liveness’ only emerges as a separate aesthetic category as a result of mediating technologies—as Auslander asserts—it would seem that the liveness debate reflects problematic, disciplinary relationship with technology. The cultural anxiety regarding early colour photography (as a mediated, mass produced art form) in relation to the originality of painting that *Work of Art* alludes to in 1936 (Benjamin 226) is the same kind of anxiety that Auslander references—and Phelan performs—regarding mediatised forms such as film, television or digital video in the 1990’s. “A medium in our culture can never operate in isolation, because it must enter into relationships of respect and rivalry with other media,” note David Bolter and Richard Grusin in their study, *Remediation: Understanding New Media* (1999: 65). Historically, the ‘threat’ of technology that Benjamin observes did not make painting obsolete, but rather forced it in entirely new directions: impressionism, abstract art, pop art, and conceptualism, for example. The general pattern of adaptation that painting underwent with the introduction of photography is many ways similar to what has happened to theatre and performance since the introduction of film, accelerating with the spread of television and digital video.

In this pattern, there is first a challenge to the dominance and/or definition of a given medium—its foundational ontological assumptions are shattered by the introduction of a more technological medium. The aesthetic criteria and justifying philosophies of the medium thus must change due to the “relationships of respect and rivalry” that Bolter and Grusin point out, as well as a resultant reordering of disciplinary boundaries and justifications. In painting, as in theatre, the “imitation of nature” was no longer tenable as a defining aesthetic, since photography and film generally are much better at capturing ‘real life’, however staged it may be. Furthermore, as an extension of this desire for boundary maintenance in the wake of an ontological challenge, a medium might also begin to incorporate others in an experimental process of re-definition; these intermedia hybrids might take the form of mixed media collage, installation works or performance art, for example (Higgins 1965). Later on, these tentative, experimental hybrids might be incorporated into the medium itself, not as experiments in form, but as tools of expression in their own right; in painting the use of digital canvases and photo-manipulation are now generally accepted, just as in theatre, tools such as digital projectors are now integrated as remediation and intermediality become accepted practices (cf. Bolter & Grusin 1999; Chapple & Kattenbelt 2006).

This progression—albeit extremely generalized—marks a certain level of cultural comfort with technologies and media, from suspicion and antagonism to their gradual adoption and intermedial integration. Similarly, the disciplinary process of redefinition—through a breakdown of founding ontologies and their subsequent reformation—can be seen as a continuing, necessary process in the re-structuration of media and art

disciplines. The alternative would be a set of discourses and practices that are, by definition and in practice, dead. So while photography, film and television presented--and continue to present—challenges to older forms like painting and theatre, the medial differences and the periodic shocks they represent are necessary to enliven each artistic medium, since they force us to radically rethink disciplinary boundaries and assumptions. In contemporary theatre discourse, theorists of intermediality have come to recognize the co-dependence of the live and the mediated on the stage. Theatre theorist Erika Fischer-Lichte remarks that “Once we understand theatricality as the specific staging of bodies in different media for the specific perception through others, theatricality and mediality seem intimately connected” (13). This is a significant shift from the highly polarized discourses of liveness and mediation prevalent in the field only ten years earlier. Although Fischer-Lichte and other European scholars of intermediality manage to achieve a synthesis between liveness and mediation by focusing on the body as a medium, there is still a significant problem with this newer ontological framework. What Fischer-Lichte fails to disentangle is the distinction between the material body as a medium and set of signs, and the experience of embodiment, which is phenomenologically and socially constructed.

The distinction between the material body and the experience of embodiment, largely a blind spot in theatre studies due to their overlap in co-present performance, becomes important when we begin talking about performances where actors and audiences are spatially separate. Denis Waskil and Phillip Vannini in *Body/Embodiment* remark that the body is “more than a tangible, physical, corporeal object … [it] is a social

object,” which incorporates both the body-as-object and body-as-subject; “[f]rom this perspective, the term “embodiment” refers quite precisely to the process by which the object-body is actively experienced, produced, sustained, and/or transformed as a subject-body” in a process of continual emergence and interaction with the larger social environment (Waskil & Vannini 3). The process of embodiment is a continuing experience of adaptive reconfiguration that often goes beyond the boundaries of the corporeal body, extending into the social, technological and perceptual.

In traditional theatre, there tends to be a strong overlap between the body, its significations and experiences, focused on the heightened embodiment of the actor and the spectacle of the body as a signifier. Conversely, these qualities are minimized for the audience, who sit in a darkened theatre, silently observing the stage. This concentrated perception aids in the processes of identification with, and projection onto, the bodies of the actors with whom the audience shares a collective experience. In Locative Media or Site-Specific Art, the lines between spectators and performers begin to blur: the material body of the actor changes in importance as the “burden of performance” is shifted onto a mobile and embodied audience (or interactor). Digitally streaming or telematic media can likewise reorganize the perceptions of embodiment, since they “dissolve the spatial (but not the temporal) unity between performers and spectators and distribute the scenic space into diverse remote sites” in a situation similar to radio drama (Gesner 1). Such a format detaches the materiality of the body from its signifying and phenomenological functions, which are redistributed to an audience that co-produces the text.

Creating a sense of co-presence between users is thus a growing field of inquiry as telematic technologies become increasingly widespread. Co-presence depends on the effects of physical or electronic proximity: “Physical proximity is an area within which naked human senses can reach, and electronic proximity is an area within which electronically extended human senses can reach” (Zhao 446). The distinction between spatio-temporal (physical) co-presence and a merely temporal (electronic) co-presence is an important distinction, since it recognizes that our material bodies and our experiential perceptions are often miles apart. One may be standing on a street corner waiting for the light to change, but one’s perception is focused on an immediate experience of co-presence on the cell phone, with someone who may not even be on the same continent.

In telematic experiences like Virtual Reality (VR), where the user is immersed in a digital representation, we may seem to leave the body behind through a process of blocking and replacing sensory impressions, but our sense of embodiment still travels with us. This means that such an experience will be “simultaneously and inescapably a social, racial, ethnic, gendered and cultural one” (Murray & Sixsmith 322). Our enculturation within social and perceptual patterns means that although the body may be separated from perception by extensive technological mediation, our sense of embodiment is always with us. These enculturated habits of embodied experience are what digital researchers Murray and Sixsmith allude to when they say that “people's experiences of VR are not purely cognitively oriented, but embodied … to walk along the roads in cyberspace is to remain within the same embodied sociocultural patterns that exist in the real world” (320).

A similar point is made by Katherine Hayles in her book, *How We Became Posthuman* (1999) and in a later article entitled “Flesh and Metal” (2002). She remarks that, “[t]he body is the human form seen from the outside, from a cultural perspective striving to make representations that can stand in for bodies in general. Embodiment is experienced from the inside, from the feelings, emotions, and sensations that constitute the vibrant living textures of our lives—all the more vibrant because we are only occasionally conscious of their humming vitality” (2002: 297). The body is a material object represented and culturally constructed throughout history; embodiment tends to arise from perceptions and depends on our experiences as subjects. Hayles goes even further in “Flesh and Metal” by suggesting that both these terms must be understood not as static entities, but rather as ongoing processes which emerge from social relations and interactions with the environment (2002: 298-9).

The disentangling of the physical body and enculturated experience of embodiment is important, since distinguishing between the two helps us to theorize performances beyond essentialist notions of liveness. Instead, we can begin to think about and discuss a broad spectrum of intermedial activities involving co-presence, immediacy and embodied interactions.

### **Technology: Recent Disciplinary Concerns**

Like theatre, computing has recently emerged from the traditional space of the research lab to become ubiquitous throughout society. Both home computers and

ubiquitous devices like the cell phone have proliferated to such a degree that they seem a normal part of everyday life, despite being relatively recent technological developments. With the growth of the Internet in the late 1990's, connective devices not only dominated physical space, but also opened the door to new virtual spaces as well. The emergence of virtual space as a concept went hand in hand with the imagined potentials of virtual reality, which promised to deliver users from the "meatspace" of embodied existence to an infinitely mutable space of mind and code.

More recently however, theorists who discuss the connections between technology and art have abandoned the overheated rhetoric of VR in favor of concerns that sound strikingly similar to those of Environmental Theatre or site-specific art. Discussing narrative and Internet-based art, Marie-Laure Ryan remarks that the "seemingly straight trajectory leading out of the constraints of real space into the freedom of virtual space is now beginning to curve back upon itself, as the text rediscovers its roots in real world geography" (Ryan 2004:21); such a discussion of real and virtual spaces that must be reconciled parallels Nick Kaye's notion of "real" and "ideal" spaces that must be worked over though performance (Kaye 47). In the field of geography alone, there has emerged a realization that narrative is an important means of synthesizing diverse, heterogeneous phenomena, "a distinct form of knowing" that draws together "place as the relative location of objects in the world, and place as a meaningful context of human action" (Entrikin 10). This emphasis on the narrativization of experience parallels the role of the spectator in place-based artworks as an active co-writer of the meaning of a given site (cf. Thrift 1991; Kwon 2004). The locatedness of

subjectivity is coming to be recognized as an important aspect of science, which acts to position “situated and embodied knowledges against various forms of unlocatable and so irresponsible knowledge claims” (Haraway 1988:583); this emphasis on embodiment and non-totalizing perspectives is also central to discussions of site-specificity (Kaye 2000).

This recent emphasis on perspective and the participatory construction of meaning extends to human-computer interaction (HCI) as well. As Brenda Laurel notes in her provocative study *Computers as Theatre* (1991), “feel[ing] yourself participating in the ongoing action of the representation is one of the hallmarks of digital interactivity” (20); the computer interface is seen as a representation that one performs inside of. This attitude towards immersive representation mirrors Richard Schechner’s early experiments in Environmental Theatre or Boal’s metaxis, both of which attempt to position the audience and performer within the same performance frame (Schechner 1994; Boal 1995). The graphical user interface (GUI) of desktop computing resembles the workings of theatrical staging, except that the audience is on the stage along with the actors:

In a theatrical view of human-computer activity, the stage is a virtual world. It is populated by agents, both human and computer-generated, and other elements of the representational context (windows, teacups, desktops, or what-have-you). The technical magic that supports the representation, as in the theatre, is behind the scenes. Whether the magic is created by hardware, software, or wetware is of no consequence; its only value is in what it produces on the “stage.” In other words, *the representation is all there is.* (Laurel 17)

This action-inside-of-representation is seen as one of the hallmarks of human-computer interaction, and parallels attempts in contemporary performance to encapsulate the audience within a place-based mise-en-scène constituted through perceptual framing.

More recently, the concepts of “situated computing” or “embodied interaction” have been prevalent in HCI (Dourish 1999; 2000; 2001). Embodied interaction builds on two research trends in computing. The first, tangible computing, uses real world objects embedded with computing capabilities as a way of interacting with computers. The second, social computing, incorporates ideas from sociology—including social use, practices and meaning—in order to understand how people actually use computers in the real world. Both of these research trends attempt to leverage the ways we interact in the real world everyday and apply them to the way that computers and computer interfaces are designed (Dourish 17). Embodied interaction assumes a participative status on the part of a user who is deeply embedded in a world of cultural artifacts and social relationships. This means that we must recognize “that interaction is intimately connected with the settings in which it occurs” (Dourish 19). This perspective, like Laurel’s, recognizes the significant role that the spatial environment plays in determining how we interact with computer and representations.

Laurel’s definition of interactivity and Dourish’s concept of embodied interaction are important for considering forms of computing that aspire to be totally immersive, such as Virtual Reality. VR allows users to interact with a computer-simulated environments through the use of head-mounted displays, data gloves and force-feedback devices. As much a cultural imaginary as an actual technology (Ryan 1997), VR has

been equally over-hyped by the media and hobbled by technical limitations. Processing power, image resolution and communication bandwidth, not to mention the unmanageable size and expense of most VR equipment has severely limited the actual use of the technology, despite its many promises. Frederick Brooks paraphrases Ivan Sutherland's early visions of the technology:

Don't think of that thing as a screen, think of it as a window, a window through which one looks into a virtual world. The challenge to computer graphics is to make that virtual world look real, sound real, move and respond to interaction in real time, and even feel real. (Brooks 16)

Sutherland and Brooks grant the real and virtual an equal ontological status, a common trope of VR discourse. This conflation between the real and the representation forgoes the rich set of interactions that result from their juxtaposition through metaxis. Somewhat ironically, this disavowal of the real meant that human factors were largely ignored, resulting in many users of VR becoming physically ill, experiencing headaches and repetitive stress injuries from using the equipment (Stanney 28). Furthermore, the rather solipsistic nature of early VR—often having a single user experiencing a world within a cumbersome cocoon of technology—completely ignored the social needs of the user by restricting them from interacting with others (in both virtual space and in reality).

When VR fell short of over-hyped expectations in the late 1990's, alternative models and cultural imaginaries of computing emerged, not the least of which are ubiquitous computing, and its cousin Locative Media. Ubiquitous computing is defined as the “third wave in computing,” where several computing devices are available to each

user, causing computing to fade into the background of the everyday environment; “[w]here virtual reality puts people inside a computer-generated world, ubiquitous computing forces the computer to live out here in the world with people,” notes Mark Weiser (1991). The miniaturization of computers and their integration into a variety of products (PDA’s, tablets, cell phones, and similar devices) creates a situation where technologies are pervasive and portable, rather than relegated to offices and desks.

The convergence of ubiquitous computing with Global Positioning System (GPS) devices has resulted in a set of technologies and art practices known collectively as “Locative Media”. In many ways Locative Media is a response to the decorporealized, desktop computer experience of net art; the mobility of handheld computers and cell phones means that art can finally move into and engage with the world outside the gallery and the computer lab. Locative Media represents one of the most interesting examples of performative metaxis, since the application of GPS and wireless data allows the user to compare virtual data with a geo-referenced point in reality. Drew Hemment, AHRB Research Fellow in Creative Technologies at the University of Salford, remarks, “locative media uses portable, networked, location aware computing devices for user-led mapping and artistic interventions in which geographical space becomes its canvas” (2004). An explosion in the availability of GIS (Geographic Information System) mapping, satellite photos and open source software combined with the ubiquity of GPS receivers, cell phones, wireless internet, personal walkmans and PDAs have allowed artists to integrate a sense of place into their works in ways that were not previously possible. Early experiments such *Urban Tapestries* (2004), which allows users to

textually annotate the streets and buildings of downtown London; *Yellow Arrow* (2004), which uses stickers printed with a web address to denote points of interest; and *Sonic City* (2004), which enables users to create a real-time personal soundscape of electronic music by walking through urban environments, have all served as examples for subsequent artists, and illustrated the versatility of locative practices for producing engaging reconfigurations of the urban environment.

The uses of locative technologies are still largely emergent due to their newness as a medium; arts practitioners are part of a larger trend of exploring what they can and cannot do. The focus on the novelty of ubiquitous technologies in art tends to occlude other complimentary discourses that would situate projects such as these within larger historical trends in the social sciences, humanities and fine arts. While there are exceptions to this rule—the work of Howard Rhinegold (2003), Jane McGonigal (2006) and Anne Galloway (2008) immediately come to mind—many writers see these projects as a technological challenge, or as a new social networking tool, rather than a public art practice. What this means is that while much has been written about how interactive technologies work or their possible social impact, comparatively little has been written on how such projects work theatrically to produce their effects for audience members, or where these projects fit within a larger historical framework of public performance.

As technologies move out of the lab and become more enmeshed with the practices of everyday life, the lines between real and virtual worlds are increasingly blurred. Indeed, the two seem to have a reciprocal relationship: over time the real becomes more like a simulation, while simulations become more real and lifelike.

Somewhere in the middle of these two extremes are the points at which the two are in close contact, dynamically interacting with each other to produce visible effects. Like Kaye's "real" and "ideal" spaces that must be reconciled in site-specific performance, the challenge of these new technologies lies in discovering ways to produce useful relationships between information, perception and the environment, in order to change the way that users relate to the spaces of everyday life.

### **Performance and Technology: A Taxonomy**

Digital Performance, as defined by Steve Dixon and Barry Smith, "concerns the conjunction of computer technologies with the live performance arts, as well as gallery installations and computer platform-based net.art, CD-ROMs, and digital games where performance constitutes a central aspect of either its content (for example, through a focus on a moving, speaking or otherwise 'performing' human figure) or form (for example, interactive installations that prompt visitors to 'perform' actions rather than simply watch a screen and 'point and click')" (Dixon x). *The Digital Performance Archive* (DPA), an online archive of performance works funded by the UK Arts and Humanities Research Council, was designed to record and analyze performance works through 1999 and 2001 as the foundation for Dixon and Smith's book *Digital Performance* (2007). The archive's mandate was as follows:

*The Digital Performance Archive* (DPA)—<http://ntu.ac.uk/dpa/>—is a research project documenting developments in the creative use of computer technologies in

performance, from live theater and dance productions that incorporate digital media to cyberspace interactive dramas and webcasts. DPA also collates examples of the use of computer technologies to document, discuss, or analyze performance, including specialist websites, e-zines and academic CD-ROMs. (Dixon and Smith 9)

The archive provides a fascinating snapshot of the range of performance projects undertaken in the period. However, the site does little in the way of categorizing performances into a comprehensible taxonomy. Likewise, *Digital Performance* is sectioned according to issues of bodies, time and spaces, which, although fascinating, provides little in the way of disciplinary categorization.

This frustration with a lack of working definitions led Nadja Masura to create the website “The Search for Digital Theatre” (Masura 2002) in order to aid her in her Ph.D. thesis, entitled *Digital Theatre: A Live and Mediated art Form Expanding perceptions of Body, Place and Community* (Masura 2007). After two years of research and categorization, Masura came to recognize Digital Theatre as a subset of Digital Performance, distinguished by the “synthesis of coexistence of ‘live’ performers and co-present audience with digital media in a manner which contains spoken words or narrative elements and limited interactivity/participation, thus retaining at least limited distinctions of performer/audience (or message sender and receiver) roles” (Masura 2007: 6). As a hybrid form of the live and the mediated, Masura sees Digital Theatre as building on the generative, communal and indeterminate aspects of Traditional Theatre, while also applying the networked, reconfigurable and mutable aspects of the digital.

Masura's criteria for categorizing performances as Digital Theatre, based on her research of the DPA are as follows:

- 1) **"Liveness" or Co-presence:** It is a "live" performance placing at least some performers in the same shared physical space with an audience ... It is essential that a sharing of public space occurs at the site of the primary artistic event.
- 2) **Digitally Enabled:** The next necessary condition for creating Digital Theatre is the presence of digital media in the performance. The performance must use digital technology as an essential part of the primary artistic event (not solely for archival or broadcast purposes).
- 3) **Limited Interactivity (or Participation):** The performance contains only limited levels of interactivity, in that its content is shaped primarily by the artists for an audience. While interactivity can apply to both the interaction between humans and machines and between humans, I will be primarily concerned with the levels of interactivity occurring between audience and performers (as it is facilitated through technology).
- 4) **Spoken or Language Content:** The performance's content should contain either spoken language or text which might constitute a narrative or story, differentiating it from other events which are distinctly dance, art or music.  
(Masura 2007: 4-5)

This set of categories is useful for defining the subset of Digital Theatre within Digital Performance, with "liveness" being the primary criterion. Masura is fully aware of the of

the disciplinary debates this word has provoked, most notably between Peggy Phelan and Phillip Auslander—debates I addressed earlier in this chapter, along with a necessary reframing of that disputed term in relation to the body and embodiment.

Masura's definition of Digital Theatre is well thought out, but not wholly unproblematic, since it privileges liveness and the theatre building as a privileged site. It is an appealing framework for what it includes, but equally interesting for what it excludes. She observes that "outside of the parameters of Digital Theatre, are what are called Desktop Theater and Virtual Theatre. These are digital performances or media events which are created and presented on computers utilizing intelligent agents" (2007: 11). Masura's definition of "Desktop Theatre" is essentially what Marie-Laurie Ryan, Brenda Laurel Janet Murray and others have called "Interactive Drama" (Laurel 1991; Ryan 1997; Murray 1997) or text-based "Interactive Fiction" (Montfort 2005). The use of the term Interactive Drama is a bit ill conceived, considering that in Performance Studies the term "drama" typically denotes the written text, while "theatre" denotes a *performance* of the dramatic text (or score). The term is useful however, since it has a history of use in the field and distinguishes these types of works from theatre that incorporates interaction with the audience—like Happenings or Environmental Theatre for example. Furthermore, in Interactive Drama there is in a sense only text—the dramatic text and the computer code that generates the mimesis.

Virtual Theatre may incorporate VR technologies and be performed "live" for an audience, or alternately, involve a user exploring a virtual world of intelligent agents. The most extreme visions of VR Theatre do away with the *mise-en-scène* entirely,

through a process of immersion in virtual space. The “holodeck” of Star Trek that Janet Murray alludes to in *Hamlet on the Holodeck* (1998) is a theatre of this sort, but for the most part this theatrical form that exists only in the social imaginary (Ryan 2002:590). Marie-Laure Ryan sees VR and Interactive Drama merging into the same field as technology advances (Ryan 1997), but as discussed in the previous section, several technological difficulties need to be overcome before this can happen. The emphasis on interactive *sensory* immersion in VR, in contrast with an emphasis on *narrative* immersion in Interactive Drama, make them relatively distinct media, at least in the near term.

Augmented Reality (AR), Alternate Reality Gaming (ARG) and Locative Media practices are also excluded, one assumes due to their historical emergence from computing and mobile telephony labs rather than the academic discipline of theatre. Site-specific practices are not addressed, presumably since these practices did not have a large following outside of the UK until very recently, and because the use of technology in site-specific art can vary widely depending on the artist and the site. All of these forms have a very specific, dialectical approach to the real and representation, which is quite different than either traditional theatre (where real, embodied actors perform a representation) or virtual reality (where the representation often imitates the real).

So within this taxonomy of Digital Performance there are four broad theatrical categories: Digital Theatre, Interactive Drama, Locative Media and VR Theatre. All of these are set in relation to Traditional Theatre, which does not (overtly) use digital technology in performance. At the Association for Theatre in Higher Education (ATHE)

conference in 2007, Stephen A. Schrum proposed no fewer than eight categories in his “Proposed Taxonomy of Digital Performance” (fig. 4.1). Many of Schrum’s categories, such as “Digitally-Aided Theatre” (where digital devices are used in pre-production) or “Cyber-Adapted Theatre” (where content involves topics of virtuality) seem somewhat arbitrary, including preproduction and content as factors in determining if a show is “digital” or not. Furthermore, Schrum’s divisions can be seen as a subset of the categories provided above, which have a prior history of usage in the field.

Traditional Theatre, Digital Theatre, Interactive Drama and VR Theatre each emphasizes a different aspect of Masura’s criteria: “liveness,” digital technology, language (story or plot) and open-ended interactivity respectively. Locative Media constitutes a broad spectrum of practices that can foreground any of these criteria (converging with site-specificity when it emphasizes the “live”) but is distinct due to an emphasis on material referents and specific places. Each form emphasizes a different aspect of performance and space, and each has its own unique tropes, challenges and set of perspectives on theatrical representation.

### **Thesis Structure**

Each chapter of this thesis examines a different part of this Digital Performance taxonomy, showing how each form uses technology to produce, inform or interrogate specific spaces. There is some divergence from the five part model of Traditional Theatre, Digital Theatre, Locative Media, Interactive Drama and VR Theatre. Since Locative Media is

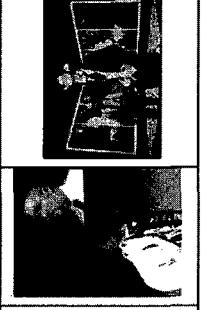
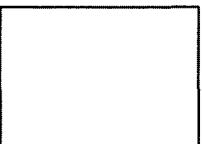
TRADITIONAL	DIGITALLY-AIDED THEATRE	MULTIMEDIA THEATRE	DIGITALLY ENHANCED THEATRE	CYBER-ADAPTED THEATRE	COMPUTER-MEDIATED PERFORMANCE "INTERACTIVE HOLOGRAPHIC THEATRE"
Production methods that do not include any digital technology.	Technical elements are designed with or supplied by digital technology and are noticeably part of the performance, in service to the play/prediction	Use of technology (though not necessarily digital) as part of the performance, in service to the play/prediction	Technical elements are designed with or supplied by digital technology and are part of the performance; Effects are produced live or "rendered in real time" (Dixon, 385) rather than canned, pre-recorded, or preset;	Plays about cyberspace subjects; performed in Real Life (RL)	Full immersion in a virtual world Full interaction with characters and objects
Production methods include any digital technology.	includes computer-aided design for sets and lights, digital audio production, electronic communication	includes computerized light board, digital sound elements (designed, recorded, and played back), projections; these could be done by analog methods but work better with digital.	Example: Studio Z's Monologue Show (1995); distant playwrights communicate with directors and authors; even is staged live.	Plays created and set in cyberspace; performed in cyberspace	The use of the quotation marks indicates that it is something we don't yet have....
		Example: A 15-minute sunrise light cue.		Example: <i>The Perm</i> , by Zavante Hegel, directed by Phorkyad Acropolis, (performed in Second Life July 13 and 14, 2007).	Examples: <i>AviSeduction</i> by Stephen Schrum, (performed in ATHEM00 in 1996), <i>Gestos</i> , conceived by Stephen Schrum (to be performed in Second Life, August 2007.)
					Note the change in nomenclature from "theatre" to "performance" as we move to computer-mediation. As we traditionally define theatre, the interaction between an actor and an audience, what we present online is not theatre, although it may be performance. However, if the virtual performance created by the interaction between performer and the audience can be made "real" (given the imagination and willing suspension of disbelief), perhaps we need to expand our traditional definition of theatre, and can then create theatre (more than simply performance) in online and cyberspace venues.
					
					

Fig. 4.1 Schrum's Taxonomy of Digital Performance (2007)

such a broad field of practice, I have broken it up into two chapters, with one focusing on the role of the audience and performativity in a spatially dispersed work and one examining an actor-based performance at a very specific site. These are dealt with separately in Chapters Three and Four in order to underscore the range of work falling under Locative Media and Site-Specific Art, which despite using differing practices have a remarkably similar approach to real and representation. Since true VR Theatre is still largely a cultural imaginary, I have similarly divided up Interactive Drama—which many assume will eventually become VR Theatre—into text-based Interactive Fiction (IF) and multimedia Interactive Drama (ID). IF provides a historical precedent to ID, although being distinctly different from it. Many of the insights into Interactive Fiction carry over into other forms of text-based performance such as MUDs (Multi-User Dungeons), so I feel this is a useful division which illustrates where the technology of IF and ID have been and where they are heading. The chapter on Interactive Drama specifically deals with a set of spatial, narrative and representational concerns that are different than IF, and gestures towards the genre eventually becoming the kind of “holodeck” media that VR practitioners imagine.

While some might argue that departing from the structure taxonomy detracts from its explanatory power, I do not believe this is necessarily the case; the taxonomy itself represents sets of practices which are fluid by their very nature and historically emergent as this thesis is being written. Surely categories like VR Theatre will be filled in as new practices emerge—and their media-specific affordances become apparent—and perhaps new categories will have to be added over time. What is provided here is a snapshot of

representative cases and their spatial concerns at a given historical moment; this framework represents a developing structure, and as such should be considered a touchstone, not a prison.

The current chapter has looked at the historical progression of Traditional Theatre, from its use of conventional, *ritualized spaces* to the use of non-traditional performance spaces in the world at large. Following this section of Chapter One, some of the recent disciplinary concerns that inform Traditional Theatre were examined, particularly the “liveness debates” that have shaped discussions of the use of technology in performance.

Chapter Two examines Digital Theatre through the work of Robert Lepage and his group Ex Machina. Paying particular attention to one of his most recent works, *The Blue Dragon* (2009), I examine how Lepage reconfigures the theatrical stage through the use of technology to create a *space of intermediality*. Using digital effects, Lepage’s work replicates techniques from painting, film, television, digital mapping and photography to illustrate the role of theatre as a meta- or hyper-medium, capable of incorporating any other medium within its frame. The effect is one of space-time compression, where diverse spaces and times are able to be incorporated and intermingle on the stage. Similarly, the juxtaposition of media on the stage becomes a dialectical commentary on the media-specific capabilities and techniques of each form, and what it can and cannot do. Through the use of sound, the play encapsulates the audience in a surround-sound environment, drawing his listeners into the action of the stage. Finally, the thematic work of the play itself is designed to comment on the role of theatre and art in a digital age.

Chapter Three examines *Locative Media*, specifically the work of Toronto's *[murmur]* project (2003). The term Locative Media is a catch-all phrase which describes a set of new media practices that explore the interaction between data networks and the physical space of the urban environment. In practice the concept includes "everything from mobile games, place-based storytelling, spatial annotation and networked performances to device-specific applications" (Galloway and Ward 2005). The field emphasizes the ubiquity and mobility of technologies that allow for information and narratives to be available anywhere, at anytime. Metaxis occurs in the overlap of information (available through cell phones, GPS, portable computers etc.) and the audience member on the street. There is great deal of overlap with Site-Specific Art, which is discussed, particularly with regard to some of the theoretical underpinnings that these two forms share.

The *[murmur]* project is a spatial annotation artwork that uses cell phones to provide place-based narratives. I examine the project's roots in Situationist performance, the auditory mise-en-scène created though cell phone use, the semiotic affects of pervasive performance, and the similarity of their work to a real-world, spatial hypertext narrative. In particular, I explore the notion of the *performativity of space* that occurs when multiple narratives overlap the same space over time, and how the exploration of the artwork acts as a performative engagement with the city.

Chapter Four continues an engagement with *Site-Specific Art*, emphasizing theatrical performance over the overt use of technology. Like Locative Media, site-specific practices are concerned with the ability of art to inform and change our

perceptions of the everyday built environment. However, where Locative Media is often concerned with factual data and its connection to particular places, site-specificity tends more towards the artistic or the fantastic. The juxtaposition of “real” and “ideal” spaces inherent in site-specificity can take the form of traditional actors performing in a particular place, but can also include the use of technologies such as iPods or walkmans to create a mobile form of “radio drama”. My primary example in this chapter is Radix Theatre’s *Swedish Play* (2002), which uses FM radios and live actors to perform site-specific, Invisible Theatre in a Vancouver IKEA. I examine how Radix reworks the techniques of Invisible Theatre and radio drama , and how the work reveals an *acoustic unconscious of space* through the use of live performance and FM radio technology.

Chapter Five looks at the field of *Interactive Fiction*, and references the early game *Adventure* as an example of this form of “Desktop Theatre”. I assert that the beginning of the genre is intertwined with the emergence of both home computing and the early APRAnet. As such, the command prompt interface (:) of these games is not only an invitation to explore caves and dungeons, but also an invitation to explore the inner workings of computers and early computer networks. Though we now take it for granted, these early interactive fictions are the first games to promote the idea of software as a virtual space. As such they represent a certain kind of epistemology which cast Interactive Fiction and computers as *spaces of exploration*. They also entice the user into performing in this textual space and co-author the game script. In a sense, these early games were not just training users in how to solve puzzles and riddles, but training them in the use of particular computer interfaces and metaphors. The chapter also compares

various software packages for creating Interactive Fiction, noting their strengths, weaknesses and ways in which they could be improved.

Chapter Six looks at *Interactive Drama* (ID) and its relationship to Interactive Fiction, noting how its grounding in theatre and drama has shaped its development. Producing *spaces of representation and agency*, Interactive Drama comes the closest to realizing a fully interactive, improvisational performance with virtual actors. The genre is compared to other non-linear media in order to highlight the difficulty of balancing user agency with a strong narrative structure—a problem fairly unique to the genre. I examine several ID systems and their approaches to generating narrative, noting their applicability to specific story genres. This chapter also discusses the concepts of narrative intelligence and expressive AI, suggesting that what is holding back ID as a form may not be software *per se*, but closer disciplinary relationships with traditional performance techniques, theatre semiotics and narratology. I also suggest some ways that Interactive Drama might be improved given recent developments in technology.

My final chapter summarizes the ways in which these various expressions of Digital Performance open up new ways of thinking about real and virtual spaces. It offers some final thoughts on what it means to perform inside of a representation and speculates on future avenues of interdisciplinary research in the field.

## **Chapter Two:**

### **Digital Theatre and the Space of Intermediality in Lepage's *Blue Dragon***

Digital Theatre builds on traditional theatre by combining the embodied actor and co-presence of the audience of “live” performance with the mutability and connectivity of digital technologies (Masura 6). Using a conventional traditional theatre buildings grants continuity with an audience’s horizon of expectations of the theatrical event, and maintains the social and communal aspects of viewing a real-time performance. The use of the mise-en-scène allows theatre’s perceptual framing and semiotic practices to remain intact: “theatre turns all objects into signs to be/perceived. Compared with other media that transmit objects to another space and/or another time, or store them to make worlds out of them there and then, theatre processes these objects into worlds here and now, while simultaneously leaving them as they are” (Boenisch 2006: 114). In contrast to digitization, which separates the sign from its referent in time and space, theatre overlaps the sign and referent, producing a perception where every material object on the stage is also a sign or symbol of different meaning.

Digital theatre largely maintains conventional relationship between actor and audience, and although there is very little interactivity, feedback between the two is almost instantaneous, given their close proximity. The amount of information conveyed through human bodies on the stage easily outdoes anything currently achievable through digital technologies, as it is perhaps the densest signifier of human communication. The use of human actors allows for a generative flexibility far greater than digital systems:

actors can improvise, change performances from night to night and easily adapt to changing circumstances, whereas digital systems typically cannot.

When we speak of digital theatre, we are talking about the juxtaposition of the embodied actor (as a signifying medium) with technological media, including but not limited to: digital video, digital projection, animated sets and characters, digital robotics, online writing and real-time audience feedback, interactive content creation, motion capturing, motion triggering, web and video conferencing (Masura 10). Used separately or in concert with each other, these technologies contribute to a staging that plays traditional theatre media (sounds, set, lights and costumes) off of digital technologies and the embodied actor.

Digital theatre is in many ways associated with theories of intermediality, which examine the interplay of digital and non-digital media objects due to their empirical and qualitative differences on the stage (Chapple & Kattenbelt 18). The intermedial juxtaposition of media on the stage demands an “engagement with theoretical frameworks drawn from selected areas of performance, perception and media theories, and philosophical approaches to performance” (Chapple & Kattenbelt 34). While theatre has always incorporated other media into its mise-en-scène—causing some to suggest that theatre has always been intermedial—as a critical approach intermediality requires that we deal with each form of media on the stage through its own set of discourses, rather than subsuming all of them into a monologic (theatrical) media analysis. In short, intermediality opens up theatre studies to fields of communications, media studies and computing in the same way that anthropological and sociological accounts of theatre by

Goffman, Turner and Schechner paved way for performance studies in the 1960's.

Intermedial analysis marks a détente between sides of the “liveness” debates by acknowledging the interdependence of the “live” and the mediated in defining their oppositional characteristics.

The term intermedia itself is largely misunderstood, and goes back as far as Samuel Taylor Coleridge in 1812, in order to “define works which fall conceptually between media that are already known” (Higgins 52). Popularized by Dick Higgins in his essay “Intermedia” (1965), the term was used to conceptualize works that did not fit into traditional categories of painting, sculpture, theatre or music. Higgins saw such categories as outdated, and unable to account for the Happenings of Alan Kaprow, the Action Music of John Cage or the events of Fluxus (Higgins 50). Instead he proposed that artists should abandon media-specific art in favour of intermedial practices which fall between media.

While there has been much debate over what constitutes intermediality since the late 1990's—particularly among French and German theorists—one of the more useful definitions comes from Henk Oosterling, who sees the “inter” of intermediality as a “going back and forth from one medium to the other, it is a movement in which positions are articulated in the awareness that they are principally relational and provisional” (43). Relating the experience of the intermedial to French philosophies of difference, Oosterling prioritizes the conscious construction of difference (or *diffrance*, to use Derrida's term) as central to intermedial display. The tension of relational differences between media—each of which encapsulate their own histories, philosophies and specific

characteristics—makes intermedia distinct from multimedia or a *Gesamkunstwerk*. The power of relational difference is derived from the fact the “‘we cannot even recognize the representational power of a medium except with reference to other media,’ as Jay Bolter and Richard Grusin write,” but this also implies that, “any medium will to some degree define the *specific mediality* of the media that contextualize it” (Remshardt 41). As a system of oppositional differences, media on the stage define each other through their contextual juxtaposition.

However, this does not imply that media always remain in bounded relation to each other. Media literacy means that artists produce works that exist between media and between all types of semiotic codes. “Realized as the intersection of different practices, technologies, languages and sign systems,” remarks art historian Jill Bennett, “intermediality posits a broad transdisciplinary sphere of operation, open to – but not restricted to – interventions in aesthetic form” (434). Media literacy on the part of the artists implies virtuosity in the mixing of codes and critical discourses, as well as media, with an awareness of the histories and disciplines from which these codes emerge. The performance of intermediality is always a “co-production, operating at a number of levels: between artist and subject (both with a particular relationship to the medium); between artist and art theorist; between the art work and the interdisciplinary knowledge nexus in which it is created (Bennett 442-3). A meta-analysis of media codes and disciplinary knowledge is thus built into the work in advance, with an eye towards reception; intermedial works thus combine Oosterlink’s relational differences between

media, while at the same time mixing codes *across* them in order to foreground the specific knowledges that produce or inform them.

For Peter Boenisch, intermediality “is an effect created in the perception of observers that is triggered by performance – and not simply by the media, machines, projections or computers used in a performance” (2006: 103); it exists at the level of reception, through the observation and interpretation of media juxtapositions. “It is thus very literally located inter media, inhibiting, blending and blurring traditional borders between genres, media, sign-systems, and messages … Instead of closing down the multiple semantic potential offered into one coherent meaning, intermedial performances derail the message by communicating gaps, splits and fissures, and broadcasting detours, inconsistencies and contradictions” (2006: 116). This disruption of unity ultimately acts as a self-reflexive demonstration of mediation and its workings—a kind of *Verfremdungseffekt* that causes the audience to question both the medium and its message. This characteristic reflexivity is a necessary corrective to the ideological seamlessness of realism or the *Gesamtkunstwerk*, as well as that of our media-saturated environment in the early twenty-first century.

Digital theatre and the intermediality upon which it depends are not just a product or synthesis of the live/mediated debate, but its very performance upon the stage. Kattenbelt observes that theatre is at a point of redefinition: “not as a composite art, nor as a dramatic art, but as the stage of intermediality” (Chapple & Kattenbelt 129). As a display of differences, codes and knowledges, the intermedial aspect of digital theatre enacts the human in relation to the machinic—not as means of demonstrating one’s

superiority over the other, but in order to determine their medial aptitudes and limitations, as well as their capacity for symbiosis and extension in artistic practice. In this sense, by performing media, we gain a further understanding of what they can and cannot do, and expand our ability to produce various meanings on the stage.

### **Analytical Framework**

Given this multitude of defining features of intermediality, how then should one approach the analysis of a work of digital theatre? Christopher Balme, in his article “Intermediality: Rethinking the Relationship between Theatre and Media” (2004), suggests that we need to be “aware of media (1) as a framing medium (Rahmenmedium), (2) on an internal level, as media-within-media (Binnenmedien) and (3) on a thematic level” (Balme 11). He then goes on to use these analytic categories to examine Robert Lepage’s *The Seven Streams of the River Ota* (1994). Balme’s framework is effective, but it comes very early in recent discussions of what constitutes intermedial performance. In light of changing definitions of intermedia, and considering the multiple defining features discussed above, I propose the following analytical framework:

- 1) **Hypermedium:** Following Bolter and Grusin’s usage of the term as “style of visual representation whose goal is to remind the viewer of the medium,” the hypermedium plays on our desire for immediacy while at the same time producing an awareness of the medium and incorporating all others within its frame (272). Roughly equivalent to Balme’s “framing medium”, theatre as a

hypermedium is able to “incorporate all the other arts” and “all media into its performance space” (Kattenbelt 37). In a theatrical analysis, we must be aware of the hypermedium itself and how it functions to produce framing, representational, meta-theatrical or alienating effects; similarly we must show how other media relate to the hypermedium of theatre and its dominant issues of embodiment, co-presence, immediacy and transformation.

- 2) **Intermedia:** Ooosterlink’s prioritization of difference as a governing factor in intermediality suggests that we must examine both the specificities of media and their relational differences within the performance frame. We must examine the conventions of each medium, how conventions are performed on the stage, and conversely, how differences between media are emphasized through their juxtaposition.
- 3) **Remediation:** While for Bolter and Grusin remediation is a process by which new media borrow from and refashion older media, and *vice-versa* (60), Bennett’s discussion of intermediality shows that remediation is not always an “updating” but rather a process of code-mixing, in which “practices, technologies, languages and sign systems” of one medium are transposed onto another (434). Remediation in this sense is not just a revision of form, but a form of aesthetic intervention that draws attention to the codes and conventions of a given form.
- 4) **Literacy and Reception:** Given Bennett’s emphasis on medial co-production and Boenisch’s focus on acts of perception, we must account for the media

literacies, specific knowledges and phenomenological aspects involved in the reception of a particular work for a particular audience. This includes the production of “gaps, splits and fissures” which defer the foreclosure of meaning, as well as changes of focus, media-reflexivity or meta-discursive moments on the stage.

- 5) **Thematic:** Following Balme, a specific medium can act as a “central motif, connecting the various strands of action” on the stage (11). This medium can be either a covert medium, reflective of the time of production or diegesis, or an overt medium which is used as an extended metaphor on the stage. Closely linked to hypermediacy and our fascination with the medium itself, the thematic medium of a given performance is often an expression of a desire: for the medium itself, for a conceptual unity, or as an expression of the author’s relationship to the hypermedium.

In the spirit of Balme’s early work analyzing *The Seven Streams of the River Ota* (1994), I would like to extend his initial engagement with Lepage’s work in digital theatre by examining the role of intermediality in *The Blue Dragon* (2009).

### **Lepage’s Intermedial Experimentation**

Robert Lepage’s is perhaps the most media-adept directors in the world today. His theatrical company, Ex Machina, is expressly devoted “to the question of exploring how different media can interact and influence each other,” and Lepage himself has

remarked that he is “simply interested in finding out what the theatre of the future is going to look like” (Balme 15-6). He has been described as a “theatre visionary” who has worked in film, theatre, opera and dance; his artistic work is truly global, directing Shakespeare for Britain's National Theatre, designing *KÀ* for Cirque du Soleil in Las Vegas, directing rock concerts for Peter Gabriel and touring Ex Machina's shows worldwide. Since 1997 he has been the head of The Caserne, a multimedia production centre in Quebec City, which allows him to continue his theatrical experimentation. His more famous plays, *Vinci* (1986), *Polygraph* (1987), *Tectonic Plates* (1988), *The Seven Streams of the River Ota* (1994) and *The Dragons' Trilogy* (1985-2003) have won him numerous awards, including the Governor-General's Award in May 2009.

As a sequel to Lepage's *The Dragon Trilogy* (1985), *The Blue Dragon* (as yet unpublished, 2009) continues the story of Pierre Lamontagne (Robert Lepage), who left Canada at the end of the *Trilogy* to study art in China. Now middle-aged and running a gallery in Shanghai, he is currently having an affair with one of his exhibitors, the painter Xiao Ling (Tai Wei Foo). Arriving on a business trip is Pierre's old lover Claire (Marie Michaud), whom we discover is looking to adopt a child, in order to redeem herself from her decadent past. Pierre and Claire reunite but then quickly fall apart; Xiao Ling becomes pregnant by Pierre and ends up forming a close bond of friendship with Claire. The uncomfortable love triangle between the characters forms the majority of the plot and all of them are at crossroads in their lives: Pierre is having a mid-life crisis, Claire wants a child and Xiao Ling is trying to build a future for herself. The play raises

questions of identity, art, commerce, nationalism and the complex relationship between East and West.

The show employs live actors, a trained Chinese dancer, digital projectors, real-time sound visualization, motorized trains, bicycles, a reconfigurable set and simulations of weather; it includes sequences from Shanghai commercials, cell phone photos, paintings, inter-titles, scenic paintings and digital maps. These media play off one another not only as intermedial elements, but as part of an overall composition that illustrates the paradoxes of art, media and life in contemporary China.

### **Calligraphy, Dance and Causality**

The play begins with a prologue by Pierre on the nature of Chinese calligraphy. As he paints each ideogram in front of him, the character is drawn on a screen behind him (fig. 2.1). The three strokes for the symbol of a river symbolize the three characters in play and their intersecting lives; the symbol for a forest reveals a tree and its roots, as well as a woman cradling her child. For each ideogram, parts of the image have abstract meanings that contribute to the whole; unlike the phonetic alphabet, the composition of the image—rather than the sound—contributes to meaning. For Lepage, calligraphy is the central thematic medium of *The Blue Dragon*—symbolizing a fundamental difference between East and West, as well as being a metaphorical reflection on his work as a theatre artist. As we are told in the play's guidebook “calligraphy is a delicate art which a person strives to perfect over the course of a lifetime” (Verdier 11). When asked



Fig. 2.1 -- Pierre painting Chinese calligraphy in *The Blue Dragon*

about the play and why he decided to do a sequel to the *Trilogy*, Lepage remarked that politics and the outlook had changed a great deal in the last twenty-five years, in China, in Quebec and for himself:

I'm past 50 now. There is a moment when you kind of go, Well, it's nice not to look back, but what have you accomplished, and where do you want to go from here? And the character of Pierre Lamontagne has always been a bit of an alter ego for me. We're the same age. We're the same height [Laughs] ... His mid-life crisis echoes the crisis China is going through now. (Morrow 2)

Later, he remarks that “Ex Machina, and my work in general, is always associated with images” (Morrow 3); the ideogram, composed of abstract images and an art perfected over a lifetime, becomes a metaphor of Lepage’s theatrical work to date, and

intermediality more generally. The separate parts of the ideogram, like the characters and media elements that comprise *The Blue Dragon*, contribute to an overall meaning as patterns emerge over time.

A secondary thematic medium is performed in the form of a traditional Chinese dance by Singapore performer Tai Wei Foo. Like the strokes in the river ideogram, there are three dances in all throughout the play, symbolizing traditional, Mao-era and contemporary China (Langston B4). The dances mark major changes in China's history and aesthetics, but taken together they display the threads of the past interwoven into the present and the continuity of artistic production across these periods (significant since artists are often the target of ideological attacks in contemporary Shanghai). This first dance, like Pierre's ideograms, is enhanced by digital projections, in the form of a sound-visualization that seems to move with performer as she makes her way across the stage (fig 2.2).

Like the digital drawing of the ideograms, we do not know whether these projections are being produced by the actions of the performer or if the performer is timing his or her actions to follow the projection. Ultimately this liminality does not matter, as the seeming extension of the embodied actor through technology to produce these magical effects on the stage is another theme of Lepage's overall work. The seamless interplay of actor and technology to the point where causality is irrelevant to the overall aesthetic is an important marker of what Ex Machina attempts to achieve.



Fig. 2.2 -- Tai Wei Foo's traditional Chinese dance with digital projections

(Photo: Erick Labb  /NAC)



Fig 2.3 -- Set of *The Blue Dragon* – Pierre's Apartment



Fig. 2.4 – Set from *The Blue Dragon* – Storefront Scene

### **Sets and Filmic Perspective**

The two-tiered set of the play, composed primarily of metal scaffolding and opaque screens, is mechanically reconfigured throughout the play; each of its surfaces become a screen for a multitude of digital projections throughout the performance (figs. 2.3 & 2.4). Over the course of two hours the set becomes an industrial loft, the interior of an airplane, an intimate restaurant, a train platform, a portrait gallery, an antiseptically modern airport, a river and cityscape, an artist's studio, a nightclub, and a storefront. Playing on our desire for immediacy and simultaneously producing an awareness of the medium, the *mise-en-scène* Lepage creates is a hypermedium unto itself: set changes are largely mechanically driven or digitally enhanced, and we are astonished by these rapid,

theatrical transformations of time and place. We are accustomed to these rapid spatial shifts in film, but not in theatre. The multiple depths and angles of individual projection surfaces (a series interior skylights change their angle to become an outdoor roof in another scene, for example) give us constant visual cues to the three-dimensionality of the stage, reminding us that this is an embodied theatrical space, while at the same time remediating the techniques of cinematic montage.



Fig. 2.5 – Use of projected ideograms in *The Blue Dragon*

Interestingly, when the digital backdrops are static the audience tends not to think of them as projections, but rather accepts them as part of the set; the mediality of the theatrical frame readily incorporates them as just another element of the *mise-en-scène*, and it is only when they become dynamic that we recognize them as a separate medium.

In one scene, Pierre is in his apartment again practicing calligraphy, as Claire and Xiao Ling dine in a restaurant (fig. 2.5). As he paints, the ideogram appears on the red backdrop behind their booth, both reminding us of the digital nature of the set and (literally) projecting symbolic content onto the scene we are about to see unfold. Lepage uses theatre's pervasive trope of transformation in concert with digital technology to reframe our perceptions of the scene, using the representation of a character's thoughts in one space to overlap the actions and discussions of characters in another.

Later in the play, when Claire makes her way by train to the provinces to find a child to adopt and when Pierre bikes across Shanghai, Lepage remediates other techniques from film to give us a sense of spatio-temporal perspective. In the train scene, we first see Claire waiting on the train platform, talking on her cell phone to Pierre and facing out to the audience. After her train arrives, the stage goes dark and we see a multi-section toy passenger train, complete with interior lights, make its way across the stage and the rural landscape. It is both a delightful and humorous effect—audiences have seen this perspective shot before in films many times, meant to show the long, cross-country journey. However, chances are the audience has not seen it on a stage with real trains, complete with sound effects and a view of the Chinese countryside. Lepage remediates filmic conventions and plays on our knowledge of the “long journey” perspective shot.

A similar convention is remediated when Claire and Xiao Ling make their way through the countryside around Shanghai by bicycle. They appear at one side of the stage, pedaling very quickly; however, the bikes move quite slowly, being pulled by wires along a track embedded in the stage. Projections scroll by giving the perspective of

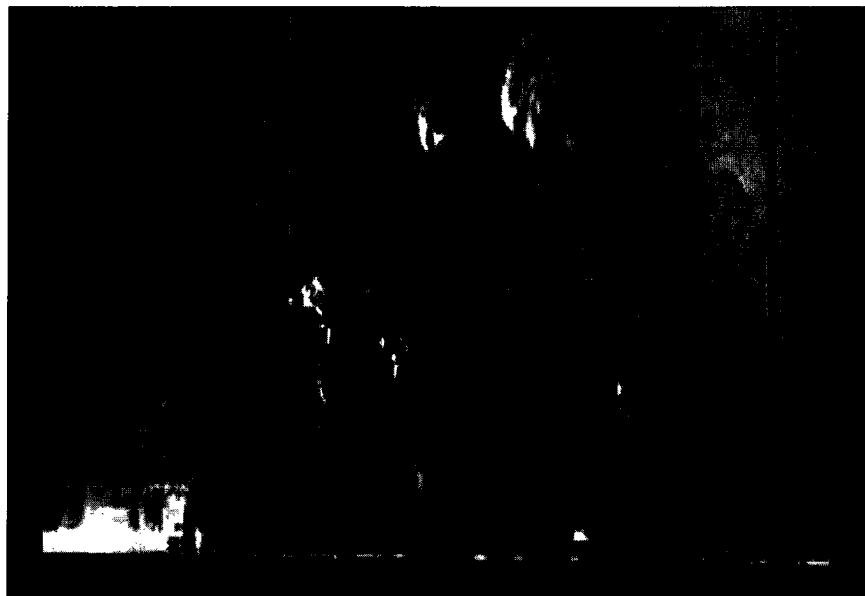


Fig. 2.6 – Remediating filmic perspective

travelling at great speed and we see real, miniature buildings in the distance. In this case, the presence and physical exertion of the actors adds greatly to the overall effect on the audience; the remediation of filmic conventions of speed and motion are combined with embodiment to create something that is truly between film and theatre—intermediality in Higgins' sense of the word—and which astonishes the audience due to its effectiveness and its seeming simplicity.

The landscapes Lepage projects for his audience are highly stylized. During the dance interlude portraying the Maoist Revolution, the backdrop is a classical Chinese painting, while overhead is projected the emblem of the People's Republic of China (fig. 2.7). The remediation of a painting into digital projection mimics the techniques of scenic painting from the early twentieth-century, lending an air of authenticity to the scene in its form and content. The emblem of the People's Republic overhead reminds us

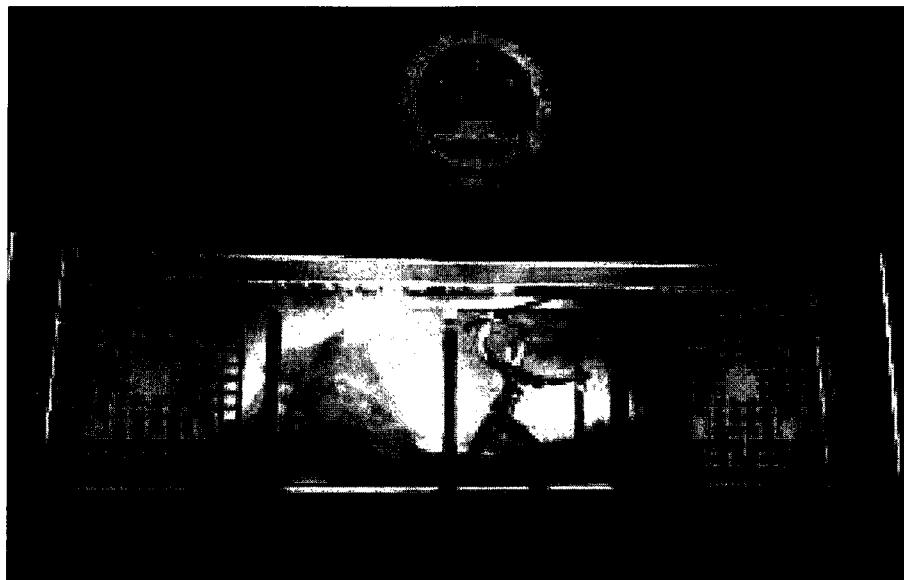


Fig. 2.7 – Remediation of painting for stylized landscape projection

(Photo: Erick Labbé/NAC)

of Slavoj Žižek's discussion of Communist architecture in *Plague of Fantasies* (1997) where he discusses an architectural progression in the 1930's towards flatter and flatter buildings, adorned with larger and larger statuary. The flattening of these buildings to become "a mere pedestal for the larger-than-life statue" of the New Man, reveals a particular ideological "truth" for Zizek: that the Stalinist New Man was crushing "actual living men under his feet" (Zizek 3-4). Here Lepage presents a similar arrangement, with the flat roof suspending an ideological edifice. Contrasting the authenticity of the backdrop and seemingly complementing Zizek's interpretation of the crushing weight of ideology, the dancer, dressed in military garb, moves in a stilted and almost mechanical fashion across the stage. Her motions are regimented and forceful, but the combination of "military" and "dance"—especially compared with the fluidic movements we have

seen previously—come off as parodic and artificial. In this case the relational differences between painting, statuary, costume and the body of actor are juxtaposed in such a way to comment on ideology: the scene is constructed to be authentic visually, but the body betrays a forced complicity in its artistic subjugation to ideology.

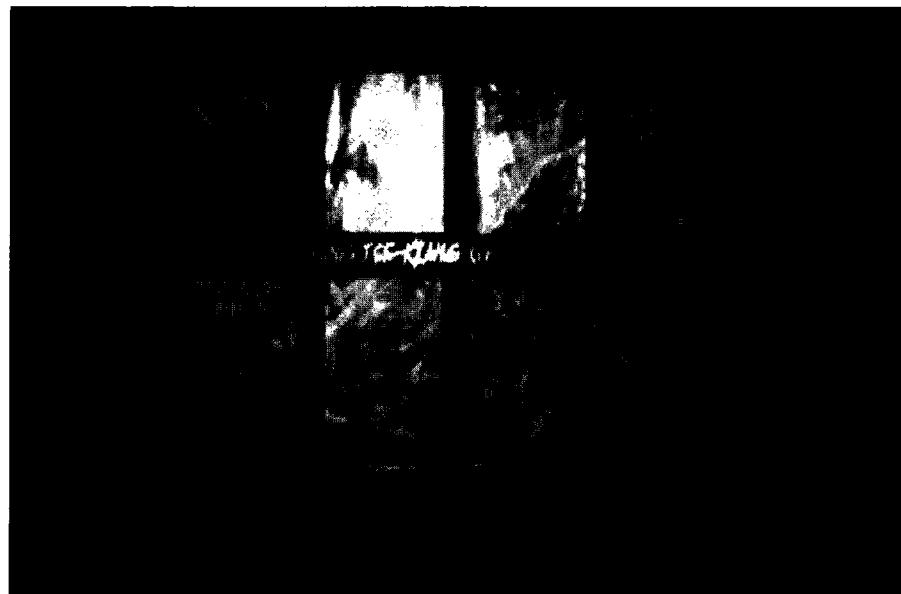


Fig. 2.8 – Projected satellite photos of the Yangtze River

An entirely different landscape effect is used latter in the play in a discussion of the Yangtze River. A series of nine satellite photos is projected on the front curtains. The water actually flows within each of these photos, giving the impression of the vastness twisting nature of the river through its visual multiplication (fig. 2.8). Lepage takes a medium and viewpoint his audience is probably familiar with—that of Google Maps—multiplying and adding motion to it to create an entirely different effect. In film,

travel by a character might be shown though dotted lines on a map; here we have the map, but the passage of time is shown by the segmenting the image into fragments, each showing the flow of water at turns in the Yangtze. The imagery conflates the filmic use of the map with digital satellite imagery to create something entirely different—a kind of Cubist perception of what travelling down the river might be like. What is presented is a filmic convention, crossed with a digital medium, mimicking subjective techniques drawn from painting. It is a curious mix, but one the audience readily accepts due to a familiarity with these media and conventions. In relation to the hypermedium of theatre, Lepage pragmatically uses this scene to keep our attention focused on the story while distracting us from a set change going on behind the curtain. Moreover, he uses filmic convention and our awe of the digital to appropriate one of film's usual advantages over theatre: its ability to rapidly change locations in time and space. It is a bit of slight-of-hand to be sure, but one which is very effective at satisfying filmic expectations within the context of theatre.

### **Special Effects and The Three-Dimensional Stage**

“The Blue Dragon” of the show’s title is one that “is invisible and lives under the snow. He represents death and rebirth. He reveals himself as thunder” (Verdier 7). The dragon is represented in the show by weather effects throughout the show: thunder, lightning, rain and snow (Hill 2009). While not a form of media per se, the representation of rain falling on the windows outside Pierre’s loft and the snow falling

outside towards the end of the show are enhanced by Lepage's use of digital effects (fig. 2.9). The patterns of precipitation are computer-generated and hyper-realistic; traditional theatre would use lighting instruments or fake snow to achieve a similar effect, but the



Fig. 2.9 – Computer-generated precipitation in *The Blue Dragon*

quick changes of place and the hyper-realism of the set rule these out as options. As audience members, we have become accustomed to seeing CGI (Computer Generated Imagery) representations of weather in movies and video games, which have become a standard by which we judge the effects in other media. Deployed in the context of digital theatre, the snow effect in particular amazed the audience, despite our familiarity with it. There are several reasons for this: the remediation of the effect in theatre is unexpected and remarkable; the scale at which it is done—covering the entire stage—dwarfs one's

usual encounter with it on television or video game screen; and finally, the three-dimensionality of the stage and the bodies of the actors adds a quality of depth to the effect that we do not experience in film. The effect “opens up” the stage and makes us aware of its size and dimensions as the snowflakes are projected over the entirety of the set. The sense of expansiveness plays into the Dragon’s symbolic meaning of rebirth as Claire and Pierre are reconciled on the stage.



Fig. 2.10 – Weather effects during Claire’s plane ride to China

In contrast, the thunder and lightning effects exist outside the windows of Pierre’s apartment and outside the plane on which Claire comes to China (fig 2.10). They function as a “chain-of-being” effect, reflecting disruptions in the characters lives. The audience sees the flashes of lightning through the windows: sometimes as distant forks,

but mostly as bright flashes that cascade through the windows onto the characters.

Partially digital and partially a strobe lighting effect, the lightning is followed by the sound of thunder which surrounds the audience. While the same effect could largely be reproduced in film, the dimensionality of the stage again plays a large part in the effectiveness for the audience. The flashes of light that spill though the windows across the set and characters remind us of the “reality” of the theatrical medium; the shifts from darkness to momentary brightness put the characters into sharp, three-dimensional relief, reminding us of their corporeality on the stage. It is an effect that is almost impossible to replicate on film, since depth cues are far fewer within the picture plane. The sound of thunder, however, attempts to replicate the THX surround sound of modern cinemas; this auditory effect extends the diegetic space into the audience to create a feeling of immersion, just as it does in cinema. Although traditional theatre often uses sound to produce spatial effects within the stage space, Lepage expands this space beyond the apron of the stage to encapsulate the audience, imitating the acoustic techniques of modern cinemas.

Lepage borrows freely from television as well, but in the form of direct citation. As a gesture of comparison to the hypermedium, during one of the set changes we are presented with a Chinese television commercial projected across the front curtain. The scene appears to be a tongue-in-cheek imitation of a samurai movie performed in Mandarin, but we quickly discover it is an advertisement for Kentucky Fried Chicken. The scene brought a great deal of laughter from the audience for several reasons. We do not typically expect commercials in theatre, even during scene changes. Due to the

language difference, viewers did not know what they were watching until the product “punchline”. Finally, the absurdity of the sequence relative to the seriousness of the play was a bizarre contrast. One suspects Lepage included it both as a bit of levity and to display the “depthlessness” of television—both in form and content—relative to his own enterprise; it is a bit of media commentary that also shows a far different facet of modern China and short-circuits our Orientalist tendencies towards exoticization.

### **Painting, Cell Phone Photography and the Digital Work of Art**



Fig. 2.11 – Photography as digital scenography – Xiao Ling’s self-portraits

The two final media I want to address here, painting and cell phone photography, form a dyad of intermedial commentary centered around the artist Xiao Ling. At her

gallery exhibition, she displays photographs of herself taken with her cell phone, produced she says, at significant moments in her life. The photos adorn the walls of the gallery through the use of digital projections, remediating photography as digital scenography (fig 2.11). A relatively new medium, cell phone photography is different than traditional photography as a technology and as a practice. The ubiquitous presence of the cell phone creates an eye towards spectacle and captures unexpected or mundane moments more readily; it changes the role of the photograph from what is special to what is transitory, and allows for the creation of a convenient photo archive on the phone itself (Villi 54). Xiao Ling's gallery show is a display of photo archive, snapshots of her facial expressions at the exact moment she experienced intense joy or pain. The portability of the device allows these personal moments to be captured instantaneously for future display—the personal becomes public. Like Pierre's ideograms from the beginning of the play, which form a composite meaning through individual brushstrokes, Xiao Ling's photographs are instants in time forming a composite of her entire emotional life.

Pierre's painted ideograms and Xio Ling's cell phone photographs are not media in opposition to each other, but rather complement each other as metaphors of lives lived through art. Even at the end of the scene, in a moment of heartbreak, she still has the presence of mind to reach for her cell phone, point it towards herself and snap another photograph. It is one of the more memorable images of *The Blue Dragon*, and like Xiao Ling's photos, the instant stays with us long after other details of the play have been forgotten.

In the staged display of these Xiao Ling's self-portraits, we are forced to reconsider the medial importance of the photo as object, memory and an index of a special moment in time. The portraits themselves are digital projections, rather than weighty masterpieces hung on a wall; furthermore, the cell phone photographs as a medium are a kind of temporal ephemera produced through the instantaneous convenience of the mobile phone rather than professional artistic tools. The overlapping of projection-portrait-cell phone photo causes us to reconsider the meaning of Benjamin's "Work of Art" for a digital age, in which Xiao Ling's photos can undergo endless transformations and remediations.



Fig. 2.12 – The digital multiplication of Van Gogh portraits

Benjamin is likewise evoked when we later find Xiao Ling trying to support her new child by working in an art factory. Endlessly painting reproductions of Van Gogh, the same portrait is gradually multiplied throughout the stage space to mark the passage of time and labour (fig. 2.12). The multiplication of the painting on the stage through the use of digital technology is appropriate, since it usually digital technology that drives the production of simulacral copies. In a cruel inversion of the gallery scene, the portraits are all identical and have no aesthetic or emotional connection to the artist whatsoever: they are merely being made to be sold on the free market. While the gallery portraits were digital yet original in their artistic expression, here the paintings are (meant to be) material but unoriginal reproductions; it is an inversion of our habitual expectations of originality in analogue and digital art (or for that matter, live and mediated art).

As in the town of Dafen, where 2000 painters produce copies of Great Masters (Verdier 14), here the artist becomes a factory line worker, producing the same product *ad infinitum*. Ironically, this mass production is driven by a consumer desire for the singular, auratic masterpiece which one can contemplate with reverence (Benjamin 222). However, it is also this industry that erases Xiao Ling's originality and replaces it with the reproduction of the same. Claire, who met Pierre in art school, is now an advertising executive, while Pierre continues his work in the art world. In Xiao Ling, we see the choices that lead to her giving up her art career to work in the factory, a point of fascination for Lepage: "For me, that has always been an interesting phenomenon: How can artists who have a social conscience and promise that they'll be putting their talents to the service of noble causes, how is it that you end up as a spokesperson for Coca-Cola? I

always wondered why I escaped that and why some other people didn't" (Morrow 3). In the character of Xiao Ling, Lepage gets to explore this transition, in addition to providing a trope for the changeover of China from communism to capitalism.

### **Resisting Closure: The Interactive Ending**

The ending of the play occurs in a sterile Shanghai airport, with the three main characters assembled. We are given three separate endings where different characters leave to fly off to Canada, each one being a permutation of the love triangle between Pierre, Claire and Xiao Ling. The open-endedness seems to suggest that China's future—as well as Lepage's—is still to be determined. Rejecting a decisive ending in favor of a forking-path narrative, Lepage appropriates a plot technique very rare in theatre, but exceedingly common in hypertext and interactive systems. Using a technique he previously explored in *Possible Worlds*, *The Blue Dragon* appropriates a different medial structure at the (hyper)textual, rather than the theatrical, level. This lack of linearity in the text does not subvert theatrical narrative, but rather engages the audience at a level of co-production with this aporia. As Geroge P. Landow remarks of hypertext, "a lack of linearity does not destroy narrative. In fact, since readers always, but particularly in this environment, fabricate their own structures, sequences or meanings, they have surprisingly little trouble reading a story or reading for a story" (Landow 197). In a final act of intermedial appropriation, Lepage invites us to "read for the story" as we would in interactive media, leaving the final outcome of the story us to us.



Fig 2.13 – Choose your own ending – The Airport Scene

### **Space and Digital Theatre**

Lepage's *Blue Dragon* is a clear example of digital theatre, incorporating a myriad of technologies into the mise-en-scène; this incorporation of technology transforms the stage into a hypermedium, but it also changes the way we think about the stage space. In *The Blue Dragon*, Pierre's calligraphy is displayed as a back projection, with the strokes coming into view as he paints them. The cause and the effect are shown simultaneously, highlighting the act of artistic creation; however, we are also being shown the ability of the actor to modify the stage space in real time, such that the digital projections become an extension of the actor's agency. Actress Tai Wei Foo's dance, with lights which appear to react to sound and movement, presents the audience with an

image of an actor in active collaboration with the digital elements of the mise-en-scène.

In the case of Xiao Ling's paintings of Van Gogh, the passage of time and labour is marked by the multiplication of paintings on the stage. Here again we have the visual linking of cause and effect, agency and the products of agency, through the use of digital projections. Marshall McLuhan's articulation of media as extensions of the human body in *Understanding Media* (1964) seems wholly appropriate to Lepage's scenography. The actor—or more specifically, the actor's agency—is extended throughout the stage space (Masura 150). In the same way that communications technologies effect space-time compression globally by extending the body or voice across continents, Lepage's use of technology extends the agency of the actor across the stage and collapses causality so that we see cause and effect simultaneously.

The stage likewise becomes extended though the use of sound; positional and surround sound elements encapsulate the audience within an acoustic diegesis. In the scenes with thunder and lightning, the sounds encircle the audience instead of being aimed directly at them, altering the relationship with the stage picture. Instead of sounds emanating only from the stage, the sounds of thunder come at the audience from all sides, producing a heightened sense of involvement and immediacy. Acoustically, the audience members are placed inside the representation, while physically they remain outside of it.

These rearrangements of causality and space-time on the stage are highly dependent on the audience's expectations and willingness to accommodate them. In his essay "The Extended Logic of the Interactive Performance Space," Gregor White argues that the "success of new forms of technology-based performance depends on the ability

of the individual to assimilate, internalize and objectify their everyday experiences of the technology in order to authenticate the value/meaning in the context of the performance”

(2). This statement echoes the psychological work of Lev Vygotsky, who understood higher thought processes as functions of mediated activity, or a process of using and interacting with social artifacts to the point that they become internalized (Vygotsky 1981: 163). The individual changes the social object through this process of internalization, but is also subjectively altered by this self-same process. In this sense, “the central fact about our psychology is the fact of mediation,” since it is through internalized social artifacts that we act and think (Vygotsky qtd. in Wertsch 166).

In the theatre, White argues that the timespace of the performance is dependent on the prior internalization of particular cultural artifacts or technologies. Without a familiarity with or reference to relevant technologies, certain forms of timespace logic on the stage will not make sense to the audience. This was part of the problem Beckett’s audience had with many of his experimental plays: the timespace he provided them was more analogous to electronic technologies like radio and television than theatre, and thus his works seemed incomprehensible. “The inability of the audience to reconcile the performance timespace with their internal timespace,” remarks White, “prevented them from taking authorship of the space. Without the extension of the logic of the performance into the audience meaning could not be generated” (White 2). This problem dissipated when Beckett eventually began working in radio and television, and the timespace of logic of his works coincided with the medium he was working in. Putting media (or their remediated logics) on the stage alters the timespace of the performance;

the congruence between the internal timespace of the audience and that of the stage, which Realism took for granted, can no longer be assumed. Without a familiarity with the timespace conventions of interactive media, for example, the ending of *Blue Dragon* might seem as confusing as one of Beckett's experiments.

In a similar vein, communication technologies deployed in digital theatre can result in space-time compression on the stage, similar to the way communication and transport technologies “shrink the globe” – a phenomena David Harvey examines in *The Condition of Postmodernity* (1989: 284-307). Since communications technologies allow us to expand the diegesis of a play far beyond its mimetic boundaries on the stage, we end up with an increased density of spaces, times and places referenced upon the stage. Likewise, the ability to use projections, mechanized sets and other special effects increase the number of places staged through mimesis; one is no longer bound by having one location per act, since the settings can be rearranged with relative speed and fluidity. In Lepage’s work we rapidly change places from an apartment, to an airport, to a restaurant, to the countryside and so forth; such transitions would be almost impossible to achieve in a realistic manner without Ex Machina’s technological wizardry. The stage itself begins to represent or gesture towards an increasing number of locations, enacting a space-time compression enabled by, and represented through, the use of technology.

The use of the set as a series of projection planes, combined with its mechanical reconfigurability, gives it a remarkable plasticity. There are in fact very few physical set pieces, since almost all elements in the vertical plane facing the audience are projected: the wallpaper in Pierre’s flat, Xiao Ling’s pictures in the gallery, the Van Gogh portraits

she paints, the storefront, the departure and arrival times in the airport, the Chinese landscape backdrop, and so on are merely digital projections. Anything that is not touched or manipulated by the actors is rendered as a projection. As one reviewer put it, “quickly, one is lulled into a world where man and machine are integrated; this is the first play I've ever seen that felt like a live film simulacrum” (Rea 2009). The reviewer implies that Lepage's work mimics the CGI effects of film, and this is undoubtedly true, as in the case of the weather special effects in *The Blue Dragon*. However, the allusion to the Baudrillardian concept of simulacra may be somewhat excessive, since it would imply that the play achieves a reality that is self-contained, referring to nothing beyond itself. Baudrillard describes an historical stage where reality, as it was traditionally conceived, has vanished and is replaced by a simulacrum: a copy without original. This state of hyperreality is entirely independent; it is its own reality, independent of any other (1994: 2). By comparison, Bolter and Grusin write that in a hypermedium, “[t]he excess of media becomes an authentic experience, not in the sense that it corresponds to an external reality, but rather precisely because it ... does not feel compelled to refer to anything beyond itself” (53). Like one of Baudrillard's simulations, Bolter and Grusin's hypermedium is divorced from reality, since it exists purely to display the capabilities of the medium itself, and its ability to remediate all other forms of media.

The hypermediacy of digital theatre is one of its defining characteristics (Kattenbelt 37), which would seem to imply that a kind of hyperreality is also present in Lepage's work. However, the hypermediacy in Lepage's work is significantly different from both Baudrillard's concept of simulation and Bolter and Grusin's concept of a

hypermedium. Although much of the play is enacted as Realism, the spectacle of the staging and technology never quite allows the audience to become completely engulfed in a mimetic world, as one would expect in a simulation. However, Lepage's stage magic does not produce the same critical alienation as Brechtian techniques would either. Instead, Lepage's stage operates on a simulacral logic which intermingles digital and material elements, altering our sense of causality and allowing for a dialogical intermediality throughout. The emphasis is not on the reality of the mimetic world itself, but rather on the possibilities inherent in the medium. While the play does tell the stories of Pierre, Xiao Ling and Claire, and how their lives are intertwined, it also uses dance, television, paintings, filmic techniques, CGI, digital projections and so on to examine capitalism, contemporary China, popular culture and the nature of theatre in the digital age. Much of this critical commentary comes not from the characters, but rather from the use and juxtaposition of various media on the stage. This would seem to imply that Lepage's stage comes close to being a hypermedium of the type that Bolter and Grusin discuss, but this is not the case either.

Instead of "not refer[ing] to anything beyond itself," as Bolter and Grusin assert, Lepage's version of hypermediality inverts this procession of simulacra by expanding the stage outwards to relate to the real world, rather than create a self-contained mimetic world. Using the stage as a hypermedium, and deploying various techniques of digital simulation, Lepage illustrates the much larger trends in which these characters are enmeshed. This is a significant difference from the self-referentiality which usually typifies simulations and hypermedia, and Lepage is able to maintain reference to an

external world due to the particular iconic functioning of the theatrical stage. Instead of hypermediality—or hyperreality—supposedly short-circuiting the indexical relationship with the real, hypermediacy on the stage uses iconicity, rather than indexicality, as its governing trope. The iconicity of the stage is such that everything is inferred to have meaning; combined with the space-time compression technological mediation allows, spaces, concepts and ideas are drawn into the frame of representation, referring everything back to the larger world and the thematic concerns of the play. This is an important distinction, since iconicity does not assume an indexical, one-to-one relationship, but rather relies on association, a two-way transfer of meaning, and metaphorical connections. Significantly, “metaphor does not *contain* meaning; it provides a starting point for the *construction of meaning*” (Adams 156; italics in original). The use of the iconic and the metaphorical on the theatrical stage displaces the normally solipsistic effects of hypermediacy, and instead allows Lepage to use media as icons and metaphors of larger social processes. He constructs a simulation on the stage, but one which exists in an iconic relationship with the real, allowing him not only to focus on the reality of the lives of his characters, but also to comment on the larger social and historical processes which surround them (and us). This combination of iconicity and a hypermediacy changes how a hypermedium or simulation typically is understood to work; instead of becoming a self-referential and self-contained representation unto itself, the hypermedium here uses the iconicity to transfer meaning between the world on the stage and the larger world outside the theatre.

While Lepage may have initially begun *The Blue Dragon* as a theatrical exploration into his artistic mid-life crisis and as a meditation on how artists with a social conscience end up “as a spokesperson for Coca-Cola,” what he ended up producing was something much more profound. Lepage’s fascination with theatre—and his life in it—manifests itself by casting theatre as the governing thematic medium, despite the many allusions to painting and photography throughout the piece. The star of the show is not any single actor, whose agency is extended through the use of technology. Nor is it the stage, where space-time compression allows it to become more places and to “bring” more places into its frame, through the use of television commercials, satellite maps and digitally projected sets. Rather, the exemplary aspect of *The Blue Dragon* is the entirety of the mise-en-scène, which acts as a lucid demonstration of the specificity of theatre as a hypermedium. Unlike other hypermedia, which assume a hyperreality bearing no indexical relationship to the real, Lepage reveals theatre’s fundamental difference—its overriding use of iconicity. Everything on the stage—calligraphy, acting, dancing, paintings, photographs—become larger commentaries on media, technology, capitalism, art and society. Subsumed within the theatrical frame, these media become a “starting point for the construction of meaning,” allowing it to proliferate rather than delegating it to a single, simulacral foreclosure.

Although Lepage’s *Blue Dragon* is performed within a traditional performance space, as a work of digital theatre which uses the stage as a hypermedium it is able to draw diverse times, spaces and media into its frame. Highlighting the juxtaposition of various media, and using the iconicity of the stage to subvert self-referential

hypermediacy, Lepage creates a staging that uses media without losing sight of the mediality of theatre itself, including its iconic relationship to the real world and the three-dimensionality of the embodied actor. Reversing the typical trend of simulations referring to nothing beyond themselves, Lepage's *mise-en-scène* instead creates a space of intermediality which expands the stage space beyond its typical limitations: through the use of digital projections, extending into the audience through the use of audio, and using media to create forms of space-time compression that draw diverse times and place into the staged representation. Although Lepage's work may not literally be "theatre-outside-of-theatres," it uses digital media in such a way that the world outside the theatre—its places, media and global issues—are brought inside for the purposes of storytelling and thoughtful analysis. The next chapter will look at the reverse process—the construction of theatrical events and performative spaces on city streets, using locative media to share local histories in Toronto's *[murmur]* project.

## **Chapter Three:**

### **Project *[murmur]* and the Performativity of Space**

“Where are you right now?” It is one of the most common questions one is asked when using a cell phone. “Where are you?” has become a mantra of the mobile age, according to Sadie Plant (29), in an attempt to conceptually fix the disembodied voice in a particular space and time, and to “set the scene” of our discourse. Contrary to early notions of digital technologies enabling some sort of incorporeal virtual ether, a “sense of place” and situated knowledges are gradually reasserting themselves in technological discourse (Haraway 1991; Ryan 2004). As Marie-Laure Ryan remarks, the “seemingly straight trajectory leading out of the constraints of real space into the freedom of virtual space is now beginning to curve back upon itself, as the text rediscovers its roots in real world geography” (2004). One result of this renewed sense of place is the proliferation of site-specific, narrative artworks that combine storytelling, performance and locative technologies to produce new forms of street theatre.

*[murmur]*, a Toronto-based storytelling project that uses cell phones to deliver narratives to audience members at specific local sites, exemplifies some of the main strategies and concerns of these new hybrid artists, and provides a jumping-off point for a discussion of the theoretical implications of this innovative form of performance. The *[murmur]* project lies at the intersection of several different cultural movements that continue to influence its development: the proliferation of technologies such as cell phones, GPS, PDA’s and wi-fi, and their deployment in locative media art; site-specific

performance and its dependence on the interactive spectator; Situationism and non-functional discourses of the city; and the still-emergent “spatial turn” in cultural studies and the humanities.

The myriad of concerns that *[murmur]* deals with, including place, technology, the built environment and performance, are largely a result of its origins and the diverse interests of its creators. The *[murmur]* project was originally designed as a final project in the Interactive Art & Entertainment Program at Habitat, the Canadian Film Centre New Media Lab. The last four months of the program are dedicated to teams working on the production of working prototypes. The three collaborators on *[murmur]*, Shawn Micallef, Gabe Sawhney and James Roussel, were drawn together through an interest in the city, its history and stories. Given the group’s diverse backgrounds, this combination of themes and ideas makes sense: Micallef has an MA in political science and works as a freelance writer; Sawhney studied architecture and works as a web designer, and Roussel writes and acts in Toronto (Alderman 2004). “The idea for *[murmur]* grew organically, but was firmly rooted in the strong feelings the three of us have for the city, and the agreement that a computer screen is just too far from the street to have any real emotional impact when talking about the city,” remarks Sawhney (qtd. in O’Donovan 2003). Unlike their other colleagues at Habitat, the three wanted to do neither a film-based project, nor a website. “We wanted to do something that could pop up in people’s everyday lives, that they could experience easily,” Micallef recalls (qtd. in Whyte B06).

The street-level approach of *[murmur]* means that many pedestrians merely stumble across the project in the course of their daily activities. This type of “possibility

for experiencing surprise” is exactly the type of experience that urban theorist Richard Sennett believes needs to be re-cultivated in the modern city, if it is to avoid the



Fig. 3.1 – A *[murmur]* sign on the street

homogeneity, insularity and predictability of the suburbs (96). One journalist’s chance encounter with *[murmur]* is here quoted at length, to give the reader an idea of what this experience is like:

In Kensington Market, at midnight, I am looking at a small, square, green sign with a white border. The border bleeds and twists into the word “Murmur.” A phone number, 416-915-6877, is neatly typed in the centre of the square, just above a six-digit number. As a detective, I have but one course of action. I must investigate. I dial and wait.

“This is Murmur, what’s the code?” A code! Of course! The six-digit number on the sign is a code! I am alive with questions and suspicions ...

And the strangest thing happens. A man's voice begins to tell a story about the house in front of me. "A few years ago at 30 Kensington, where I lived, my daughter met me in the morning and said, 'I had the weirdest experience.'"

I attempt to interrupt, "Excuse me," but the narrator continues. He speaks of ghostly child visitors, an accidental discovery and a surprising realization. He has offered me a personal memory - a homemade patch of Toronto history.

(Lourenco J07)

The surprise of receiving a subjective and personal recollection that affectively connects us to places is part of what the project is all about. *[murmur]*'s Micallef explains: "You may not have anything to do with the story but once these narratives are layered on a different patch of the city people feel more invested in the place they live, and also those strangers that you pass don't seem so strange anymore. It's just a sense of knowing the stories of your community" (Rossi 2005).

Given the varied backgrounds of *[murmur]*'s collaborators, and given the broad concerns the project engages with including storytelling, technology and urbanism, one must approach the work from an interdisciplinary perspective in order to appreciate the multifaceted nature of the work itself. Projects like *[murmur]*, which focus on spaces and places, confront one of the fundamental interactions that shape subjectivity and the social: the relationship between subjects and objects, the self and the environment. Both the self and the environment are produced by an extraordinarily complex meshwork of factors: political, psychological, technological, historical and so on. Any work that engages with these fundamental categories will necessarily be interdisciplinary, and

likewise any analysis of such a work needs to be too, or else it stands the risk of being radically reductive.

This chapter asserts that *[murmur]* demonstrates the “performativity of space,” or the construction of place identities through iterative embodied and discursive engagements with specific locations. Drawing particularly on Butler’s concept of performativity as a discursive or embodied act that produces material effects (9-10), the performativity of space suggests a model for understanding how the meanings of places change over time, how discursive imaginaries crystallize into material actualities, and how projects like *[murmur]* can act on the public sphere to produce actual, positive effects for cities and communities. This performative defining of place-identity is polyvocal, culturally located and partial, in line with Donna Haraway’s notion of situated knowledges, a model of knowledge production that attempts to avoid the totalizing perspective of “objective” scientific knowledge (183-201). This model of meaning-production, combining performativity and situated knowledge, has deeply political implications as well. First, it suggests that knowledge and meaning are always communal and iterative, being worked out over time through discursive practices and the negotiation of shared social imaginaries. Second, the material and embodied aspect of the performativity of space suggests that small changes in discourse and social practices, performed over a prolonged period of time by a large number of people, can significantly change material conditions. This is a rather significant change in perspective from the revolutionary politics of the early twentieth-century, or even the radical politics of Situationism in the mid-twentieth century. The macropolitics of revolutionary

movements may in the long term be less effective than the micropolitics of small, iterative acts of agency, affected through discourse and social practices over long periods of time, focused on particular spaces or locations.

Likewise, the notion of the performativity of space implies that the histories of places are both multiple and contingent. There is no single, monological story which defines the history of a place, but rather it is the multiplicity of stories and engagements which shape and define it over time. It implies that layer upon layer of historical events contribute to the present state of a place and our understanding of it. The performative nature of these events suggests that these histories are radically contingent and ever changing, based on iterative actions and discourses. In this way, the performativity of space moves us away from the idea of cities and history as static, pre-existing entities, and towards an understanding of them as patterns in time which are the result of the actions and discourses of social agents.

Although the approach to the project taken here is interdisciplinary, it draws largely upon a conceptual framework based in theatre and performance studies. There are several reasons for this. First, although performativity begins as a concept from linguistics, it is transformed by Butler into a theory of embodied action that has profoundly influenced performance theory (cf. Carlson 1996). Second, the acoustic mode of storytelling that *[murmur]* provides mimics quite closely the dynamics of radio drama in the creation of an auditory mise-en-scène. Third, theatre's typical focus on embodied actors, multimodal artworks in real space, and the overlapping of the real and representations on the stage make it an appropriate framework for the analysis of a work

like *[murmur]*, which similarly unfolds in a real space overlayed with a constructed representation. Fourth, unlike other media, performance is able to mimic reality to an uncanny degree since it most often depends on embodied actors and spectators to create its mimesis; we know theatre is fictional, yet its material reality cannot be denied upon the stage. Like theatre, *[murmur]* depends on the audience's perceptual framing of the event in order to separate the real from the representation.

Finally, the enacted representation in theatre is based on a text: the dramatic script is actualized or materialized through its theatrical performance. There is not a one-to-one correspondence between the script and the play, but rather the final result is based on the interpretations of several social agents working in tandem to actualize the text as a material event. Theatre is a powerful metaphor of the ways in which various scripts, actions and discourses come together to performatively actualize a possible world. Theatre enacts the performativity of space on a regular basis, yet it is confined to the stage space, and its sole contributors are theatre practitioners. *[murmur]* and other forms of street-level performance, in contrast, enact their scripts outside the theatre and invite anyone to be an active participant. Theatre's performative strategies are transposed onto the real world, hopefully with similar productive and world-building results.

This chapter examines several of the historical factors and discourses that influenced the *[murmur]* project's development, as well as taking an interdisciplinary approach to analyzing its meaning and significance as a public artwork. By looking at the historical and artistic precedents to the work, including locative media, site-specific art and Conceptualism, one can begin to understand how the project's engagement with

specific places fits within a larger technological and artistic history of work concerned with location and context. From locative media, *[murmur]* gains a concern with the ability of technology to fix information to specific places; from site-specific art it acquires an appreciation for the role narrative and theatre can play in producing meaning for an audience about certain sites; from Conceptualism the work gains the concept of “art without an object,” where the perception of the audience alone is enough to constitute artistic practice, beyond a commodity that can be bought or sold.

This chapter also looks at the role new technologies like the cell phone can play in reclaiming public space and the reinvigoration of the public sphere. The cell phone, a device once thought to be eroding the public/private divide, has emerged as a social tool for keeping in touch with one’s social network and, in the case of *[murmur]*, being reconnected with one’s own community and the members which comprise it. Similarly, the non-linear nature of the stories *[murmur]* provides—distributed spatially throughout neighbourhoods and highly dependent on the pedestrian path one takes through them—rewrites the city as a kind of spatial hypertext. But where hypertext links and paths are conventionally virtual, *[murmur]* makes the nodes a material part of the built environment through the use of road signs and paths a literal experience through an emphasis on walking through urban space.

Politically, the project draws upon ideas from Situationism, variant of mid-twentieth-century Marxism that emphasized lived experience and “situations” as the ultimate form of artwork. To the Situationists, the psychogeography—or the emotional and psychological impressions generated by a place or city—were just as important as

architecture or urban planning. At the heart of *[murmur]* is the question, “What are cities for?” and the reply seems to be that they should exist as a manifestation (or reflection) of the stories, experiences and desires of their inhabitants.

Projects like *[murmur]* rely on an overcoding of the public realm with private data, which can potentially lead to both a reclaiming of public space and a reinvigoration of the public sphere. The encroachment of consumerism on almost all public spaces under late capitalism has evacuated urban public spaces of social relations—save those mediated by consumer capitalism (Jameson 1991). Many locative projects act as a means of putting those relations back through a reclaiming, personalizing, historicizing or making newly social those spaces currently dominated by the abstract relations of capital. Likewise, the elite nature of the built environment—designed as it is from the ‘top-down’ by city planners and architects—can be renegotiated as a co-production between planners and users by putting annotation systems into the hands of people on the street. Like graffiti or tagging culture, spatial annotation can re-territorialize the city through the placement of signs and markers of place-identity: “To the extent that the annotations in such a system become spatial, it makes the authors of those annotations the co-creators of a new virtual vernacular that will more and more shape the shared experience of the city ... The challenge is to find ways to embed cultural intelligence within the built environment – or, more precisely, alongside and within the pathways that we traverse from day to day” (West 4). This process of de-alienating the metropolis—making the city familiar, social and meaningful—is important if artists are to reinvigorate the urban

public sphere, replacing media discourses of social contamination with discourses and practices that are productive, collaborative and collective.

As a set of narratives chosen by, and distributed throughout a community, *[murmur]* represents an important contribution to the public sphere. In *The Structural Transformation of the Public Sphere* (1989), Jurgen Habermas uses the example of the eighteenth-century London coffee house as an idealized example of a public sphere where debates between rational individuals could occur without interference from the authorities. The coffee house mediated between the sphere of authority (and its attendant state apparatuses) and the private sphere of the home (30); it existed for the purpose of democratic discussion and acts as a regulating force against the power of the state (27). He notes that for a public sphere to exist, it must satisfy three criteria: (i) the participants treat each other as equals, (ii) discussion is over matters of common concern, and (iii) the participants are members of the public (36). Sociologist Janey Gordon observes that the cell phone “space” constitutes a public sphere which can enable collective action against state power, as was the case in the Philippines in 2001 when a flurry of text messages and protests resulted in the removal of President Estrada from office (20). More recently, during the protests that followed the Iranian presidential elections in 2009, cell phones and text messaging were used as a means of organizing dissent, and subsequently forcing the government to block all cell phone transmissions. In the case of *[murmur]*, the use of the public sphere is much more benign, but it nevertheless allows communities to have control over their own narratives, rather than only having overarching, sanctioned histories dictated from above. Furthermore, the discursive engagement with the public

sphere creates social bonds to the community that can help facilitate further public discussion and involvement.

In an era where the possibility of public debate has largely been foreclosed by punditry, public relations and the mass media, localized debate and discussion using technologies linked to location become means of engaging with public sphere at a local level. While the use of technology may seem to be a step backwards from the face-to-face interactions of the Habermasian coffeehouse, technologies such as the cellphone, or systems such as *[murmur]*, allow people to do is reach more citizens in a non-linear way than they could through face-to-face interaction. One trades the immediate presence of embodied interaction for an expansion of audience (which does not necessarily foreclose the possibility of actually meeting face-to-face at some point in the future). What locative media adds is a targeted localization of interests based on the emotional, social and psychological investments individuals have to places, and a framework for performative engagement with places, that contributes to a public sphere where individuals can interact and engage in public discussion.

Direct action may be temporarily foreclosed as a means of producing social change in postmodernity, but *direct experience* may be replacing it as a means of engaging with the hearts and minds of communities and citizens. Thus discourse and narrative alone may not be enough—the theatrical and embodied nature of *[murmur]* and works like it provide a first-hand experience of the importance of places, communities and discourse to the health of the polis and the public sphere.

### **Locative Media: Place, Information and Context**

Locative media and site-specific performance emerge out of very different disciplines, yet share a common emphasis on place and context as major determining factors in the construction of meaning. “Locative media” is a catch-all term coined by Karlis Kalnins for a set of new media practices that explore the interaction between data networks and the physical space of the urban environment. According to Drew Hemment, AHRB Research Fellow in Creative Technologies at the University of Salford, “locative media uses portable, networked, location-aware computing devices for user-led mapping and artistic interventions in which geographical space becomes its canvas” (Hemment 2004). In a sense, locative media is what happens when street theatre meets the wireless Internet and other digital networks; it is an effect of information being available anywhere, anytime in the built environment. In the case of *[murmur]*, the cell phone provides the interface for overlaying the city with hypertext-like audio content.

“Locative is a case, not a place,” Kalnins says, meaning that it is a form that unfolds in time as well as space, providing an experience that can only be understood after the fact, as a whole (Rushkoff 2005). This emphasis on time and context is distinct from traditional, functionalist uses of maps and location-based data, where there is an emphasis on how geographic points allow us to achieve some spatial objective. The pervasive nature of locative technologies allow new narratives to be told by fixing data to places and adding time-based elements to spatial trajectories, often with surprising and illuminating results.

Locative media is still developing as a field unto itself, but already includes a broad range of activities: collaborative mapping, open technology experimentation, tactical/surveillance critique, urban gameplay and subjective storytelling (Hur et al. 2006). The common thread of many of these activities is the attempt to reconcile the geospatial positioning of the user with pervasive data networks that allow us to find information about where we are at any given moment. In its narrowest definition, a locative work is an “artwork that utilizes media that can express an index of spatial relationships” (Albert 2004). The primary contextual cue used by these systems is the location of the user, since it is relatively easy to determine, has meaning for the user, and is easily integrated into adaptive software applications.

However, one should keep in mind that the integration of physical context into adaptive systems and artworks need not stop at a set of space-time coordinates. In its widest sense, locative media includes a hierarchy of contextual cues ranging from physical environment to human factors (Schmidt et al., 1998).

“At the lowest level, the physical environment refers to all the physical variables like location (absolute or relative) as well as conditions (e.g. light, temperature) or infrastructure (surrounding resources for communication, computation, task performance). At the higher level, human factor related context is structured into: information about the user (emotional state, knowledge of habits, . . . ), the user’s social environment (co-location of others, social interaction, group dynamics, . . . ) and the user’s tasks (spontaneous activity, engaged tasks, general goals, . . . ) [sic]” (Nova 2004).

What is significant here is a shift from data generated remotely (server-side) and pushed to devices, or data pulled consciously by the user via search queries, to data that is generated based on the immediate position and context of a mobile user. This prioritization of the “user plus context” acknowledges the multifaceted nature of users as physical, emotional, psychological and social beings, and attempts to integrate that information into applications that enhance goal-oriented behavior applicable to the immediate environment; similarly, context is implied to be something that surrounds the user, and changes over time with movement, experience and activities.

### **Locative Media and Augmented Reality**

Many of these concepts and the technological foundations of locative media grew out of the field of Augmented Reality (AR), a subset of Virtual Reality (VR) that involves creating systems whereby the user is simultaneously aware of real world and computer-generated data. Augmented Reality links physical objects and places with data, effectively “annotating” reality with multimodal information. One of the earliest conceptualizations of a location-aware Internet, Jim Spohrer’s *WorldBoard*, was envisioned as “a planetary chalkboard for the 21st century,” whereby “users [are able to] post messages on any of the six faces of every cubic meter (a hundred billion billion cubic meters) of space humans might go on this planet” (Spohrer 1999). Spohrer’s vision was largely driven by the question of what type of system might replace the Internet. The

marriage of location sensing Global Positioning System (GPS) devices and wireless Internet data seemed a logical conclusion.

GPS, a technology which, like the Internet, emerged from the military sector, has likewise increasingly targeted the consumer market. These systems allow us to situate ourselves, orient ourselves and plot a trajectory for ourselves through the use of an extraordinarily accurate tracking apparatus. However, GPS only provides a point location given in latitude and longitude coordinates. It does not provide information about the importance or context of where one is, nor does it provide meaningful connections between spatial points. The addition of this contextual information was part of the beauty of Sporer's vision, and along with the inclusion of narrative possibilities, was the trajectory that locative media would eventually take.

Essentially anything that could be put on a web page—text messages, blog entries, audio feeds and video—could be linked in Sporer's system to geospatial coordinates and “pushed” to a wireless internet user at a given location. The positioning of the user in the real world determined the data that is available from various “channels”; in this way, conventional, static maps are replaced with ones that are dynamic in real-time, while Internet data is spatially filtered down to only that which is directly useful in the immediate environment. While *WorldBoard* has yet to become a literal reality outside the lab, locative media practitioners are applying the underlying concept of linking geospatial locations with various types of site-specific information in a variety of ways, *[murmur]* among them.

From a technological perspective, the groundwork laid out by AR researchers like Sporer and others ‘set the scene’ for the locative systems that would come afterward, but the truth of the matter is that very few locative artists have read, or even heard of, his work. Nevertheless, the idea of spatial annotation—being able to have information about a place available anytime, anywhere—has proliferated far beyond the labs of Apple and IBM and taken on a cultural life of its own, much as the concept of Virtual Reality escaped from the labs of MIT into popular consciousness in the 1990’s.

Some of the earliest systems for spatial annotation bear a striking resemblance to Sporer’s *Worldboard*, despite their developers not having the money and resources of Apple or IBM. *GeoNotes* (Espinoza et al., 2001) was one of the first of these systems, allowing users to write messages in the form of “virtual post-its” at a given location, using a PDA running JAVA-based software. As a kind of mobile notice board, *GeoNotes* allows users passing in the vicinity to read messages posted by others to that location. *LLI* (Mankins, 2003), short for “location-linked information”, is designed to connect real-world geography with the virtual world of the Internet using XML coding. Systems like *[murmur]* (Micallef et. al., 2003) and *Tejp* (Gaye and Holmquist, 2003) allow users to leave audio notes linked to a specific place by various means. More recently, mobile blogging applications (MOBlogging) applications have been developed that allow people to enter blog posts remotely, including location data to each post.

### **Site-Specific Art: Framing Place-Identity**

Site-specific performance shares with locative media a particular concern with overlaying meaning on places, but rather than emerging from the discourses of computing and GPS/GIS, it grows out of traditional theatre practices (particularly in the United Kingdom). Locative media tends to operate primarily on the “physical location” side of the contextual spectrum; conversely, site-specificity tends to operate at the level of “human experience,” including user/audience actions, the semiotic production of meaning, and narrative scripts related to activities and subjectivity.

Nick Kaye’s ground-breaking study, *Site-Specific Art* (2000), outlines a set of theatrical practices that constitute a “working over of the production, definition and performance of ‘place’” (3). Site-specificity emphasizes a contextualized framing of place that implicates the viewer as a co-creator of meaning at all times. In this way, site-specific art is very much like locative media in that it works from the user/audience member outwards, emphasizing context and experience as the primary sources of meaning. Rooted in traditions of Environmental Theatre, Street Theatre, and Conceptual Art, one of the main tenets of Site-Specific Art is that “to move the work is to destroy the work” (Serra, qtd. in Kaye 2). To move the work is to replace it or make it into something else; the discursive exchange with the environment that constitutes the artwork’s meaning is irrevocably lost if it is re-contextualized. Kaye remarks that these site-specific practices are intended to “articulate exchanges between the work of art and the places in which its meanings are defined”; furthermore, “[i]f we accept that the

meanings of utterances, actions and events are affected by their ‘local position’, by the situation of which they are a part, then a work of art, too, will be defined in relation to its place and position” (Kaye 1). Site-specific works thus emphasize the contextual and situational uniqueness of a place, while simultaneously highlighting the historical occurrences that have contributed to a certain place-identity. As a rich tradition of place-based performance, site-specific art is perfectly complemented by locative media practices and technologies. The pervasiveness of locative media technologies, such as wireless internet, webcams, mobile phones, and satellite GPS, means that any location becomes a potential ur-place for site-specific art; given the embodied subject and his/her recording media, any site can take on meaning as a collection of readable, remixable, and deployable signs.

The emphasis on spatial and historical uniqueness in site-specific works is distinct from Environmental Theatre in that “environmental theatre concerns the placement of a text in a site, and site-specific theatre concerns the generation of a performance from a site” (Houston xv). In other words, in site-specificity the place itself acts as “material” for the generation of a text, in such a way that the performance of the text affects the audience’s appreciation and conception of the site; in Environmental Theatre, by contrast, the space of performance is usually a non-traditional or “found” space that is transformed or negotiated for the performance of a pre-existing text. Environmental Theatre tends to emphasize perceived and conceived elements of a given space as a theatrical set, whereas site-specificity tends to emphasize the lived and representational practices associated with a space, since these elements are more conducive to generating a narrative text (Lefebvre

33-39). While both produce a ‘dialogue’ with the space in which they are performed, Environmental Theatre typically treats space as a Cartesian container which is ‘filled’ through performance, whereas site-specificity often looks at the symbols and social practices that have helped to produce a given space over time. The overall effect in Environmental Theatre is a semiotic dispersion of theatrical elements (set, actors, audience, technical elements etc.) throughout the space, whereas in site-specific works semiotic elements are concentrated in one place for a short time before the actors and audience move on to the next performance space.

The itinerant nature of many site-specific performances and the desire to perceptually transform public spaces are traits largely inherited from various forms of street theatre. As a form of protest, street theatre is designed to capture popular and media attention through a variety of means and genres: rallies, puppet shows, marches, vigils, choruses, clown shows and direct actions. Such performances act in opposition to the status quo by physically reterritorializing public streets, which have always been “an arena for the display and creation of power” (Kershaw 3-4). Perhaps even more importantly, such actions deploy symbols and archetypes on a very large scale, which act as counter-discursive elements against the representations of state power.

Site-specific art and street theatre practices overlap in their shared attitude towards real and ideal actions and spaces:

Typically, theatre transports the audience to a reality apart from the everyday; radical street performance strives to transport everyday reality to something more ideal. Because the desired spectators are not necessarily predisposed to theatre-

going, it takes place in public spaces and is usually free of charge. Potentially, street performance creates a bridge between imagined and real actions, often facilitated by taking place at the very sites that the performance makers want transformed. (Kershaw 1)

Both forms attempt to transport everyday reality to something more heightened in meaning by overlaying everyday places with representations; in doing so, street theatre and site-specific art seek to transform audience attitudes, usually for progressive aesthetic and/or political ends. In the case of street theatre, the political element is almost always overt (with Augusto Boal's Invisible Theatre being a notable exception); in the case of site-specificity, on the other hand, the political element is much more oblique and works primarily through the use of materialist strategies (such as historicization [Brecht], mythologization [Barthes], *détournement* [Debord] or cognitive mapping [Jameson]) which emphasize the contingent nature of history and society, rather than making any single political issue its central focus.

So while street theatre shares both site-specificity's use of public space, and its over-arching desire to transform real spaces into ideal ones (and vice versa), there is a clear divergence in method. While one might assume that the former is axiomatically more politically effective than the latter at raising political awareness, I would argue that in a televisual society where street protests are very quickly reframed, recontextualized and sublimated by the narrative viewpoint of mass media, art that appeals to the direct experience of the audience member can be much more effective. While in some contexts the visibility of mass protests can be tremendously useful in bringing attention to an issue

or in transforming public perception, in other contexts the image can be rapidly distorted or recuperated by ideological state apparatuses, limiting their effectiveness.

### **Site-Specific Art and Conceptualism**

Site-Specific Art differs greatly from either Environmental Theatre or Street Theatre in regards to the spatio-narrative freedom and the degree of interpretation required by the audience. The “discursive exchange” with the environment that occurs in site-specific art occurs within the mind of the spectator, placing the burden of interpretation solely on the reader of these spatial texts or performances. Site-specificity inherits from Conceptual Art “a very different role and a new set of demands placed upon the spectator. No longer construed as a passive receptacle awaiting aesthetic illumination, Conceptual Art proposed an informed and critically active audience who were expected to work in order to fully engage with the objects, texts, installations etc. that were Conceptualism’s products” (Newman and Bird 3). Like Kaye’s ideal spectator who works over the “production, definition and performance of ‘place’” through a reconciliation of real and ideal spaces, Conceptual art demanded much the same level of philosophical engagement in regards to the production, definition and performance of “art” during the 1960’s and 1970’s. Explaining the major differences between traditional and Conceptual art, historian Tony Godfrey explains that:

Conceptual art is not about forms or materials, but about ideas and meanings. It cannot be defined in terms of any medium or style, but rather by the way it

questions what art is. In particular, Conceptual art challenges the traditional status of the art object as unique, collectable or saleable. Because the work does not take a traditional form it demands a more active response from the viewer, indeed it could be argued that the Conceptual work of art only truly exists in the viewer's mental participation (4).

Like one of Barthes' writerly texts, which requires the work of the reader for its completion (Barthes 1977), a Conceptual work depends on the active participation of the audience to achieve its full meaning. Such works provide a radical openness to interpretation, and indeed the movement itself actively sought to subvert the role of the art-critic-as-interpreter: "Conceptual art annexes the function of the critic," remarks early Conceptualist Joseph Kosuth, "[it] makes the middle man unnecessary" (Kosuth 39). By appealing directly to the audience and the audience's experience of the art object (or concept), both Conceptualism and site-specific performance attempt to short-circuit the reframing of art and dissent by external, ideological forces; the centrality of audience experience, mental engagement and individual interpretation to these forms ensures that remediation is virtually impossible.

Conceptual practices were unified by a "desire to disappear as art object, whether into idea, design or everyday life" (Newman 206). As Kosuth would later remark, "Conceptual art, simply put, had as its basic tenet an understanding that artists work with meaning, not with shapes, colors, or materials" (Kosuth 1996). This will-to-dematerialization reflects an end point of Modernist transcendentalism, transforming the art object into pure content without form:

“Conceptual artists adopted the interpretive frameworks of semiotics and Post-Structuralism, reading the work of art as a sign competing for recognition in the cultural and ideological codes of a society. The fundamental impact of feminist theories, particularly analyses of patriarchy and psychoanalytic theories of sexual difference, inflected art practice towards issues of representation and subjectivity, a move which tended to produce oppositional positions -- arguments over essentialism versus the discursive” (Newman and Bird 3-7).

The movement’s dominant concerns with questions of representation, reflexivity, epistemology and the meta-discourses of art reflect Conceptual Art’s important contributions to Postmodern thought. Many Conceptualists question the borders between art and life, as well as the role of philosophy in art:

If a work of Conceptual art begins with the question ‘What is art?’, rather than a particular style or medium, one could argue that it is completed by the proposition ‘This could be art’: ‘this’ being presented as object, image, performance or idea revealed in some other way. Conceptual art is therefore ‘reflexive’: the object refers back to the subject, as in the phrase ‘I am thinking about how I think.’ It represents a state of continual self-critique (Godfrey 12).

Similarly, site-specific art asks, ‘What is a place?’, and is completed by the proposition ‘This could be a place’ by revealing it through performance. The self-critique of our own attitudes regarding what constitutes a ‘legitimate’ place—that is, which criteria we believe to be important in the production of meaning—becomes part of the work of art itself, and our experience of engagement with(in) it.

By moving art outside of the art market and museum, Conceptualism also problematizes the border between life and art by ignoring the (perceptual) framing function of the gallery. Where Duchamp had challenged the framing function of the gallery by introducing an object foreign to it with *Fountain* (1917), later conceptual works increasingly took to the streets as a means of exploring the “fusion of the work with its site and context of display and [...] the possibilities of publicness and distribution” (Alberro 3). This rejection of traditional spaces of exhibition parallels site-specific art’s rejection of traditional theatre buildings in favor of exploring the “fusion of the work with its site and context of display” without the help of the framing-function of the theatre. The conceptual comparison between life and art, and the attendant reconciliation of real and ideal spaces is difficult, if not impossible, within the confines of a traditional mise-en-scène within which everything will be perceived as ‘art’.

The portability of the mise-en-scène in site-specific performance, which is largely due to perceptual framing, is perfectly complemented by locative practices and technologies. The pervasiveness and portability of locative media technologies such as wireless internet, webcams, mobile phones and satellite GPS means that almost *any* location becomes a potential *ur-place* for site-specific art. As McLuhan predicted in 1968, the immersion of subjects in a total media environment is constructing a perception of the built environment as a sort of “programmed happening” (113) or series of “pseudo-events” (122). The ubiquity of locative technologies is helping to create exactly such an environment. This pervasiveness of technology allows for the recording and dissemination of lived practices and experiences connected with a site—experiences that

would otherwise be lost or forgotten. Although we have an encyclopedic amount of knowledge available to us when we sit down at any computer, we generally know comparatively little about our immediate environment and the buildings we walk by every day. Oral storytelling, which at one point in time might have acted to preserve an experiential history of our environment, is an all but forgotten art form. However, locative media technologies and site-specific performance practices can combine to produce artworks like *[murmur]* that preserve the stories of the built environment while simultaneously revealing it as a particular kind of *theatrum mundi* that is continuously, performatively produced.

### **The Cell Phone and Social Distance**

The use of cell phones in the project was a pragmatic choice, despite its limitations: "Telling location-based stories using cell phones seemed to be the best way to get all these stories out to the most people in the spot that they happened. Not everybody has a cell phone, but it was the delivery device that could reach the most amount of people" (Rossi 2005). Similarly, Roussel sees the project as a way of altering our thinking about cell phones away from being "an irritant" towards being "a very personal portal into something that is very significant" (Toman 2003). The group designed *[murmur]* to be a public art intervention in the built environment, one that "connects people with their city by allowing them to listen to stories about particular locations while standing in those places. People walking past these sites notice a sign which indicates the

presence of a story and provides a number they can dial using their cellular phone” (O'Donovan 2003). The stories are told to pedestrians specifically since one of the aims of the project is to get people to relate to their city and community members at street level (Bowness 2004). James Roussel, Art Director for *[murmur]*, remarks that “what we’re trying to do is to build an entire, opposite, one-a-kind, popular mythology of a city at a citizen level. It’s something that’s never been done, and that’s what people crave” (Toman 2003).

By having residents listen to stories from members in their community, *[murmur]* facilitates and encourages encounters with difference. Such encounters, according to sociologist Richard Sennett, are important because they encourage the kind of spontaneous social interaction that is essential to a healthy and diverse urban agglomeration (57). If our encounters with others are homogeneous with respect to race, class, social standing and so on, this (sub)urban monoculture leads to the immature stagnation of cities and their subjects. Suburbs and gated communities, for example, define notions of community around wealth and a fear of otherness rather than the dynamism and novelty of urban living (Sennett 48-9). As Morris Berman reminds us, public dialogue “has been the city’s most authentic reason for being” since ancient Athens, and the exposure to different discourses and points of view are vital in ensuring healthy cities and healthy democracies (322). By getting people to relate to their city and community members, even through a mediating technology such as the cell phone—or perhaps because of it—*[murmur]* contributes to various encounters with difference;

these encounters in turn encourage public discourse and expand our sense of community by representing the stories and opinions of its members to others.

The use of the cell phone in *[murmur]* acts to collapse social distance (and encourage community building) through the intimacies of storytelling, using a tool commonly thought of as a device of extreme mediation. Ironically, while despatializing technologies such as the cell phone have collapsed *geographic* barriers to communication, they have not necessarily decreased *social distance*; in fact, the opposite is more often the case: “Economic communications and financial empires tell us that place is less important for communication, [but place] is becoming more important to people” (Hunter 144-5). In the case of *[murmur]*, the personal, local stories delivered by cell phone decrease social distance while emphasizing individual attachments to places; in doing so *[murmur]* works performatively to produce a vibrant neighborhood overcoded with meaning. In his analysis of *Urban Tapestries* (West et. al. 2005), a highly developed spatial annotation system similar to *[murmur]*, Nick West notes that:

In the process of our research, we realised that we were attempting to define the common ground between two strands of urban behaviour: the spatial and the social. The most obvious innovation of Urban Tapestries (and many similar recent research projects) is a renewed focus on the space of the city and how that space is created. In and of itself, the insight these projects bring to the production of space is not especially groundbreaking. But what does seem noteworthy is that urban annotations create space through what has previously been an entirely *social* process: the use of mobile phones. (3)

The use of the mobile phone as a contributing factor to the production of space is central to *[murmur]* as well as *Urban Tapestries*. But how phones came to occupy the position they did in society, how they work as a social device and what their role is in changing the relationship between public and private spaces are very complex questions, but questions that must be addressed to understand the significance of *[murmur]* as a significant example among similar locative projects.

The cell phone is the “fastest global diffusion of any technology in human history,” with one in two people on the planet now owning a cell phone (Garreau 2008). Approximately 282 million cell phones were shipped in the first quarter of 2008 alone, a number roughly equivalent to the populations of Japan, France, Canada and the U.K. combined (Medford 2008). The mobile phone is the most ubiquitous form of high technology on the planet, and it is an object symbol of our contemporary mobility (Carey 2004). Corino notes that “[i]t is an object of desire, instrument, which collapses the previous forms of private, and public life, as well as a tool of connection and control. The mobile phone becomes a nomadic object, characteristic of the postmodern way of life: that of recombination, of discontinuity and fragmented experience” (21). As such it is the most pervasive communication network we have, and the best example of ubiquitous computing and the possibilities locative media.

It should come as no surprise given this rapid course of technological development, that there has been heavy research and development investment on the part of cell phone providers into ‘anything that moves’-- that is, studies of mobile media and the locative possibilities of cell phone technology (Pope 2005). The Integrated Project on

Pervasive Games (IPerG) group, for example, is heavily financed by Nokia, while magazines such as *Receiver* are funded by Vodaphone; the advantage to these companies is that the sociological experiments and analysis undertaken by practitioners and academics feed back into a valuable pool of information on patterns of cell phone use (and potential revenue sources), while at the same time advertising new uses for their devices through high-profile case studies.

As cell phone technology has become smaller and more mobile it has become increasingly integrated into everyday activities and enmeshed in our everyday social narratives; it is something we carry with us and fiddle with, rather than something we must stop to use exclusively. We do not stop what we are doing what thinking about to use a cell phone, but rather almost automatically split our attention between the use of the device and the demands of our immediate environment. As we receive new information via these devices and then subsequently set them aside, our perception shifts back totally to our environment, resuming a singular consciousness. Based on the information we have received, our needs, desires and mental trajectories may change, stimulating new courses of action. Cells phones are carried on—and become an extension of—our bodies, allowing (for better or worse) continuous engagement with a ubiquitous computing device and the social networks to which it connects us. Since “[i]t is still a bidirectional communication system... it can become an instrument of interaction because it receives as well as transmits” (Corino 23). As a narrowcasting device and the prime example of technological convergence, the rapid spread of the cell phone is probably the largest democratization of content-production in history.

Spatially itinerant and inherently social, the mobile phone unwires the telephone from the home and recontextualizes it to the street. From its earliest inception, the mobile phone has been a street-level technology, and as William Gibson has noted, “the street finds its own uses for things” (1982) — a particularly apt quote for locative media practitioners. “Keeping … technologies close to the ground,” remarks locative media activist S. Albert, means that they are, “available for hacking, re-wiring and redeploying in non-authoritarian ways” (2005). So while the initial uptake of the technology might have been by financiers who “brought their work home with them,” mixing public life at the office with private time in the car or home, the dissemination of cell phone technology to the masses has resulted in the opposite movement: the overlapping of the public sphere with millions of private conversations. One of the most intriguing aspects of the use of cell phones is this capacity to blur the public and the private realms.

The telephone (whether regular or mobile) probably comes the closest to conveying a sense of presence than any other technology: the voice, combined with synchronous communication and the spontaneous nature of telephone use, make it a suitable substitute for face-to face interaction in many situations (Corino 27). The cultural uptake of the technology has been as a tool which enhances social ties, both within the home and on the street. As Rich Ling, a researcher who examines the sociology of cell phones for Telnor Europe, remarks, “[t]he Internet is quite global. But the mobile phone is the way social cohesion is taking place. It tightens the bonds between us” (Garreau 2008). Instead of tethering us to the workplace, cell phones allow us to

connect to all of our social networks at once, through voice, photos, text messaging, and mobile access to the Internet.

### [murmur]'s Expansion

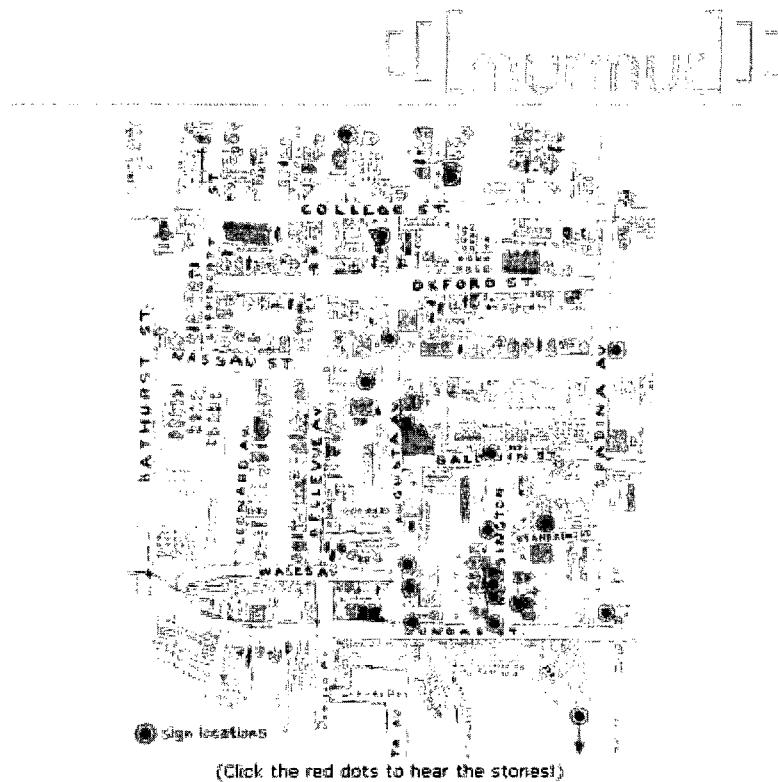


Fig. 3.2 – [murmur]'s Kensington Market webpage

The response to *[murmur]* was positive from its early demo version at Habitat and the group was encouraged to do a larger-scale launch. In 2003, the collective launched a version in Kensington market with 29 signs and associated stories. The group then developed city-specific *[murmur]* projects for Vancouver and Montreal, and with funding

from municipal and provincial arts councils, expanded to the Annex and Spadina Avenue between Davenport and Wellington Streets in Toronto. Pieces were developed for the Drake Hotel and inside Hart House, the area around Yonge and Dundas Square, as well as Fort York, Little India and the Toronto Reference Library (Ryan 2006). More recently, the group has again expanded to The Grange, The Junction, and The Village. The *[murmur]* website (at <http://murmurtoronto.ca>) provides a desktop version of the project's stories, complete with hand-drawn maps and links to audio clips. (All subsequent audio clips, referred to by number in this paper, can be found on this website).

The collective has also set up *[murmur]* sites in San Jose, California and Sao Paolo, Brazil. They had inquiries from and subsequently set up sites for Dublin and Galway in Ireland and Edinburgh, Scotland: "In Europe, there have been a bunch of projects that are basically talking plaques, and they are as dull as you would expect them to be. But what we have is appreciation of storytelling, an appreciation of voices" (Sawhney, qtd. in Whyte B06). A "view from below" that is multi-perspectival and counter-hegemonic—as opposed to official plaques installed by heritage organizations—is clearly important to the *[murmur]* collaborators: "We're trying to give equal weight to everyone's story, whether they're regular people, or the ruling class, which is usually the traditional history of Toronto the Good" (Whyte B06). In this sense, the telling of stories becomes a form of community ownership, a claiming of space and history that is democratic and polyvocal, rather than unified and authoritative.

In the interest of increasing a sense of community ownership, *[murmur]* has been experimenting with allowing users to record their stories using their cell phones, instead

of having users come into a studio to record their tales (Alderman 2004). Furthermore, the group plans eventually to hand over editorial control to the communities in which the project exists: “we’d like to set up an editorial board made up of community members, much like a newspaper editorial board, who will help us ensure whatever personal innate biases we might have don’t skew story selection in a particular direction,” says Micallef (O’Donovan 2003). Such a selection process would ensure that the univocal history of “Toronto the Good” is not replaced by that of *[murmur]*, allowing the communities themselves to define who they are through the stories they tell.

This democratization of content is firmly in line with Sennett and Berman’s notions of how encounters with difference and discourse can contribute to the healthy functioning of subjects, communities and cities. By turning over the selection of content to the communities that have a vested interest in them, the *[murmur]* collaborators hope to ensure that the “view from below” that these stories represent is complimented by a bottom-up selection process that emerges from the community rather than *[murmur]*’s founders.

If site-specific works ask their audience “What is a place?” then the myriad of replies from a community will reveal the kinds of phenomenological and emotional investments that constitute meaning for a given audience. As a means of provoking narrative completion (by answering that question) and debate (we either agree or disagree with one another’s definitions), these types of public artworks cause one to reflect on what “counts” as a place, and more specifically, what cultural priorities we use to arrive at that judgment. This self-reflexive process of determining place-identity contributes to

an ongoing debate in the public sphere over meaning and value in the built environment, hopefully leading to the type of vital and mature polis Sennett envisions.

### **Signs, Significance and Signification**

The use of material signs instead of invisible GPS markers is a significant part of what makes *[murmur]* distinctive among spatial annotation projects. Projects such as *Geo-Notes* and *Geo-Graffiti* use similar techniques of providing spatial information in public spaces, but do so invisibly, using GPS and PDA's to determine the location of points; anyone without these devices would not even know information existed at a particular location. Yet these self-same projects retain the language of tagging and graffiti culture while ignoring the issue of “visibility and visual clues that will lead to interactions with information situated in space. [They] ignore the potential for embodied interaction beyond the screen of a mobile device” (Arnall 2005). Visibility acts as an enticement to embodied interaction with information and the environment. *[murmur]*'s signs, like tags or graffiti, discursively “claim” a particular space as territory through their visible markings, which are themselves a material objection to a dominant (visible) ideology of property ownership.

In the journalist's encounter with *[murmur]* quoted above, a non-descript street sign leads to a narrative encounter with a complete stranger. This surprise encounter is striking for a few reasons. First, that one can just happen upon *[murmur]*'s signs among all of the street signs and advertisements of Toronto shows that the project and its signs

have been sanctioned by the city; this sanctioning is significant, since these signs belong to an entirely different semiotic register and economy than the ones around them.

Whereas traffic signs, parking notices, directions and the like indexically point to places in the city, labeling them and indicating the rules that govern them, *[murmur]*'s signs (and codes) instead point to whole narrative storylines, and expand, rather than delimit, what a place "is" (or is for). While this city sanctioning may limit the types of stories that can be told through *[murmur]*, the fact that the signs do not function as directional indicators but sites of cultural memory and discourse reveals a rather progressive outlook regarding what a city is for.

Similarly, where most signs are either geared towards some form of utilitarian way-finding or in the case of advertisements, designed to promote consumption, *[murmur]*'s signs do neither, but instead point to a third space—the narrative space of the cell phone. The inclusion of *[murmur]*'s signs among 'regular' street signs and advertisements semiotically grants their narrative function the same level of importance as traffic flow and consumer capitalism, which is quite a remarkable gesture on the part of the cities in which *[murmur]* operates. Their placement indicates the importance and value these cities place on a narrative economy of competing discourses, whether ideological, aesthetic, monetary or historical. In the long term we might find that the narrative economy systems like *[murmur]* are engaged in, and the provenance of place that they enable, actually interacts strongly with the property values of places and communities. If this is actually the case, the much larger question is how the narrative

economy of competing discourses and the provenance of place might be acting as criteria for assigning value to places in postmodern societies.

If *[murmur]* only provided a single perspective of what a place “is,” it would only succeed in replacing one monologic discourse with another. Instead, the multiple perspectives of the audio monologues represent a Bakhtinian polyphony of discourses: some nostalgic, others amusing, still others historical or deeply personal. Each one arises from a relationship to a particular place, and each discourse is then anchored to that place

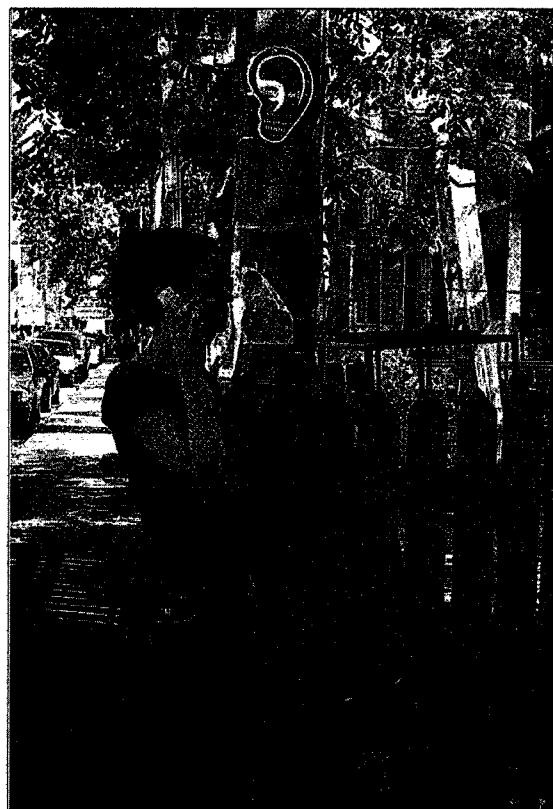


Fig. 3.3 – A pedestrian engaging with *[murmur]* on the street

(Photo: Bryce Macfarlane)

through the use of locative media. Opposed to the “God’s eye view” of traditional maps and histories, *[murmur]* emphasizes what Haraway calls embodied or *situated knowledges* (183-201). While situated knowledge may be partial and incomplete due to a singular perspective, it does not claim to be otherwise. Any truth claims are situated within an individual perspective, a culture and a located context, instead of attempting to claim an objective and overarching viewpoint which supercedes all others. This perspective is not a view from above, but rather the multi-perspectival, crowded and embodied viewpoint at the level of street. The project shares audio historiographies specific to certain subjects in a particular time and place, as opposed to the “authoritative” and unified history of the audio-enabled museum. As Micallef notes, “It’s not the official voice of Toronto. It’s just every voice” (Underwood M7). Roussel remarks that “what makes it dramatic is that it’s not some voice actor. To hear someone actually kinda stutter and be real, that’s how people actually talk. There’s an accessibility there” (Toman 2003). Furthermore, *[murmur]*’s Gabe Sawhney notes that, “We really want to hear accents. Accents are one of our favourite things, because they help differentiate perspectives and experiences” (Whyte B06). The situated knowledges embodied in accents and discourses produce something which is paradoxically Other, but also more realistic, personal and engaging due to its specificity. The multi-perspectival viewpoint of street-level pedestrian culture is represented through the many voices of the storytellers, in all their verbal distinctiveness.

The site-specific stories of community dwellers, delivered by cell phone to an audience, transform reified *spaces* into “lived” social *places* of collective memory,

folklore and affect. As Micallef remarks, “People ignore a lot of stuff in our surroundings, but once you lay a narrative on it, it becomes a place. You might dislike the story but you can't ignore it” (Perlman 2005). The space/place dialectic, analyzed by de Certeau in *The Practice of Everyday Life* (1984), sees the notion of space as fluid and based on spatial practices, whereas place is more static, but has its basis in narrative and affect (de Certeau 1984: 117-120). Part of what [*murmur*] attempts to do is ensure that for audiences, “the smallest, greyest or most nondescript building can be transformed by the stories that live in it. Once heard, these stories can change the way people think about that place and the city at large” (Micallef et al. 2003). By “changing how people think” about the city, transforming spaces into “activated” social places, the project reveals the embedded socio-historical meanings and contingencies of materiality. A conscious awareness of the built environment’s contextual, social and historical dimensions in turn produces a subject that is able to *imagine the city otherwise*. As one user remarks, “After an afternoon of listening to the Green Ears, the truth hit me. [My city’s] great strength lies not in its population or skyline or riches, but in its incredible wealth of stories” (Herhold 2006). This shift in audience perception away from the physical city and towards an appreciation of the city as a performative process which is inherently narrative is quite remarkable. The semiotic notion of the “city as a discourse” (Barthes 1966), clearly evident here, is exactly the type of perspective and experience that [*murmur*] hopes to foster. Technology is not used to despatialize or transcend a sense of place, but rather to enhance it, and underscore how a sense of place is constructed through use and narrative.

The performance of these oral histories over cell phones means that, “the user is free to wander throughout the space, touching the objects and structures described in the story” (O'Donovan 2003). By allowing an embodied and tactile freedom, the project exemplifies what Nick Kaye sees as one of the defining features of site-specificity: “a working over … a restlessness arising in an upsetting of the opposition between ‘ideal’ and ‘real’ space”—that is, a problematization of the relationship between the socio-cultural sign and material referent (Kaye 2000: 46). “Furthermore,” Kaye continues, “in upsetting or deconstructing these oppositions, site-specificity is intimately tied to notions of event and performance”. Or as *[murmur]*’s Micallef remarks, “[h]earing a story in the space where it happened lets you feel the story and reconcile it with what you see and feel around you” (qtd. in Bowness 2004).

### Memory/City/Politics

**214618: 169 Augusta**

Timber Masterson

▶ [ ] [ ] [ ] [ ]

Emma Segal

▶ [ ] [ ] [ ] [ ]

To respond to a story, or if you've got a story of your own about 169 Augusta, [tell us about it.](#)

~ info@murmurtoronto.ca ~

Fig. 3.4 – Entry for the Lobster Island Seafood Company

In one example from *[murmur]*'s cell phone narratives, a storyteller remembers a bar that once existed at 169 Augusta:

So, 169 Augusta...the Lobster Island Seafood Company—a wonderful place to acquire lobster—but you know it wasn't always Lobster Island it was this place called the Sibony Club, which was sort of an after-hours dive bar kind of thing ... The good thing was there would be all sorts of different things, like one night there'd be a band, another night there'd be some sort of avant-garde theatre thing, one night some lesbian poets and Frisbee throwing—so it housed a really nice variance ... It was a great little place and I don't know what happened to it.

(#214618: Timber Masterson)

The listener is forced to reconcile the material referent of Lobster Island with the description and signs of the Sibony Club. Such an approach implicates the viewer as a co-creator of meaning by having him or her reconcile the two versions of the same place. The aim is to have the audience “work over” these overlapping historical moments until they resolve into a new synthesis: an appreciation of place that is both material and historical, as well as deeply social and textual. The performance of place reveals “lived realities as practiced,” integrating a site’s materiality and conceptual content with its social dimension and narrative historiography (Soja 11).

*[murmur]* relates the collective memory of the city and *relies on memory* to construct an imaginary mise-en-scène that is relatively complete. It is a curious reworking of the *ars memoria*, a mnemonic technique whereby “memory places” were constructed

and designed to aid in the organization and recall of oratorical scripts (Yates 19). In this case, however, we walk through someone else's "memory place," digitally reproduced and transmitted via touch-tone phone. Some places, such as The Sibony Club, now exist *only* as a "memory place." With each rhetorical performance, however, it is reconstituted through language, reconstructed as an imagined mise-en-scène for the listener. As [*murmur*] collaborator Gabe Sawhney says, "I love it when I hear that someone listened to a story about a shop/bar/building/whatever, which is gone now, and they'd forgotten about, but had a flood of memories rush back when they heard the story" (Alderman 2004).

As M. Christine Boyer notes in her study, *The City of Collective Memory* (1994), the modern notion of a teleological history "banished subjective storytelling, eliminated the dangers of otherness, and eradicated lived traditions so that it could substitute instead a fictional order of time progressing toward the future, ever improving upon the past" (21). The "memory place" of The Sibony Club is reconstituted and reinserted into discourses of the city through the kinds of subjective storytelling that [*murmur*] encourages. Such stories resist a teleological interpretation of history and the "highest and best use" arguments of city planners and developers. The view of history from the late eighteenth and nineteenth centuries "established a linear sequence of cause and effect; it belonged to science and the present, not rhetorical persuasion or didactic illustration [of the past]" (Boyer 22). Thus, the past is viewed as merely a stepping stone to a more progressive and evolved present without recognizing its contributions and persistence in the present era. What Boyer favors instead is the notion of a City of Collective Memory, which provides "a better reading of history written across the surface and hidden in forgotten subterrains of

the city" (22). In most cases, the "forgotten subterrains" of the modern metropolis only exist in libraries and private memories, further separating the past and present through spatial distance. In contrast, what site-specific projects attempt to do is overlap the past and present (and often the future) by bringing them into collision with one another, avoiding or disrupting a teleological view of historical progression. By juxtaposing past, present and future and privileging none of them, we can begin to see linkages, oppositions and alternatives that would otherwise be eclipsed by a single historical vantage point.

While Boyers sees the modernist interpretation of history as inimical to the City of Collective Memory, she also doubts that postmodernism in its current form can provide viable solutions to current urban problems. To "totalize," is for Boyers to yield to modernity's desire to master and dominate city space, or to experience the city in a coherent and integrated manner (5). This is somewhat of a sweeping statement, considering that political entities such as the European Union are decidedly postmodern in their composition and constitution, yet still act in a unified manner. Likewise, not all strains of modernity advocated mastery and domination, and in fact many anarchist, syndicalist, and ecological discourses were directly opposed to domination and the homogenization of difference. However, Boyer's point regarding the need for a communal vision and political investment in cities is well taken. If we are to revitalize the urban environment, through locative media or otherwise, there must be some situated consensus regarding "the public sphere," "the city plan," and "collective memory," rather than continuous deferral; the utopian political desires of modernism need to be reclaimed while

also recognizing the necessity of multiplicity and diversity for a healthy polis. Boyers continues:

Adrift in a sea of fragments and open horizons, our postmodern position is ambiguous. We cannot speculate or reflect on a more rational and equitable form for the city for fear of erecting perspectival wholes and illusionary totalities that might exclude or homogenize what we believe must remain plural and multiperspectival. Confronted with an all-too-totalizing system of late capitalism with its global reach and administrative rationalizations, however, the indeterminacies and undecidabilities of our postmodern stance offer no virtuous solutions with which to confront contemporary crises, nor allow us to oppose and resist the increasingly uneven development of our cities and nations (5).

I quote this section at length here because it provides a good summary of our current situation regarding political resistance; at the same time, it also shows the problem of making broad generalizations about modernity and postmodernity. Boyers is generally correct in characterizing much of postmodernism as politically paralyzing and ineffectual in opposition to global capital; however, her binarization of modernity and postmodernity is itself overly totalizing, perhaps reflecting a bias towards nineteenth-century ideals of cities and politics.

As already noted, not all postmodern political entities endlessly defer judgement (in the case of the E.U.) and not all modernist movements had universalization at their core (as in the case of anarchist, syndicalist or ecological movements). The problem of creating “perspectival wholes and illusionary totalities that might exclude or homogenize what we

believe must remain plural and multiperspectival” to which Boyers refers is the question of totalization vs diversity that often frames the modernist/postmodernist debate. It can be understood largely as a question of scale, in my analysis; one need not choose modernism as Boyers does, but one must consider the levels at which the micro- and macropolitics of power come into play, intersect and overlap for individuals in relation to larger communities. Postmodernism is in many ways a politics of identity and individualism born of late capitalism, whereas modernism sought in many cases to unify masses of people under the nation-state. So rather than seeing modernism and postmodernism as past and present (bowing again to a teleological, rather than archeological view of history) or seeing these movements as purely oppositional, I would argue that postmodern micropolitics dominate at the level of the subject, whereas modernist politics still hold sway at the level of the social and nation-state. Thus it is not a question of adhering to either a modern or postmodern politics vis- à-vis cities and states, but rather recognizing the levels—individual, social, societal, global—at which aspects of these discourses are best deployed. Furthermore, the macropolitics (of the social or the state) and the micropolitics (of the subject) are also divided, as Deleuze and Guattari note in *A Thousand Plateaus* (1988), “between the molar realm of representations, individual or collective, and the molecular realm of beliefs and desires in which the distinction between the social and the individual loses all meaning since flows are neither attributable to individuals nor overcodable by collective signifiers” (219). This disjuncture between the fluidity of desires and static, aggregate representations means that the subject and the social are constantly being internally recoded and their interrelationship renegotiated. What this indicates is that

although “the city” or “memory” may seem necessarily totalizing—and to a certain degree they are—they nevertheless are being constantly revised as collective signifiers and renegotiated in relation to a fit with actual, individual desires.

### **The Performativity of Space**

The constant revisioning of the city as a set of signifiers and narratives implies that it is performatively produced over time through a negotiation of space and discourse. In *[murmur]* these negotiations are made explicit, by having the audience member partake of a narrative performance of the city, and by having him or her perform in a narrative mise-en-scène. The first performance—that of the disembodied storyteller on the phone—is akin to the auditory mimesis of radio drama, whereby aural descriptions construct an imaginary mise-en-scène and its characters. This form demands the active participation of the listener to “fill in the gaps” or concretize the scene through audience reception; the audience member draws upon previous experiences and images in order to conjure an imaginary scene that is relatively complete (Beck 1). Our listener, meanwhile, stands in front of a building with a cell phone pressed to his or her ear, attempting to reconcile these real and imagined spaces. The slippage between the site-as-referent and the audible signs that constitute the mise-en-scène demands active participation—indeed, an active *performance* on the part of the audience member. Going beyond the participatory “filling in the gaps” of radio drama, here the audience member is actually interpellated into the “programmed happening” both at the level of site-as-set and as an

active interpreter of and participant in the production of signs. Interpellation, a term from Marxist media theory, denotes both the positioning of audience members within a pre-existing structure and their constitution as subjects, building as it does on Louis Althusser's original notion of subjectivization (Lapsley & Westlake 12).

The aural nature of the descriptions on the cell phone affects what Marshall McLuhan calls the “allatonceness” of auditory experience that surrounds and permeates the listener, in opposition to the single, dominant perspective of visual gaze (116-7). “By using a mobile phone,” remark the *[murmur]* collaborators, “users are able to listen to the story of that place while engaging in the physical experience of being there” (Micallef et al., 2003). While the interpellation of the audience/subject into the auditory mise-en-scène may confound our typical notions of audience and performer, Brenda Laurel notes in her provocative book *Computers as Theatre* (1991) that “feel[ing] yourself participating in the ongoing action of the representation” is one of the hallmarks of interactivity (Laurel 20-1). This narrative interactivity means the audience participates in the action from *within* the representational frame. The auditory mise-en-scène, like the theatrical stage or the GUI interface, places the subject in a zone where they themselves are being socially constructed while constructing meaning; the subject is active in the *performative production of space, while performing within the limits of the mimetic frame.*

The audience-participant necessarily engages with the social practices, speech acts and discursive practices that performatively produce the built environment as it is experienced. The socio-historical dimension extends our experience of the city to give it

historical depth; by experiencing the city as a series of moments and memories, one gains an appreciation for how it has been performatively produced, constructed and experienced over time. If we think of the city as merely physical, a static and given topography devoid of the practices of power/knowledge, we risk overlooking the historical, discursive and social practices that actively produce it. As Judith Butler remarks, performativity should lead us to

a return to the notion of matter, not as site or surface, but as *a process of materialization that stabilizes over time to produce the effect of boundary, fixity, and surface we call matter*. That matter is always materialized has, I think, to be thought in relation to the productive and, indeed, materializing effects of regulatory power in the Foucaultian sense. [...] And how is it that treating [...] materiality [...] as a given presupposes and consolidates the normative conditions of its own emergence (Butler 9-10; emphasis in original).

Performativity in/of the built environment means the interrogation, reworking, and iterative deployment of signs and practices; in doing so, we discover that the city is not a normative set of objects, but rather has been discursively produced over time through a process of iteration and iterative citationality (Derrida, 1971, 1988). More often than not, this normative city exists through the maps of city planners and is not based on the symbolic, cultural, experiential and social needs of its citizens. Seeing the city as an artifact, rather than an ongoing process of citationality, iteration and the materialization of discourse and meaning, is part of a much larger cultural norm that accepts the artifacts of society as merely objects, rather than the effects of performative “practices,

arrangements and ensembles ... which permit certain objects to materialise or solidify and not others" (Mackenzie, 2003: 3).

The speech act gains its authoritative power through citationality, but it gains its productivity through its ability to shift meanings and interpretations iteratively over time. Since this shifting of meaning must necessarily take into account reception and context, performative acts also force us to rethink the situation in the present, as well as reading 'backwards' our prior schema of specific acts, words or meanings to reassess prior interpretations. Meaning derived from performative acts, whether through spatial annotation, case law, or the collective edits that comprise Wikipedia, is determined by small acts over time that are inscribed, corrected, edited in a system of regulatory feedback and collective, distributed agency. Similarly, cities undergo this same process of regulatory feedback and editing, in order achieve a materiality that in some way realizes the desires of distributed agents. The distribution of agency and power within a city may not be equal, due to politics, economics and other social factors. However, the distributed agency of citizens over time can iteratively change meanings and effect the performative materialization of the built environment.

The performativity of space can be understood as the "acting-out" of a place through social practices, specifically actions and utterances, which contextually and through repetition determine its functional meaning within a meshwork of social practices. If a city is "like a discourse" as Barthes claims, then the meaning of each utterance is determined by its function or use. However, determining what a site "is" by looking at its use, both in a discursive context and materially, is never a matter of strict,

one-to-one definition or determination. The meaning of a site is a kind of limit case, a line we can approach but never intersect with, where iterative speech acts attempt to approximate the ontological status of a place through a sustained process of phenomenological and discursive engagement. As West comments on the spatial annotation project *Urban Tapestries*, “[t]he key here is persistence: the messages acquire qualities of space as they endure and accrete in a particular location” (West et al. 2005). Instead of a singular perspective, however, what is revealed is an archeology of difference, a multiplicity of ontological strata, which expose any *single* authoritative claim to be only a sedimentary illusion of fixity. A place, like a word, derives its meaning from its use by subjects and its place in a network of ever-shifting signifiers. As such, any definitions will be provisional, multiple, and temporally specific, rather than static, unitary and permanent.

The idea of the site as a multiplicity, a set of historical and experiential strata that define what a place “is,” is exemplified by the audio entries outside Fresh Baked Goods at 274 Augusta:

Pete Pelisek: I was walking home down Augusta towards College Ave. It was about three or four in the morning ... Across the street on the other side of College I see a deer run by. I had never actually in my life seen a deer of the wild before...

Laura Jean the Knitting Queen: And so I thought this guy probably likes me. At that point I didn’t realize it would be five years later and he would have joined my

company and we'd be working together...and we'd be engaged at La Palette just down the street and be married.

Jaclyn: I ended up talking to him ... and he said, "but we won't need sweaters soon." And I said, "Oh, why won't we need sweaters?" "Well we won't need sweaters when the gates of heaven open" ... And I was thinking, "alright, I'd better wrap this up." (#232626)

These are three entirely different experiences, with widely varying affect, that are tied together by their spatial location. In turn, these speakers are revealed to be connected to each other through the places they frequent and have strong connections with; as listeners, our identification (or disidentification) with these speakers and their stories shapes our appreciation of a place, and connects us to a historical signifying chain that is grounded in the embodied experience of a spatial location.

The performativity of space rejects that the artifacts of society are merely objects, and rather sees them as the materialization of social discourses and practices over time. A building constructed in 1904, for example, will bear the mark of the cultural matrix which produced it: it is a freeze frame of the moment of production. For architectural theorist Diane Agrest, such an understanding of the built environment is vital if we are "to rediscover time (the time of production)" (17). Frederic Jameson's notion of *The Political Unconscious* (1981) is instructive here. Since "[h]istory...is inaccessible to us except in the textual form," we only have access to history through "its narrativization in the political unconscious" (35). That is, by analyzing cultural artifacts (as texts), we can find evidence of the systems which contributed to its emergence, whether ideological,

symbolic, political, or certain historical modes of production. For Jameson, the dominant systems within the society make their mark on the artist and his or her work at an unconscious level, and can be decoded after the fact through various forms of historical analysis. Agrest's assertion that we can recover "the moment of production" recognizes the material environment as a series of historical "freeze-frames" of cultural production, as well as recognizing the inherently textual nature of buildings, which can be semiotically decoded. As theorist Sigfried Kracauer remarks, "wherever the hieroglyphics of any spatial image are deciphered, there the basis of social reality presents itself" (60).

This view of buildings as texts and spaces as performatively emergent would not have seemed so out of place 200 years ago. Victor Hugo famously remarked that the "book of stone" was being replaced by the "book of paper," that printing was killing architecture (165). Hugo's lament recognizes that prior to the printing press, a vast amount of artistic energy went into the production of buildings, and these buildings conveyed a certain degree of cultural knowledge to members of the society. From the hieroglyphics of the Egyptians, to the statuary of the Greeks, to the stained glass windows of medieval Europe, buildings have always acted to convey cultural knowledge to the public. With the advent of literacy and the era of books, Hugo recognizes a shift in the means of transferring cultural knowledge to one that is more mobile and more permanent due to mass dissemination. In the modern period, the usage of architecture-as-text seems an anomaly rather than the norm. With the advent of digital literacy and locative media,

the mobility of text that began with the book extends itself into all spaces—not just buildings—making the urban environment a readily legible cultural text once again.

### **Imaginary Communities (And Their Actualization)**

The embodied and lived experience of the city is part of the social axis of urbanism that *[murmur]* attempts to trace through memories and folktales. It is the element that distinguishes a congenial “neighborhood” from a set of buildings, and that which *escapes* signification in traditional, objective mapping systems. Its basis in subjective relations and individual desires means that it overlaps Benedict Anderson’s notion of an “imagined community,” or a collective social imaginary with which we seek to identify or which we discursively oppose. As Anderson notes, the size of modern communities usually means that, “members... will never know most of their fellow members... yet in the minds of each lies the image of their communion” (6). Through newspapers, books and other “despatializing” media, the ability to create a social imaginary becomes possible for large populations and geographies. This process is accelerated and complicated by electronic culture, in which multiple identifications are possible and where mass-mediated imagination is now part of the fabric of everyday experience. “[I]magination has broken out of the special expressive space of art, myth, and ritual,” remarks Arjun Appadurai, “it has been incorporated into the images, models, and narratives of global media to become part of “the logic of ordinary life” — a logic which also includes the various social scripts that constitute identity (Appadurai 5).

Different from fantasy in that they hold the promise of ideation and sociality (and therefore collective action), imagined communities are often the first step in creating *actual* communities of shared values and affect (Appadurai 7). Or as *[murmur]*'s Micallef remarks, “[we’re] selling you your neighbours.” Instead of advertising, *[murmur]*'s stories are “actually information you want to hear. It's bubbling up through sidewalks—selling you not more stuff, but experiences and people” (qtd. in Pugh 2004). The project's stories use locative media to create an imagined community at the local level, in order iteratively to actualize a neighborhood rich in social practices and relations.

Another performative social practice is at work as well. *[murmur]* actively encourages people to take walking tours of the neighborhoods and use cell phones to explore stories. Co-founder Gabe Sawhney remarks, “we wanted (the project) to be engaging, to encourage people to get away from the [computer] screen and go physically experience these places” while listening to the stories (Alderman 2004). In some cases, urbanites literally stumble into *[murmur]* during the course of their pedestrian activities, their curiosity piqued by the strange green signs with phone numbers on them (an experience described in the September 25, 2003 edition of *Eye Weekly*). The project's emphasis on pedestrian culture (indeed, Micallef now writes an urban culture column for *Spacing* magazine) situates it both within the practices of everyday life defined by de Certeau and in the radical gestures of Situationist psychogeography.

In his chapter on “Walking in the City,” de Certeau he speaks of how pedestrians not only read the city as a set of signs, but also, and more importantly, write it as well.

“The story begins on ground level, with footsteps,” he writes (de Certeau 97). He further, notes that

[t]he act of walking is to the urban system what the speech act is to language uttered ... it is a process of appropriation of the topographical system on the part of the pedestrian (just as the speaker appropriates and takes on the language); it is a spatial acting-out of the place (just as the speech act is an acoustic acting-out of the language); and it implies relations among differentiated positions.

(97-8)

Here, de Certeau echoes Saussure and Derrida in pointing out that a system of signs depends on the relational differences in order to be meaningful. Walking, then, as spatial production and as space of enunciation, is both a practice of everyday life and source of performative praxis; the speech act and the stroll are seen as similar, expressive deployments of communicative action. How we walk, where we walk, what we do while walking, become tactics that over time nudge the city into new iterative arrangements. Simply put, our practiced proxemics affect the city over time. If pedestrians decide to walk on the grass, or that a community is a no-go zone, over time these decisions iteratively affect the composition of streets, cities, and even subjects.

As Steve Johnson writes in his popular study *Emergence*, “it is the sidewalk—the public space where interactions between neighbors are the most expressive and most frequent—that helps us organize [the composition of a neighborhood]. In the popular democracy of neighborhood formation, we vote with our feet” (91). In viewing neighborhoods and cities as “patterns in time,” Johnson stresses their emergent and self-organizing aspects

(91, 104). He recognizes that such systems are complex iterative processes that result in a “materialization of effects” (in Butler’s memorable phrase). The neighborhood that emerges over time is an effect of performative social actions and relations of subjects who “vote with their feet”.



Fig. 3.5 -- A *[murmur]* sign over a farmers' market stall

(Photo: Bryce Macfarlane)

Pedestrians (re)write the city by walking. As a kind of story, a walk is composed of “debris. . .leftovers. . .fragments of scattered semantic places. . .combined with things extra and other.” The walk exceeds the rationalized order of the city that is “punched and torn open by ellipses, drifts and leaks of meaning: [it is] a sieve order” (deCerteau 1984:

107). Part of what [*murmur*] attempts to do is produce this excess of meaning in the city, to replace the grid with the story, to ensure that “what the map cuts up, the story cuts across” (deCerteau 129). A reporter who stumbled across the [*murmur*] project by accident remarked that, “after listening to a couple [of stories], we found ourselves wandering around the market with our phones searching for little green signs” (*Eye Weekly* 2003). The work therefore changes our relationship with the city, our appreciation for it, and changes “what a city is for”: the city as interface, the city as play, the city as *theatrum*. The day we “searched for little green signs” becomes a walk and narrative in itself. As we have mentioned, for Barthes, “the city is a discourse,” but even more than this it “is truly a language: the city speaks to its inhabitants, we speak our city, the city where we are, simply by living in it, by wandering through it, by looking at it” (168).

### **Walking and Psychogeography**

As Micallef notes, “Discovering how the city changes as you stroll through it excites us [...] that by stepping outside of the daily routine – a psychogeographic *dérive* – and approaching the city from a different perspective than the usual, [we believe] a richer perspective can be achieved.” “Hearing these stories,” he continues, “like a psychogeographic walk through a city, can give one a new appreciation of places that may have seemed nondescript or banal” (O'Donovan 2003). Psychogeography was defined by Guy Debord and the Situationists as “the study of specific effects of the

geographical environment, consciously organized or not, on the emotions and behaviour of individuals" (Debord, "Introduction"). The Situationists, active in Europe in the 1960's, sought to reconcile Surrealism and Marxism through the integration of art with everyday life. Their critiques of capitalism, urbanism, and the spectacle of consumer culture have been highly influential on discourses of urbanism and anarchism, while many of their critical practices have been adopted by modern day activists, performers and psychogeographers.

Central to much of Situationist thought is the notion of the "spectacle" as laid out in Debord's 1967 polemic *Society of the Spectacle*: "In societies where modern conditions of production prevail, all of life presents itself as an immense accumulation of spectacles. Everything that was directly lived has moved away into a representation." Building on Marx's notion of Capitalist alienation, he remarks that "[t]he spectacle is not a collection of images, but a social relation among people, mediated by images" (Debord, *Society of the Spectacle*). It is a result of the Capitalist mode of production, which prioritizes images and consumption over a directly experienced reality. Situationist tactics are designed as a means of re-experiencing the world from a new perspective, as a work of art, rather than repeating the same patterns of an inauthentic existence within the spectacle.

The Situationist practice of the *dérive* (or drifting) is a walking practice inherited from Dada and Surrealism, and this concept was a major influence on the construction of *[murmur]*. Tactically, the *dérive* of psychogeography involved "locomotion without a goal," in which "one or more persons during a certain period drop their usual motives for

movement and action, their relations, their work and leisure activities, and let themselves be drawn by the attractions of the terrain and the encounters they find there" (Debord "Theory"). It is, to use Deleuze and Guattari's term, an act of *deterritorialization*, whereby the normal connections and relations that constitute a given space are interrupted and suspended (1993:157-9). The reterritorialization of space occurs in the construction of new meanings, making new connections and new discoveries by going to places not predetermined by our habits, obligations, schedules or needs. This reterritorialization is also affected through the making of new cognitive maps drawn from subjective experience (Jameson 1991:51-4). These new maps, centered around the subject—like de Certeau's stories—cut across, exceed and even replace the rationalized grid of urban planning. The *dérive* functions through trajectories of desire, curiosity and chance more than anything else, in order that we might reconceptualize the city.

The new conceptual map of the city produced by this process is a heterogeneous assemblage of experiences and desires, more hypertext narrative than cartographic representation. Describing the importance of the psychogeographical *dérive*, Micallef says that "[p]eople get locked into their daily path and they tend not to veer off that path. They go from pocket to pocket and just experience the stuff that they know" (Underwood M7). In short, our everyday experience of the city corresponds to a linear text, "locked into" certain paths and static narrative trajectories. Psychogeography, on the other hand (and particularly the *dérive*), works to break up linear pedestrian activities so that they resemble something much more like an itinerant hypertext laid out atop the city. Each

node has multiple points of entry and exit, and the order in which we explore them affects the overall meaning that we give to the experience.

For example, the *[murmur]* sign posted at Bloor and Lippencott (#276663: Jaclyn) allows the listener to access stories about a father's spontaneous visit to see his daughter, or a woman who loses her roommate's cat while house-sitting. From here one has a choice of four adjacent nodes: northeast to Seaton Walk Park, east to 535 Bloor, southwest to 581 Markham or northwest to 506 Bloor (cf. [murmurtoronto.ca/annex](http://murmurtoronto.ca/annex)). At Seaton Walk Park, the spectator can hear about the attempt to establish a park with indigenous plants, or the story of watching the police attempt to arrest an urban nudist over lunchtime (#278663: Geoff and Molly). Wandering east to 535 Bloor results in a story about seeing a man intently reading *Hypnosis for Beginners* (#275661: Roberto). If you travel southwest, you can hear stories about the ghost of the Victory Café and how Patrick almost burnt the bar down, as well as childhood anecdotes about going to a father's hidden art studio (#267761: Patrick and Perry). Choosing to go northwest to 506 Bloor would reveal stories centered around the Bloor Cinema: about a secret admirer of the boy who changed the marquee signs and the family who ran the cinema for years (#275664: Jaclyn).

As one can see from this short list of selections, the possible narrative trajectories are varied and extensive, allowing each pedestrian audience member to choose his or her own unique path through these stories. As Galloway and Ward note:

Representational technologies (the map, the photograph, the GPS trace) capture and expose moments within the city's history. But in the moment of capture the

viewer's gaze is projected onto the city as a *happened place* or totalising system of meanings and relations. This freezing of relations--however temporary--can be limiting when we consider the desire of locative media to effect cultural change. A map without multiple entrances--a map that denies multiple interpretations--is a map that discourages change, that presents the world as a *fait accompli* or worse, a world without *hope* (5).

By moving away from totalizing definitions of place, allowing multiple narrative paths, and encouraging community involvement in producing new content, *[murmur]* avoids the freezing of relations that Galloway and Ward describe. By including the audience member within the *mise-en-scène*, as an active participant in the process of site-specific performance, the work exemplifies a model of decentralized, performative spatial production through the use of the techniques of Situationism. The street-level experience of *[murmur]* illustrates the actual strength of the *dérive*: creating non-linear, combinatory storylines. The performative, psychogeographical techniques of the Situationists (and the stories unearthed by them) can be seen in this way to create a kind of spatial hypertext of the city *avant la lettre*.

The appeal of the *dérive* both as a way of walking and of seeing, writes Guy Debord, is not an appreciation of “plastic beauty—the new beauty can only be beauty of situation—but simply the particularly moving presentation, [...] of a sum of possibilities” (“Introduction”). The *dérive* emphasizes “the beauty of the situation,” of contexts and events, as the most important elements. *[murmur]*’s roots in psychogeography can be seen in this way—as the construction of a situation whereby the audience member must

reconcile real and imaginary elements of a site and choose a non-linear path in order to multiply narrative possibilities.

### **“Where are you right now?”**

The element of the walk, the discovery of reified places transformed into lived spaces, alters the perspective of the user along the way. Audiences may ask: “What about all these other buildings that don’t have signs? What are their stories? What stories do I have? What other stories are *possible*? ” The absence of signs comes to take on an increased presence in the mind of the user, that forces him or her to reconceptualize or speculate what living in a city of signs—literal, annotative or semiotic—means. This perceptual shift of “seeing the city otherwise”—of seeing it as historical, contingent, social and above all, performative—is what the enterprise of psychogeography is all about.

The experience of the [murmur] project—as a site-specific art work that forces us to reconcile real and imaginary space, as an auditory mise en scène that interpellates its listener into the mimetic frame, as a psychogeographic *dérive* designed to make us “see the city otherwise,” and as a map that emphasizes situated knowledges—is itself multiple. However, the commonality of these experiences is their ability to convey the understanding that historical, contextual, and subjective information is latent in materiality and, similarly, it allows us to see that a city results from the performative

processes of spatial production. In short, it forces us to change what we mean when we ask the question, “Where are you right now?”

Part of the purpose of this chapter has been to show how practices emerging from vastly different fields—locative media from AR research and site-specific art from performance studies—overlap and inform each other despite their differing genealogies. Both are spatial practices that foreground the embodied interactions of subjects with the environment, primary categories of the subject-object relationship which thus require a much more interdisciplinary approach for their analysis.

In addition to bringing together different modes of analysis and historicization, part of my goal is to attempt to get away from ontological understandings of cities and live performance and move them towards a performative model based in embodied interactions, speech acts and iterative emergence. This is important if we are to expand the concepts of performance into the realm of technology, and in turn, if locative media is to be about the people and their environment, not just the technology. The move away from strict materialism towards a performative model of materialization is also vitally important if we are to re-inject historicization, the public sphere and agency into discourses about cities. Part of the way to do that, as suggested by *[murmur]*, is to use the tools of theatre and storytelling to create first-hand interactions with the environment; these interactions performatively actualize new kinds of community, a different understanding of cities, and provide a renewed sense of agency regarding how our actions affect the built environment over time.

We construct the environments that create us; this cognitive and subjective bootstrapping is unique to human beings, and yet we rarely contemplate its scope or significance. The embodied interactions of subjects with their environments will only increase in importance as we begin to embed more and more technology and cultural knowledge in our surroundings. As we begin to construct ‘smart’ environments through locative media, tangible computing and ambient interaction with devices (Dourish 15), we need to understand how this exteriorization of narrative and knowledge into spaces might best serve human needs.

In the long term, the construction of ‘animistic environments’—where digital and cultural intelligence is distributed throughout spaces—brings us full circle to the cultural perspective of oral cultures that predate the printed text. If we are in fact moving towards creating ‘living’ environments that respond to our presence and interactions, then we need a better understanding of the workings of how this secondary orality/aurality works, its connections to the concept of *theatrum mundi* and an appreciation of how ideology functions in spaces that are purposely constructed as extensions of our own subjectivity. The following chapter takes up these questions in its consideration of Radix Theatre’s use of radio broadcasts and live actors in the *Swedish Play*, a work performed during open hours of an IKEA store in Vancouver.

## **Chapter Four:**

### **Radix Theatre's *Swedish Play* and the Acoustic Unconscious**

In the previous chapter, the performativity of spatial production in the [*murmur*] project was analyzed along with the construction of an auditory mise-en-scène. For [*murmur*], the construction of the frame of performance using cell phones focuses the attention of the audience on a particular space or site-of-study. In the case of Radix Theatre's *Swedish Play* (2002), however, the situation is somewhat different: using techniques drawn from Invisible Theatre and Happenings, the play depends on the ambiguity of the real and enacted representation by using live performers hidden throughout a Vancouver IKEA store. This ambiguity allows Radix to comment on the theatrically of the space and conspicuous consumption, while simultaneously interrogating the function and commodification of theatre in a technological age. Radix uses FM radio receivers to deliver a new kind of performance that builds on techniques from radio drama, creating *acoustic unconscious* by leveraging the sensory perceptions specific to aurality. *The Swedish Play* is a site-specific performance that illuminates and interrogates notions of theatre, commercial consumption and the shared social imaginary that is IKEA.

The show played for two weeks in May and June 2002, running four “tours” of the IKEA per night. Since audience members moved about the store and the performers were largely stationary, each successive run could occur with as little as twelve minutes in between shows. For the purposes of the performance, audiences were given an FM

receiver and a set of headphones, a brief set of instructions and a map of the store.

Groups could choose either the Tragedy or Comedy radio streams, which also determined which way (clockwise or counterclockwise) they would travel through the store. The audience was further subdivided into small groups of four or five, so as not to appear as a roving mob, but just a normal group of—perhaps slightly distracted—shoppers. The audio track of the show was a multitrack broadcast hosted by a female narrator with a cool, mid-Atlantic voice, who begins with instructions for the audience:

Welcome to IKEA, and to Radix Lifestyle Theatre's performance of *The Swedish Play*—an investigation of desire and the poetry of object relations. Please follow the instructions in your map and those you will hear throughout the performance.

Special instructions are preceded by the following sound (S/X: Bell). This means that you are about to encounter a theatrical situation or that you are being asked to move on. Take a moment to look around. Is there anything special you can see?

Perhaps there is a performer taking a pose, or perhaps there is an interesting object nearby, or something might be hidden in a drawer? (TSP 0:00-1:01)

Sound effects are thus used to focus an audience's attention on their surroundings and cue them to theatrical scenes; however, the overall effect of the show is to transform the entire IKEA into an immersive performance space. Instructions on the audio track were interspersed with pronouncements on the nature of theatrical performance, audio footage from movies, documentaries, television shows and commercials, as well as pre-recorded monologues and dialogues by the actors on the project.

### Invisible Theatre

As a variation on Invisible Theatre, audience members were asked to “behave just as you would if you were here to browse, like any other shopper” (*TSP* 1:45-1:46). Performers were stationed at various locations in the store, performing actions, happenings or tableaux at predetermined intervals. Other performers took the role of “guides”—dressed as IKEA sales clerks—ensuring that audience members arrived at certain locations at predetermined times, while also performing monologues and occasionally providing customer service to unwitting shoppers. As audience members wandered about the store, actors emerged from the shopping crowd to perform a series of actions or tableaus, or they might have been discovered among the “ready made” sets of

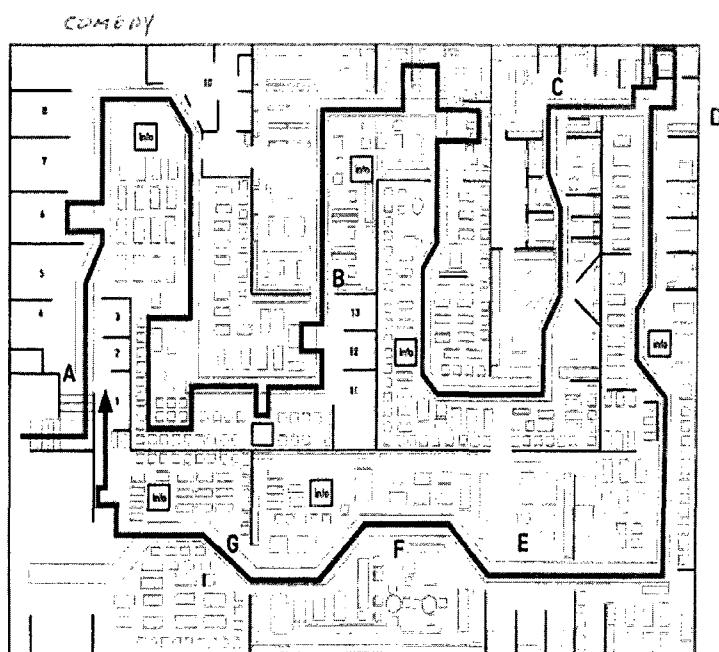


Fig. 4.1 – Map of the IKEA and the path taken by audience members

the store, performing *in medias res*. Since the audience was equipped with an FM receiver, any dialogue on the part of the characters either had to be delivered over headphones (as part of the soundtrack) or more often was absent, allowing the scene to speak for itself.



Fig. 4.1 – Audience members and shoppers investigate a scene in progress

In “Invisible Theatre: Reflections on an Overlooked Form,” Martin Kohtes remarks that Invisible Theatre is “theatre disguised as life” (85). A form developed by Augusto Boal (1985, 1992) for the exposure and public discussion of social issues, Invisible Theatre is defined by several features:

In brief, a troupe of actors devises an improvisational script that will be enacted in the streets or public spaces of a community. The drama is based on a highly

polemical social issue that is of immediate concern to this community. The script revolves around creating a provocative and engaging set of interactions with a public in which the different emotions, positions, and ambivalences of the social issue are presented, provoked, revealed, and debated. The performance is invisible because the actors assume the role of everyday persons and do not announce to the observing public that they are witnessing a scripted drama, which is nonetheless primarily improvisational (Casteneda 77-78)

Invisible theatre involves the public in the action without their knowing it, and therefore “is not realism; it is reality” (Boal, 1992: 15). It draws audiences into its actions and discussions with the goal of forcing people to think about a particular issue. This social provocation becomes a “rehearsal” for actual social change in the public sphere.

Radix’s *Swedish Play* is a somewhat unconventional adaptation of Boal’s techniques. While it does blur the line between spectators and actors, audience members are not active members in the production of the dramatic text; they are, however, encouraged to perform certain actions and movements within the theatrical frame, and thus become a part of the production of the theatrical event. At such points in the work, these “spect-actors” perform for each other and a secondary audience of unwitting shoppers within the IKEA. This secondary audience of “the public” is, however, *not privy* to the scripted text and audio being delivered over the FM headsets, and thus the discursive element, where “different emotions, positions, and ambivalences of the social issue are presented, provoked, revealed, and debated” is largely lost. Thus the ideological content espoused by Boal goes unheard by the general public, and the main

target is the primary audience of paying theatergoers. This situation raises some serious questions regarding the status of Radix's work as genuine Invisible Theatre, but as a variation on Boal's work using technological media, it may need to be judged based on different set of criteria. What is at stake is not only the boundary between "realism and reality," but also the boundary between play—in both senses of the word—and seriousness.

In Invisible Theatre, it is important that the performance maintain its status as "reality" throughout: "[t]he public revelation of the staged artifice would cause the street performance to lose its transformative capacity for participants by becoming theatrical fiction: "only" entertainment or "just" theatre (Casteneda 79). This distinction between reality and theatrical representation—or between seriousness and play—strikes to the heart of one of theatre's main strengths and perceived weaknesses as an art form.

As a form of "serious play" of the type Johan Huizinga discusses in *Homo Ludens* (1938), theatre's representations aspire to a certain kind of reality. If these mimetic representations succeed in the eyes of the audience, they tend to be judged as "serious"; if they do not, they are written off as merely "play". In a culture of instrumental rationalism where productivity (narrowly defined) is lionized, there is the constant threat of art, games and other forms of serious play being judged as "non-productive"; similarly, there is a certain anxiety that role-playing and the imitation of reality will be written off as "childish" or "frivolous". While many theorists have examined the nature of serious play (Huizinga 1938; Caillois 1962; Dearden 1967, Bateson 1973; Csikszentmihalyi 1975), there still remains a disciplinary anxiety that any performance

(Invisible or otherwise) could be disregarded as “only” entertainment or “just” theatre’, as Casteneda observes.

However, the strength of theatre is exactly this “pretension” to reality, as Invisible Theatre director Marc Estrin notes: “Doing guerrilla theatre [here synonymously used for Invisible Theatre] is creating the new world … [f]or the audience, the experiencing of situations which might be true creates the conditions whereby they may *become* true. They are living social change” (quoted in Kohtes 86; italics his). By creating the conditions for social change, theatre becomes a “rehearsal for reality” where different desires and scenarios can be played out and reflected upon (Boal 1992: xxi). Theatre therefore allows us to simulate or play out various scenarios, possibilities and arrangements that reality might take. It does this in a very particular way:

Theatre, in using the human body as its principle medium, is (unlike all other art forms) *in its physical appearance identical with empirical reality*. Theatre is the (actual) event of communicating and at the same time it is the communicating of a (fictional) event - the latter *only realized through the frame of art*, indicated by certain theatrical conventions (Kohtes 87; italics added).

Invisible Theatre intentionally avoids theatrical conventions that indicate the artistic frame of performance to outside viewers, thus deferring aesthetic appreciation of symbolic qualities in favor of ideological content. The threat to forms of instrumental rationalism is that boundaries between productive “seriousness” and non-productive “play” become indistinguishable.

In the case of *The Swedish Play*, much of the ideological content revolves around the fantasies and unreality of consumer culture and the theatricality of IKEA itself. The show itself is paradoxical in that it uses Invisible Theatre—a form which tries to erase the artistic frame and appear identical to reality—to critique or question the reality of IKEA, which is itself staged as a representation. It was, in fact, the very theatrical nature of IKEA's showroom floors that inspired the show. Collaborator Andreas Kahre explains that for him, the multiplicity of objects, “neon coloured and promis[ing] some form of happiness,” reveal a kind of overcompensation, or “a form of impoverishment”.



Fig. 4.2 – Andreas Kahre discussing the rationale of the *The Swedish Play*

“There was something about this feeling of absence or loss,” he continues, “that was made so strongly manifest by the way that IKEA created worlds—none of which you

could ever hope to be truly a part of, or truly inhabit—that made me think it was like theatre “ready made,” [and] that made me want to find a way to speak to [it]” (*Coming Attractions*, 0:16-1:19). If, as Nick Kaye notes, the effects of site-specific art are a result of the “restlessness arising in an upsetting of the opposition between “real” and “ideal” space” (Kaye 46), then IKEA and Invisible Theatre lend themselves to site-specific practices due to their juxtaposition of real and ideal spaces. IKEA represents a staged, ideal domesticity pretending to be reality, while Invisible Theatre uses reality as its stage to generate an ideal through performance. *The Swedish Play* brings these representations into collision and forces us to question which reality seems more empirically valid or desirable — this is Radix’s basic ideological question, deployed through the adaptation of Boal’s techniques for a pre-staged consumer environment.

### **Happenings**

As a form of theatre “ready made,” IKEA’s showrooms present consumers with a staged, ideal domesticity ripe for critique through the tools of Invisible Theatre. In content, Radix’s scenes construct an ideal that opposes the one set forth by consumerism. However, in plot structure, the units of action performed by the actors resemble a series of “Happenings,” described by Allan Kaprow as being: “events which, put simply, happen” [“*Happenings’ in the New York Scene*,” Art News, May 1961, p. 391]; an art form similar to theater in that it takes place in a specific time and a specific location. Its structure and its content are a logical extension of the [performance] environment.

[undated, circa 1965 In Vostell and Becker, p. 46] [sic]" (qtd. in Higgins 270). This provisional definition seems to agree with Kahre's need to performatively "find a way to speak to" the IKEA space, but Kaprow's definition is somewhat vague—perhaps intentionally—in defining what is and is not a Happening. Michael Kirby, expanding on Kaprow's tentative steps in his essay "The New Theatre" (1965), notes that performances like Kaprow's and John Cage's can be thought of as non-matrixed, in that they do not attempt the mimesis of a particular person, place or thing. Rather, they are dependent on time and completion of a particular action:

Acting might be defined as the creation of character and/or place: details of "who" and "where" the performer is are necessary to the performance. The actor functions within subjective or objective person-place matrices. The musician, on the other hand, is *non-matrixed*. He attempts to be no one other than himself, nor does he function in a place other than that which physically contains him and the audience (Kirby 25-26; italics his).

Kirby goes on to distinguish between events (which have only one "compartment" or unit of action) and Happenings, which can have several. Happenings can contain several sets of materials (film, dance, readings, music etc.) just as in theatre, but they are arranged in such a way that their "information structure" is not unified but incidental, often relying on chance operations and aesthetic connections made by audience (Kirby 29).

Ideologically, the purpose of a happening is meant to be "a depollution of the senses" (Suvin 300) that acts as a perceptual cure for the alienating effects of a

technological society. Individual definitions of the effects of Happenings vary by practitioner, but for the most part, they agree with this basic premise of de-alienation:

A Happening "is designed to stir the modern audience from its cozy emotional anesthesia" (Sontag 1969:275); "some specific frustrations, caused by cybernated life, required accordingly cybernated shock and catharsis" (Nam June Paik in Ay-o et al. 1966:24); "the highest priority must be given to the re-education of its perceptions" (Baxandall 1966:29). A Happening is, according to Richard Schechner, "(1) an attempt to bring into celebratory focus the full message complexity of a downtown street and (2) a playing with modes of perception" (1969:148); it isolates events or images in order to revitalize them: "Deadened habits, routine images, unused sensibilities, and even places (Kaprow's highways and supermarkets) are reinfused with meaning," he concludes optimistically (1969:154). (Suvin 299).

By focusing attention on the everyday and by jettisoning habitual modes of perception, Happenings are meant to give us a clearer perception of the world—both the horrors of habitual living that we might have overlooked and a finer appreciation of life's minutiae that escape our everyday attention. In its most optimistic view, the practitioners of Happenings believe that a clearer perception lays the groundwork for new social relations and therefore a new society. In Darko Suvin's terms, Happenings assume "that the techniques of mass persuasion have badly weakened the normative powers of reason, and the only approach left is to subject people to a nonexplicit, more primitive and aggressive kind of experience, which will reorient them through "direct perception" (303). The

attempt to cleanse perception and to reveal the Real may seem like an existential anachronism, or worse a destructive form of essentialism, but I would argue that Happenings—like Invisible Theatre—lay bare the ambiguity inherent in all theatre: Is it real or is it performance? How do we tell the difference between the two?

The thin separation between life and art, and the Happenings that conflate the two, were satirized early on in Louis Phillips' "The Mets and the New Theatre" (1968):

A television presentation of a Mets baseball game ... actually uses film, tape, music, commercials, and non-matrixed performance, and, thus, neatly fits into Mr. Kirby's definition. If a live performance is a necessary pre-condition for a Happening, then it might be pointed out that the Mets often use dance and music in very subtle ways (or not so subtle, depending upon the opposing team). Many a fielding performance by the Mets infield appears to be choreographed by the coin-tossing technique of Merce Cunningham. (482)

While obviously satirizing both the concept of the New Theatre and The Mets, Phillips is nevertheless quite serious when he opines that, "[i]n the New Theatre, the distinction between raw experience and the interpretation of experience breaks down, and the artist becomes an unnecessary appendage, one who has no vital relationship to what he produces" (487). While I do not think anyone would argue that this was not sometimes the case, and that some Happenings were quite dismal affairs, both aesthetically and organizationally, it is revealing that of all art forms Happenings probably draw the most vitriol, with Phillips's critique being a prime example. Phillips's satire of non-matrixed performance brings us back to the question of, "What isn't a happening?" If everything

can be seen as a performance given the correct perceptual framing, how do we separate out the real from the performed? This ambiguity is, I believe, central to attacks on the form, since it provokes an ontological crisis, or boundary-maintenance threat, between our sense of the “real” and “not-real”.

This process of destabilization is central to Radix’s work. As Andrew Templeton remarks, the show is meant to “create unease and to stop the audience from assuming its traditional role as passive spectator”. Radix disrupts traditional framing and conventional narrative arcs in order to force “the audience to consider, in a real sense, the artificiality of the showroom and, hopefully, the processes at work below the surface of consumer culture” (Templeton 46). The consumer culture that Radix critiques includes not only the purchase of goods at IKEA, but also the consumption of theatrical events. The press release for the show states that “*The Swedish Play* examines the nature of desire by investigating theatre itself; its future and its failure, its triumphs and defeats,” and warns theatergoers that the show will likely not be:

- a play
- a series of plays
- a promotional event
- a character study
- an indictment of the corporate paradigm
- a lecture
- a poem (*The Swedish Play – Final Press Release*)

This announcement alters the horizon of expectations of the audience away from traditional theatre and sets them up for a non-matrixed experience where the lines between the “real” and “not-real” will not be clearly inscribed by the proscenium arch. By situating the audience on the limen between the “real” and “not-real”, the audience is forced to choose consciously which one to pay attention to, which is more interesting, and which is more theatrical at any given time. This positioning means that one is confronted with “the inherent theatricality of any and all human spaces and the impact that those spaces have on us as individuals (and, by extension, how those spaces demand that we perform)” (Templeton 46). By attuning our perception to performative elements (as Kaprow would have liked) Radix encourages us to see social performances everywhere, whether they are part of the play or not.

Templeton’s observation that human spaces “demand that we perform” is particularly insightful, since it extends the concept of the performativity of space outlined in Chapter Four in the discussion of *[murmur]*. In that case, performativity was seen as a speech act or form of iterative action that shapes both the conceptualization and materiality of certain spaces over time. However, in the case of *The Swedish Play* and particularly IKEA, the converse is seen as being true as well, with spaces demanding certain kinds of social performances—and therefore shaping human subjects over time—through their interactions with “ready-made” spaces. This is a process which will be discussed later in this chapter, concerning the spatial interpellation of subjects, but for now we should consider the Invisible Theatre tactics of Radix as an intervention in this process of subjectivization.

*The Swedish Play* draws the audience's attention to this process of self-performance in social space, as well as the performance of self enacted by other shoppers. For example, Heidi Taylor remarks of being an audience member: "I see myself observed by other shoppers. The multiple gazes refract each other; my inadvertent bursts of laughter draw looks from curious, but pointedly distant, shoppers" (Taylor 17). This is an expression of the "inherent theatricality" of spaces that "demand that we perform," in this case subverted and inflected by Radix's running audio commentary. Taylor's bursts of laughter caused by the audio soundtrack are also part of what Shuhei Hosokawa refers to as "The Walkman Effect", whereby curious onlookers know that the walkman user is listening to *something*, but not *what* he/she is listening to. Something is there, but is concealed from us: it is an open, public secret that conceals a mobile, private form of pleasure. It is a *public performance of a private spectacle* to which we (as observers) have no access (Hosokawa 177). By allowing audience members access to a private spectacle, Radix sets up another layer of commodity critique by separating out the "haves" and "have-nots" of consumer culture. If one has paid for a ticket to the show, one has access to the public performance and private spectacle; if not, one might notice some of the elements of public performance, despite it being Invisible Theatre, but one would not have access to the private spectacle that provides context and meaning to the show.

Another audience member remarks that, "[i]t was quite interesting to see other people react to the play as it happened, most realized something was happening, as eight people in headphones seemed a bit too much a coincidence. The actors often didn't do

“normal” things either, and I heard one girl say as she passed me “I don't know what the hell is going on, but it's freaking me out [*sic*]” (Tricky Pup 2002). The lines between performer, audience member and shopper blur as individuals attempt to ascertain the roles and motives of others. The destabilization of the performance frame creates an interactive performance space where we are forced to pick and choose who and what to include in the *mise-en-scène*, and what meanings we will ascribe to them.

In one particular scene, actors—who we assume are a domestic couple—mirror each other’s actions on either on either side of partition: standing, sitting, hugging pillows, looking solemn and lost; we are asked to:

Take a look at this room. Who are the characters? What can you tell about their social status? Their age? Their hobbies? Is this a man’s room or a woman’s? If it is a couple do they have children? (*TSP* 11:05-11:33)

The audience is asked to read these characters and their environment semiotically, and in effect provide them with a backstory. The purposeful production of signs—usually the job of actors, designers and directors, is here foregrounded so that the audience can participate in the conscious construction of narratives: about the characters, about the shoppers, about the IKEA itself.

The performance is, as Barthes would say, a *writerly text* that actively engages the reader as a co-producer of meaning—the imposition of “ourselves writing” onto (or into) the text of the world (Barthes 4-5). For theatre semiotician Ann Ubersfeld, the audience member is a kind of bricoleur, who enjoys the pleasure of constructing a personal meaning from the elements that are offered in a theatrical production (Ubersfeld 131).



Fig. 4.4 – The Mirror Scene with an audience member in the foreground

Like Barthes's active reader, who constructs the text out of literary fragments, images and playful juxtapositions, Ubersfeld's audience member uses theatrical elements as raw material for the production of a uniquely personal bricolage of interpretation. Radix's *Swedish Play* uses Invisible Theatre to confuse the real and the performed, and radio drama to mediate the represented and the imagined, in order to encourage the bricoleur tendencies of the audience. What is counted as "important" within the context of the performance are those things that the audience chooses to include: whether part of the intentional performance or not; and whether elements are part of the material surroundings or the audience member's own mental repository of images. While this process also occurs in more traditional theatre, here the "burden of interpretation" is placed much more squarely on the audience, and overtly so. Their embodied perspective

on the event gives them a unique standpoint for interpretation, as does the series of events (scripted or not) that they have encountered up until this point in the show. The destabilization of framing conventions and narrative, combined with an embodied viewpoint, provides a richness of interpretation that would not exist in a traditional format.

Radix's use of the consumer environment to create a series of Happenings or events using aural technology bears striking similarities of Marshall McLuhan's 1967 essay, "Environment as Programmed Happening". In this paper, McLuhan asserts that modern technology has had the effect of creating "create exterior situations that have all the structural, characteristics of the human unconscious," composed of "irrational" and disconnected images that nevertheless present a "mosaic" of our culture in an "all-at-once or mythical structure" (114). As society moves from a written to an electronic culture, the emphasis on visual uniformity, continuity and connectedness that is important for a literate culture of the eye is slowly replaced by non-linear, multi-perspectival, all-encompassing environments of the ear. The auditory space of environments—as opposed to the visual framing and perspective of painting—"has no centre or margins since we hear from all directions simultaneously" (117). An electronic culture shares many of the same structural characteristics as an aural one, since the instantaneous movement of information means that we are constantly surrounded by sense data, making no single point of view possible or no single plane perceptible. The aesthetic framings of reality by the painter or photographer are marginalized, and instead the total environment itself is considered as an immersive art form (117-118).

Part of this historically emergent recognition of the environment-as-art has to do with the speed and pervasiveness with which the environment changes (through renovation or the use of dynamic elements) and the rate at which we can change environments (through travel). A static environment fades into the background of our perception, whereas a dynamic one brings its specificity or aesthetic distinctiveness to the fore. Such a total environment defies a single viewpoint, immersing us in the all-at-once perspective of aurality. The construction of synthetic environments also proceeds at an accelerated pace, whether they are “sets” on the showroom floor of the IKEA or virtual worlds on the Internet. This proliferation of real and artificial environments, combined with the speed at which we are able to move through them, means that “discrimination by comparison and contrast becomes perfectly natural” (120).

However, this ability to discriminate between environments also means that the relationship with the natural and the built environment has fundamentally changed. The natural environment becomes one environment among many, and “[t]he human dialogue [that] used to be carried on with Nature, as it were, and is now carried on with the man-made environment” (124). McLuhan sees Happenings as one form of modern dialogue with the total environment, but also sees the same dynamics in play in the service-based economy: “In the age of electric information the service industries take over the total human environment as their responsibility: everything from government and education to entertainment networks is involved in creating “[H]appenings,” as it were, or in transforming the environment into a work of art” (124). In postmodern culture, this trend has only accelerated, with an emphasis on “experience design” in fields as diverse as

architecture (Venturi 1972), business (Pine & Gilmore 1999), computing (Shedroff 2001) and design (Jones 2009). IKEA is in fact a leader in this regard, since the entire set up of their stores—as a path taken through a series of theatrical sets—is an experience designed to promote various domestic and consumerist fantasies.

Using IKEA as a total environment, Radix stages McLuhan's concept of a "programmed Happening" by transforming the space into a work of art. Their use of an aural technology—the FM Walkman—is significant, since it is a part of electronic culture and prioritizes the sensory perspective of the ear. This designed experience makes for a different kind of theatrical event in terms of the phenomenology of reception on the part of the audience and the ways we connect different elements of a non-matrixed performance to construct meaning.

At the beginning of the show, over the sounds of the *Nutcracker Suite*, the female narrator's voice discusses "Theatre ... infinite possibilities. The whole of human experience: love, conflict, passion, the struggle of opposing concepts and ideas, a mirror of the human condition ..." (TSP 3:05-3:06). The implication in is that the entire IKEA is a mise-en-scène or total environment; our entry into the showroom floor is an entry onto the stage proper, as occurs interactive performance (cf. Laurel 1991). The narrator declares that

49% of theatre audiences believe that good should triumph over evil

64% of theatre audiences feel betrayed by a character's moral ambiguity

62% of theatre audiences prefer happy endings ...

29% of theatre goers admit to being troubled by the anxiety that they will not understand the play. (*TSP* 3:51-5:21)

The effect of hearing these statistics is such that we might look around at our fellow audience members and wonder: “Are *they* one of these people? And what about that shopper over there? Are they part of the 49% who believe that good should triumph over evil, or part of the 51% who believe otherwise?” We end up scanning the visual field for those people, places and things that correspond (however loosely) to the acoustic text, in a process known as acoustic anchoring.

### **Acoustic Anchoring and Production of Meaning**

Christian Metz, a film theorist, asserts that we are conditioned to identify both a sound and its source; within our culture, “sounds are more often classified according to the objects which transmit them than by their own characteristics” (26-27). So we automatically attempt to “fix” a sound to an object or event, or to something that it linguistically describes. The world of sound is “an event-world rather than an object-world” (Ong 1969: 637-8); as such, attention is focused on actions, movements and the relationships of objects in the visual field, rather than contemplating a single object through the modality of the gaze. Sound is much less directed than vision, decentered and pervasive, and as such alters our locus of control; acousmatic sound, or sound for which we cannot find a visual referent, tends to produce a sense of tension, destabilization or impending threat (Chion 24). We therefore scan the visual field for

events and objects that correspond with the audio track, effectively anchoring the acoustic to the visual. This indexical or metonymic linking is explicitly employed in audio museum tours to link sound and vision (cf. Kingsepp 2006), and implicitly in Radix's *Swedish Play* to construct an auditory mise-en-scène.



Fig. 4.3 – Acoustic anchoring of sounds to objects

When we cannot find exact, metonymic objects or events, we tend to find metaphorical ones. The acoustic world of orality is characterized by integrative and correlative tendencies as opposed to the penchant for analysis and dissection that typifies the visual (Ong 1982: 73-77). This process of finding correspondences is motivated by a desire to find the “object” of the sound event and draw connections between objects in auditory field. In *The Swedish Play* this modality is enabled by the FM radio and the

mobile, embodied perspectives of audience members. This process relies on an ability to form connections, on chance occurrences and audience positioning, providing a highly individualized (though sometimes disorienting) narrative experience. When these metaphorical correspondences between sound and sight work, we experience moments of artificial synesthesia, or sensory blending, which are both surprising and aesthetically pleasing.

After telling us that “29% of theatre goers admit to being troubled by the anxiety that they will not understand the play,” the narrator asks us to “consider the following example” (*TSP* 5:12-5:24). The audience stops at a window that looks onto the “set” of a small apartment. Inside, a couple is in the middle of a heated argument; over the headphones we hear the audio track of a Punjabi soap opera. The actions of the performers are synchronous with the dialogue of the soap opera, giving us a sensory blending of sight and sound despite the fact that the actors are not physically delivering the lines we hear—we listen to them pre-recorded over the headset. Regardless of the fact that the majority of the audience probably does not speak Punjabi, and there might be “troubled by the anxiety that [we] will not understand the play,” we are compelled to watch. This first scene is an ironic twist on fourth-wall realism, substituting the window frame for the proscenium arch; the implication is that in realism, we are all voyeurs, peering through the windows into the private lives of others. The technological mediation of the script and voices, combined with our lack of understanding Punjabi, alienates us from the scene; however, instead of our alienation providing us with the critical distance to analyze social and class relations (as is the case in Brechtian drama),

here we are being asked to meta-analyze our own anxieties about “getting it,” and to think about the voyeuristic implications realist theatre.



Fig. 4.4 – An actor sits on a couch with a look of ennui

Many of the performances in *The Swedish Play* alienate, or are meant to make us question, the images of domestic bliss that IKEA attempts to portray (and sell). As the audience members arrive in the sofa room—one of the largest open spaces in the store—an actor strikes a pose of ennui. We hear a monologue that questions domesticity itself by remarking, “[h]ow strange it is...people able to live together...days and nights and years. Five years go by—how do they do it? Ten, eleven, twelve years...” (*TSP* 6:56-7:12). The sounds effects in the background are those of the tropical jungle, implying that the long-term, domestic monogamy exemplified by IKEA is an anomaly in the

animal kingdom. At this point we might examine the couples that are spread out across the showroom space and ask ourselves how long *they* have been together and how successful *they* have been. We survey the environment for acoustic anchors, scanning for couples that might either confirm or deny the above text, as they attempt to find objects of mutual, domestic cathexis.

The monologue shifts into a discussion of speech, cuing us to the importance of language within a dramatic text:

What do people say over a lifetime, trapped in each other's syntax? The same voice, the same droning, tonal repetition [...] They make love, they make salads, but sooner or later they have to speak. This is what shatters the world. Isn't it gradually shattering to sit and listen to the same person all the time, without reason or rhyme? Words that trail away? The pauses, the clauses...

(TSP 7:31-8:31)

Speech "shatters the world" of the domestic image; even though a couple can make love and salads, without language or something to talk about, the advertised image of domesticity remains merely a simulacra, devoid of any actual content. Like the Punjabi soap opera scene, Radix frustrates our desire for conventionally dramatic content, and instead gives us a monologue as passionless, flat and conflict-free as an advertising image.

Our female narrator reminds us that "[c]onflict is the engine of theatre. All encounters between people lead to conflict; this creates the fundamental condition for theatrical performance" (TSP 8:23-8:36). Theatre therefore would appear to be in

conflict with the advertised images of domesticity, which promise a problem-free existence. A cell phone suddenly rings, and our guide answers a phone call from his girlfriend:

WOMAN: Happy birthday.

MAN: Oh yeah, right (chuckles uncomfortably). Yeah, thanks um...

WOMAN: You can tell me when you get here.

MAN: OK.

WOMAN: Where are you?

MAN: 7-11.

WOMAN: Oh, can you get some soy milk?

MAN: Does 7-11 have soy milk?

WOMAN: Of course they do. [...] Which 7-11 are you at?

MAN: Downtown.

WOMAN: Downtown?

MAN: Yeah, by the railway club.

WOMAN: Oh, so you'll be like, half an hour?

MAN: Um, I might stop for a beer.

Woman [Dejectedly] OK. (*TSP 8:51-10:28*)

This rather banal exchange nevertheless contains the conflicting objectives, motivations and desires necessary for theatre. She wants to celebrate his birthday, he does not; she wants soy milk, he wants a beer. For some reason unknown to us, he is lying to her about being at the 7-11, and in the end she feels dejected that he is not coming home soon. It

has all the qualities of a dramatic text, and yet it is also the sort of conversation that we might overhear on the bus or in an elevator; that is, it lacks the heightened sense of reality and urgency we have come to expect from a traditional theatrical performance. However, this banality seems to be part of the point; this is realism in its most extreme form: everyday, banal, unedited. Just as fourth-wall, voyeuristic realism was parodied in a previous scene, here our understanding of realism as an unedited imitation of real life is called into question. Audiences do not go to the theatre to see real life; rather, they go to the theatre to see more-real-than-real-life—the edited, intensified, high-stakes version of what could happen, rather than what does happen. By giving us a slice of the everyday, with its minor conflicts, objectives and intrigues, our expectations of theatre are questioned; are we paying to see theatre, and if we are, how exactly is that different from observing real life?

Seated on a large black couch facing a living room set, the audience is asked by our narrator to:

consider what might take place in this environment: a young couple struggling to meet against the wishes of their peer group; a tragedy of aging alone; a conflict between sisters; the disillusionment that comes with age or the realization that your class your gender your origin will prevent you from reaching happiness; poverty that crushes, even in the face of love... (*TSP 11:36-12:07*)

We are given several premises for tragic plots, but just as quickly as we are asked to imagine these scenarios, the narrator is interrupted by a Mastercard commercial. The commercial lists off all of the commodities (and their prices) that would be needed for a

“priceless” dream vacation along with the tagline: “There are some things money can’t buy. For everything else there’s Mastercard” (*TSP* 12:08-12:39). Radix draws an ironic connection between tragedy and advertising: although we might be promised everything in the Mastercard commercial, the end result will ultimately be tragic disappointment.

### **Radio Drama**

This juxtaposition is more than just an ironic statement on the part of Radix. In the set of dramatic scenarios above, we are being asked to imagine spaces and actions as one would in radio drama. In addition to using techniques of Invisible Theatre to destabilize the audience’s sense of what is real and what is not, and using Happenings as a structuring principle to sharpen audience perceptions, radio drama provides the third key to understanding Radix’s *Swedish Play*, and its relationship spaces of conspicuous consumption.

In his essay “The Mind as a Stage,” Martin Esslin remarks that “[c]oncentrated listening to a radio play is thus more akin to the experience one undergoes when dreaming than to that of the reader of a novel” (7). We are required to use our imagination in a different way, with the mind focused inwards on the construction of a participatory fantasy. Clearly, this is not entirely the case with Radix, since the audience members are free to move about the space, observe real actors and anchor sounds to physical bodies and scenes. However, the element of participatory fantasy that

characterizes radio drama is still evident in many of the scenes that lack metonymic objects in the environment.

*The Swedish Play* occupies a middle ground between (Invisible) Theatre and radio drama: sometimes we are provided acoustic anchors, sometimes we unintentionally find them using metaphorical (aural) logic, and sometimes we are asked to imagine the actors and scenography as we would in a radio drama. The play selectively chooses when to synchronize the eye and ear, when to suggest a connection between the two, and when to substitute the inner eye for the outer. These selective shifts move signification back and forth along an axis of metonymic and metaphorical representation: synchrony between the eye and the ear results in an external metonymy, while their disjunction results in a kind of pattern matching that is highly metaphorical. When the listener resorts to using the mind's eye to visualize the spoken text—as in radio drama—metonymic connections again occur, but are generated in the mind of the audience member, rather than displayed by Radix's roaming actors. By mediating the performance through the use of the FM walkman, Radix can manipulate the connections between the seen and the heard, and the degree of metaphor and metonymy, in a way that would be difficult or impossible to achieve in conventional theatre.

William Stanton suggests that part of the pleasure of radio drama might be that the form “is akin to going on a journey through another unconscious – not the writer’s, nor the actors’, but a complex, allusive acoustic bricolage” (Stanton 103). As the audience moves into IKEA’s shelving and storage area, performers look through the units and examine commodities. Evoking Derrida’s interpretation of memory as a kind of

archive (1996), the actors sift through storage as we hear jazz music and a woman's airy reminiscences over the headphones: "There was that time when we had dinner, on our anniversary, the way you looked at me...your hair. We were like two wolves over one carcass...we tried not to devour each other" (*TSP* 13:22-13:34). We seem to wander through "another subconscious," drifting through the memories of the other.

Radio drama is well suited to this kind of *dérive* through the subconscious since it is one of very few art forms that is not anchored to material representation. For this reason, Radio drama is perhaps most like Surrealism, which likewise lacks a material referent and instead gestures towards subconscious or imaginary content (Stanton102). The reliance of radio drama and Surrealism on subconscious content to produce art creates obvious parallels between the two, even if traditionally their content has been poles apart. Surrealism, as an artistic movement, relies not on any given medium but utilizes many in the materialization of imaginary objects, spaces and scenarios. Radio drama, on the other hand, is more specifically about the medium, and has traditionally taken its cues from Realist theatre. However, given that radio drama has changed a great deal since its inception, with the proliferation of FM headsets, internet broadcasts, podcasts and pirate radio, we might do well to revisit the effects of sound on the listening subject and how that can be deployed to either Surrealist or at least psychological ends. Radix's use of the FM headset to produce a "journey through another unconscious" seems to point in this direction, made particularly effective by their often surreal imagery and commentary.

In the previous chapter, I discussed the concept of the psychogeographical *dérive* of Debord and the Situationists (who inherited many of their concepts from the French Surrealists). In psychogeography, one explores the psychological resonances of the environment through various games and chance occurrences brought on by a *dérive* or some other tactical intervention. In its most extreme form—in the moments they came the closest to the aims of Surrealism—the Situationists advocated the construction of cities and architectures where psychological connections and emotional content were not just an aftereffect of the built environment, but rather were the governing purpose in the design of such structures. This “Unitary Urbanism” is perhaps illustrated best by the theory of “mood-quarters, according to which each quarter of a town should tend to provoke a simple feeling, to which the subject would consciously expose himself” (Blisset 1). Emotional and subconscious content thus becomes material and spatial, built into the city as a whole, so that internal psychology and the external environment might be in congruence with each other. In the case of *The Swedish Play*, Radix takes an environment already designed to produce a certain type of emotional experience and satirizes it, in an act of Situationist détournement of the existing psychogeography that IKEA is trying to create.

With radio, and more specifically portable radios, walkmans and iPods, we can (and do) adapt our psychology and emotions to the geographical environment through portable sound. Radio sound permeates us and surrounds us, and thus is highly effective at changing our psychological and emotional states: “[R]adio sound has the ability to engage with people’s emotions. Radio is used to maintain or alter mood – it is

emotionally evocative and reassuring” (Tacchi 1998: 291). Instead of adapting geography to our psychology, radio listening—and by extension radio drama—can act to fit our psychology to the environment. As audio theorist Michael Bull notes, sound and private listening operate within a dialectic of mediation and colonization (or territorialization) of the environment (Bull 2000: 164). In its mediatory aspect, it allows users a mobile private space at a level of remove from everyday public events. In its territorializing function, walkman sound becomes a way of creating a performative, subjective narrative that crisscrosses spaces (Thibault 332-9), while at the same time providing a cinematic perspective of the world through its sonic aestheticization (Bull 2000: 193-5). As a tactic of everyday life, we use radio and walkman sound to engage with the environment and create our own adaptive psychogeographies.

The use of walkman sound in Radix’s work is particularly effective, since ‘sounds are as close to us as our thoughts’, as Berkeley once noted (9). As Don Ihde remarks, “[i]nner speech is an almost continuous aspect of self presence” which represents a “modality of spoken and heard language” (Ihde 65). The very familiarity of this process means that we rarely contemplate thinking as a phenomena of our “mind’s ear” until sounds that are external to us become so loud that “we can’t hear ourselves think”. The inner monologue that characterizes thought is a distinctly auditory phenomenon, a manifestation of consciousness’s “mind’s ear,” as opposed to the imaginative “mind’s eye”. The use of radio in Radix’s work is highly significant in this respect, since the audio voiceover mimics the auditory process of self-narration. Acting on the auditory stream-of-consciousness, the play intervenes in our mental perceptions and descriptions

of the environment, replacing them with something much more surreal. The connections between thought, hearing and the “talking cure” of psychoanalysis overlap in *The Swedish Play* through the use of a technology that closely approximates the processes of the “mind’s ear”.

### **The Auditory Unconscious and Spatial Interpellation**

The use of walkman sound in the *Swedish Play* invokes radio drama’s connection with unconscious content and affect to produce what I call an “auditory unconscious” of space, in this case, that of IKEA. The entire play is a kind of wandering through the unconscious of another (the Radix collaborators) in a surreal(ist) piece of radio drama that is punctuated by Happenings and other events. Like Benjamin’s optical unconscious, which allows us access to material that would not be captured by the human eye (1931), the auditory unconscious allows us access to the psychological textures, affect and subconscious narratives of a place through the use of radio sound. If projects like *[murmur]* work to create performative spaces of historical and social depth—as a kind of spatial archeology—then Radix’s version of locative praxis is more akin to the psychoanalysis of space, along with the intermittent performance of subconscious content. If *[murmur]* attempts to overlay the built environment with stories, then Radix superimposes their own brand of Surrealism on the environment by confusing the roles actor, spectator and shopper through Invisible Theatre; performing impromptu

Happenings in a seemingly normal, rational environment; and giving audience members access to another's subconscious thoughts, fears, dialogues and soundscape.

IKEA is the perfect place for overlaying the environment with an(other) auditory unconscious, since as a commercial entity it already is actively engaged in the production of subconscious desires and associations with their products. IKEA is already a kind of psychogeographical terrain, since its objects are overlaid with our desires for order, style, domesticity and so forth, via the medium of advertising. Yet this use of advertising for the manipulation of the unconscious is a relatively modern development, and it is important to understand it in order to appreciate the logic behind Radix's critique.

The nephew of Sigmund Freud, Edward Bernays, originated the idea of connecting products to emotional responses and subconscious desires. The idea caught on with bankers and manufacturers in danger of post-World War I industrial overproduction; Paul Mazur, a banker at Lehman Brothers and Bernays's business partner remarked that, “[w]e must shift America from a needs to a desires culture; people must be trained to want new things, even before the old have been entirely consumed. We must shape a new mentality in America: man's desires must overshadow his needs” (Gore 94). Suddenly irrelevant objects became powerful symbols for how one wanted to be seen by others: you bought things not out of need, but to express your inner sense of yourself to others (*Century of the Self*, 13:47-19:10). This replacement of the use-value and exchange-value of an object for sign-value is examined extensively by Baudrillard in his *For a Critique of the Political Economy of the Sign* (1981), in which he examines the process by which commodities become produced as signs and signs become produced as

commodities. This historical transition is largely due to the work of Bernays and the advertising industry coming out the 1920's, and the shift from a "needs to a desires culture" driven by the signs and symbols of the unconscious.

In one of his later works, simply titled *Consumer Culture*, Baudrillard hopes for a "practice of radical change" that would involve "multiple forms of refusal" to the dominant practices of mass consumer culture (1998: 183). Radix's work should be seen in this light, since it performs a counter-discourse to the sign-values of IKEA's environments and deploys their own unique brand of subconscious content in order to contrast the all-too-perfect worlds that the store displays for us. By revealing the auditory unconscious of IKEA (or perhaps more specifically Radix's version of it), and by causing random eruptions from the subconscious in the form of various Happenings, *The Swedish Play* invites us to read the environment "against the grain". By using the primary tool of the modern advertising industry—the subconscious—against itself, Radix enacts Baudrillard's "refusal," disrupting conventional sign-value connections and replacing them with their own.

The consumption of sign-value to express an inner sense of self to others puts a more ominous spin on IKEA's room displays. It is not that these bedrooms, living rooms and offices are necessarily ready-mades in the sense that Duchamp would see them, or even in the sense of theatre sets as Radix's Kahre would see them, but rather that IKEA's rooms are ready-mades in terms of *subjectivity*. Our inner sense of ourselves—or perhaps who we want to be—is clearly on display here. The spotlessly clean and well organized desk, the comfortable chair invitingly pulled out, the bedding for a dog at our



Fig. 4.5 – An actor compares multiple identical commodities

feet—these are all awaiting a singular presence which would complete the picture: us. It is a form of (what I call) *spatial interpellation* that promises to provide us with a ready-made subjectivity, and a more organized, more stylish, more simplified version of ourselves and our lives. Spatial interpellation, like Althusser's ideological hail, it is a process of subjectivization which constructs or assimilates the subject at the moment of ideological recognition.

If, as suggested previously, these spaces “demand that we perform,” one might wonder what roles are allowed or implicated by this demand. Spatial interpellation

invites the viewer into the space, but the process of ideological recognition means that the role is already pre-determined. The performativity of space in this case is enacted on the embodied subject, requiring a certain kind of performance and imposing a certain type of subjectivity on the viewer-participant. In *[murmur]*'s work, we saw how the voice was used to situate the listener within the frame of auditory mise-en-scène. In the case of Radix's work, IKEA's sets are shown to be designed in such a way so as to invite our spatial exploration of them, and in doing so identify with the ideologies and subjectivities they represent.

Walking though the shelving and the bins of commodities, performers caress, hug, or hesitantly touch objects of desire, feverishly hunting for more of them behind cabinet doors and in dresser drawers. They measure things endlessly, seemingly in an attempt to find that one perfect object. Their frenetic pace and over-the-top joy seems obsessive and comical, and this is exactly the point. Cushions and pillows do not send normal people into the throes of ecstasy, and yet this response is exactly what advertising promises us day after day. Likewise, the obsessive hunting for objects seems quite mad, and yet at a slower pace, this is exactly what we do when we normally come to an IKEA: we want to find the cushion that perfectly matches the couch or the decorative object that perfectly defines our lifestyle. Radix takes the imagery of advertising and makes it real for us, so that we might see how surreal it actually is. The actors take the connection between the object and its sign-value and push it to its logical, absurd extreme. The effect is that the audience is able to see the object's actual use value again, stripped of the subconscious associations that have been affixed to it.



Fig. 4.6 – The fetishization of commodities in *The Swedish Play*

Similarly, the techniques of spatial interpellation can also be reinterpreted, so that the lack of a subject in the stage-picture can be seen a more disturbing light:

It's like trying to identify someone by their belongings; the body has disappeared, swallowed by some incomprehensible calamity, and all that remains is a hall full of objects—suitcases, wristwatches, shaving kits, shoes, furniture, waiting to be recognized... (TSP 13:40-14:00)

This passage echoes Andreas' impression of the IKEA “having *too many* things appear at the same time,” and the profound sadness or lack that entails. In this sense, the IKEA and its sets become *unheimlich*—un-homely or uncanny (Freud 1919)—a barren wasteland

where only the objects remain, and the inhabitants have long since departed, or are simply extraneous.

In our own homes, we practice a similar form of self-reflexive spatial interpellation. We populate our rooms with objects that we imagine define us: commodities, trinkets, objects which stir distant memories, objects that display who we believe ourselves to be. We see our surroundings as reflections of ourselves, and furnish them accordingly. Constructing an environment that constructs us, we create feedback loops between spaces and subjectivities and are continually involved in the free-play between subjects and objects, being and having, desire and lack. The reflexivity that we might exercise is an important distinction: if we choose to cathex on objects that hold importance to us, then we should be at least be cognizant of why we are doing so. What Radix's interventions do is help remind us of this reflexivity (or lack of it) when we are in a public realm that has already been overcoded with signs meant to interpellate us spatially and ideologically.

Our narrator begins a litany of various objects that might be found in one's room: "Silk stockings in the colors of the Orient, shoes of Spanish leather, rolls of parchment, a bundle of tobacco" and so on. (*TSP* 14:44-15:13). To the musical accompaniment of the Beach Boys' "In My Room", a female voice expresses phrases that can only be described as phenomenological:

It's like trying to say two words at the same time, they suspend one another or cancel each other's meaning. One can't describe a different thing than the one that is being described while describing it. Nor can one see the thing described as

it is being described. Because the words destroy what is being seen. Just like a photograph destroys what is being seen...the light being reflected by the object being photographed will meet with the film but never meet the eye. Like playing hide and seek as a child, when I couldn't decide which I wanted more, to remain hidden or to be found. (*TSP* 15:24-16:19)

This kind of extreme reflexivity is in contrast to the absurdist actors in the previous scene. The “room” here is both psychological space of subjective reflection and the girl’s personal space, apparently littered with the objects being listed off by our primary narrator. The objects here are much more individual and idiosyncratic relative to the one’s in IKEA, ranging from an eyebrow brush to jasmine to a bird’s nest. The message seems to be that our own reflexivity and subjectivity tend to come not from mass-produced items, but those which hold personal importance. Likewise, our memories, thoughts and spaces are intertwined: these philosophical reflections are unlikely to occur in a public space of consumption, but are the result of being “in my room” in a space of private contemplation. The implication is that commodities with sign-value, with desires bred of advertising, are of relatively little value compared with objects and spaces that are individual and spur reflexive thought.

### **Spaces of Consumption**

The next four “event-scenes” interrogate the costs of living in a consumer society dominated by advertising and false promises. In the first, as we stroll though the dining

room tables, we hear a snippet from *Death of Salesman*. It is the moment of confrontation between Biff and Willy:

Biff: Pop! I'm a dime a dozen and so are you!

Willy: I am not a dime a dozen! I am Willy Loman and you are Biff Loman!

Biff: I am not a leader of men, Willy, and neither are you. You were never anything but a hard-working drummer who landed in the ash can like the rest of them! [...] I'm not bringing home any prizes any more, and you're going to stop waiting for me to bring them home! (TSP 19:41-20:09)

The effect on us as an audience is that of a space haunted by family dinners and family arguments. The ideological message of the disposability of people under capitalism and the dangers of consumer society is also the first citation of a widely known dramatic text. Since Radix's work often questions the nature of theatre as a commodity (Templeton 45), it is doubtful that the choice of including Miller's play is merely accidental. Juxtaposed with the previous two scenes, one in which commodities are stripped of their imaginary sign-value and one where some commodities are shown to have personal importance, Radix asks which one theatre is. Is it merely another consumer product meant to be purchased, experienced and forgotten about—including the one the audience is experiencing—or is it something that can generate thought and reflexivity? Likewise, are the actors who perform these plays like the absurd characters chasing imaginary desires, or the reflexive girl in her room pondering the nature of perception, or like Willy Loman, disposable functionaries who will end up in the trash bin once the show is over?

Before we have much time to ponder these questions, Miller's play is quickly disrupted by a commercial break for Crispy Mini's chips:

What is it with chicks and chips? We eat them when we're happy, we eat them when we're miserable, we'll eat them when someone else is happy or miserable.

What would happen if chips were low in fat? I'm thinking we'd eat those chips just to celebrate chips. [...] I don't know about you, but it's what I'm serving at my next break up. (TSP 19:31-21:00)

The utter vacuity of the commercial underscores much of the absurdity of consumption-based capitalism and advertising, contrasting sharply with the human costs and questions in *Death of a Salesman*. Radix disrupts narrative and any sense of narrative development by using these types of abrupt audio edits. In doing so, they "create unease and to stop the audience from assuming its traditional role as passive spectator" (Templeton 46). The audience is alienated from moments of identification in order to examine the ideological implications of what is being said, and is forced to look at the larger processes at work in consumer culture.

The commodity being sold in the commercial is irrelevant—what is being sold is not desire, but lack; in Lacanian terms, "*desire is not a relation to an object, but a relation to a lack*" (Evans 38). In Miller's *Death of Salesman*, the American Dream fuels desires that can never be fulfilled, a lack which ultimately destroys men like Happy Loman. Though we may purchase things to augment our identities, there will always be a lack which cannot be filled, and this is the very basis of advertising. We are told we will see the "Theatre of Desire" (TSP 21:23), yet the existence of a lack at the heart of

things is underscored by the performers opening up all of the cupboards in the kitchen area immediately after this commercial—cupboards which, of course, remain empty.

In scenes such as this one, the psychology or subjectivity of the audience member is projected onto the external environment. A psychological lack becomes a spatial one (in the cupboards) just as the phenomenological or philosophical plenitude of the “In My Room” scene was mirrored by a plenitude of objects both seen and spoken. Radix maps mental processes onto the spatial “body” of IKEA; the maps handed out at the outset of the show are something akin to a phrenology of the mind under late capitalism.

To underscore the point that there is a lack at the centre of subjectivity that we attempt to fill, we hear the voice of Charlton Heston narrating a documentary on Existentialism:

There’s an inevitable gap between story and reality because there is no objective reality to stories as all. We give ourselves roles and identities within these stories: we’re writers or waiters or teachers or pimps, for example. But in the end, we are responsible for the roles we play and the identities we create. (*TSP* 23:04-23:24)

Not only does the speech reinforce the idea that “existence precedes essence”—that we create ourselves through choices we must be responsible for—but it also blurs the boundary between reality and fiction by observing that “[w]e give ourselves roles and identities within these stories.” Like the use of Invisible Theatre, which blurs the boundaries between actor, spectator and shopper, the deployment of Existential philosophy on the part of Radix in this section acts to undermine the divisions between the real and the performed. Conflating identity and story, the audience is asked to

question their own identities: instead of having art imitate life, Radix questions how life imitates art through the continuous adoption of various storylines and roles. It is a theatrical conceit *par excellence*, and by drawing attention to the theatricality of the everyday, there is an expansion of our perceptual—and theatrical—frame. Audience members attempt to find proof of these Existential statements in the environment, as people are examined to determine what roles they are playing: that of actor, performer or shopper, as well as discovering the semiotic clues that reveal these roles.

After listening to Charlton Heston yell “[y]ou have to tell them, Soylent Green is people,” we are told by our narrator that “theatre is an expression of our need to communicate and remain connected to a community of others” (*TSP* 23:24-23:43). At this point, a timer on one of the display stoves rings and everyone present is served “freshly baked” cookies by our ushers. The juxtaposition of “Soylent Green” and cookies is humorous, but connected to the scenes which came before, these signs form a signifying chain comprised of human labour (*Death of a Salesman*); consumption, lack and subjectivity (*Crispy Mini's, Existentialism*); and cannibalism (*Soylent Green*). Here in the kitchen, we consume the labour of other people: literally in the case of the cookies we are given, but more figuratively through shopping and theatre going. Consumption is linked to a kind of cannibalism of the other, of people who, like Willy Lowman have been confined to the dustbin.

Taken together, these scenes comprise a critique of the commodity and commodity fetishism, a process by which value is afforded to the object and inscription

of labour on the commodity is effaced (a particularly relevant critique given the sleek Modernist lines of IKEA's wares.) As Laura Mulvey remarks:

The invisibility of the worker's labour is just as essential for the commodity's desirability as the visibility of the artisan's labour for the craft object. Any indexical trace of the producer or the production process is wiped out ... Any ghostly presence of labour that might haunt the commodity is cancelled by the absolute pristine newness and the never-touched-by-hand packaging that envelops it. (Mulvey 4-5)

One should add to that the erasure of labour is covered over with Baudrillard's "sign value," overdetermined associations and desires that obscure the commodity's use or exchange value (Baudrillard 1981: 172-99). This erasure occurs not only with physical objects, but with cultural products as well; as our narrator reminds us, "theatre is labour" (*TSP* 39:27-39:28). Here, at the main site of domestic production within the home, the consumption of theatre and the consumption of Modernist wares are seen as equivalent acts that efface the processes of labour in order to present us with a finished product.

"Space is never innocent," remark Alexander Styhre and Tobias Engberg in their discussion of spaces of consumption, "it is always an integral part of the practices of consumption. Since consumption is inherently political, aesthetic, ethic and economic, spaces of consumption are always produced as a field of forces, exchanges and interactions" (Styhre & Engberg 120). In this way, spaces of consumption can be notoriously double sided: on one hand, these spaces are tied to processes of subjectivity, lack and desire (as we have seen in the "In My Room" scene); on the other hand, they are

“the stages on which the machinery of social reproduction is played out,” including relationships between labour, capital, producers and consumers (Styhre & Engberg 122), a process we observe in the kitchen scenes. By staging interventions in a space of consumption, Radix is attempting to interrupt this process of social reproduction, or at least encourage people to question it, through theatrical means.

Theatre is another form of consumption, but its use of space differs from a normal space of consumption. Our narrator instructs us that

In theatre space is a metaphor: internal space, mythical space, dramatic space. Each suggests certain parameters and conditions. Each surrounds us with information and clues about the performers and about their position in society, about their level of education and achievement. Space in theatre is used to give subtle hints to the audience about a character’s past, about things they may not wish to reveal. But which inform their actions and bring dramatic import to their decisions. (*TSP* 24:02-24:48)

By overlaying IKEA’s space of consumption with theatrical space, there is a temporary interruption in the process of social reproduction; instead of replicating social relations, we are meant to read the environment as we would in theatre—that is, as a text where the psychology of characters is embedded in their environment as a matter of course. What we are asked to do is perform a kind of “psychoanalysis” of the space we are in, to determine what kind of character would live in these various sets. It is a resistant practice to IKEA’s process of spatial interpellation: where interpellation depends on the territorialization of the subject in order to include him or her in the frame, the process of

spatial psychoanalysis reverses this process, placing us outside of the frame of a space that is meant to be semiotically decoded. Radix's voice-overs refer to "performers" and "characters," so that the subject identified with the space is an imaginary third person and not audience members. This process allows a critical distance to be maintained, since immersing the audience fully into a representation would disrupt the capacity for objective analysis. This process of semiotic decoding puts the process of meaning-making back into the hands of subjects, rather than the hands of advertisers.

### **The Consumption of Space**

In addition to IKEA being a space of consumption, we should also consider how it is set up to promote the consumption of space; that is, how the store itself is meant to be a "designed experience" like Las Vegas or Disneyland. As I have previously noted, McLuhan's concept of the "programmed Happening" has come to fruition in the field of "experience design," where the product is neither a commodity, good or service, but the experience itself. At IKEA, the experience is obviously meant to overlap with the purchase of home furnishings, but this "total offering" of goods, services and experiences is highly characteristic of postmodern corporations (Gottdiener 155).

The consumption of space in IKEA is composed of several elements: the ball pit at the front door, getting a new catalogue, following the map, admiring the sets, eating Swedish meatballs, trying out furniture, writing down items with small pencils and finally loading flat-packed items onto a cart in the warehouse. If this were a typical warehouse

store we would just need to flip through the catalogue, write down our purchases and pick them up at the loading dock. If this were a typical furniture store, we would merely browse through furnishings arranged by room, select some, and have them delivered. But IKEA is neither: the sets and spaces are part of a designed experience that engages with our desires for order, style, economy and so on. The consumption of space is always the consumption of a particular kind of imaginary (the IKEA lifestyle) or certain fantasies (domestic perfection).



Fig. 4.7 – The Bedroom Scene

In *The Swedish Play*, the consumption of space is taken quite literally—we consume a cultural product by weaving our way through the store. Likewise, Radix mocks the consumption of fantasy which is always intertwined with spatial consumption.

As we proceed from the kitchen to a bedroom, the music on the headphones becomes industrial, dissonant and abstract. The effect is one of extreme defamiliarization. The room is done up entirely in white, and in the bed lie three women, naked and in repose. They caress their faces and arms in slow motion, barely acknowledging anything around them. One of the male performers walks on cautiously, kneels at the foot of the bed and carefully places a stuffed animal on top of the covers, as an almost religious offering. The woman in the center reaches out with both arms to embrace it. The dream-like quality of the scene is enhanced by the contrapuntal use of sound, which works against our indulging in the sexuality of the scene. We are titillated and entranced, but the overt strangeness of the music (being played at high volume) mediates our engagement with the performance. It is a moment which utilizes the ability of the walkman to mediate reality to full effect (Bull 2000: 164). Yet, it is also Radix at their most literal in terms of displaying the subtexts of the store; after all, notes reviewer Tim Carlson, “[b]uying a bed is necessarily a sex fantasy” (Carlson B5). The consumption of spaces and fantasies are made overt, and brought to the surface for our analysis. Like the actors hugging objects and racing around to find more in the cupboard scene, when the machinations of consumerism come under scrutiny, they become absurd or perverse. As in the discussion of theatrical space, the sound track acts as a form of alienation that gives us the critical distance to examine and critically analyze the psychology of the spaces with which we are presented.



Fig. 4.8 – Dream logic and fantasy in The Bedroom Scene

However, fantasies are not always benign; the result of the eroticization of people, commodities or the environment more generally through the use of advertising can blur the line between commodity fetishism (in the Marxist sense) and object fetishism (in the psychoanalytic sense.) According to William Piez, the object fetish “is always a meaningful fixation on a singular event; it is above all a ‘historical’ object, the enduring material form and force of an unrepeatable event. … This reified, territorialized, historical object is also “personalized” in the sense that beyond its status as a collective social object it evokes an intensely personal response from individuals” (Pietz 12-3). That response is at once both a psychic connection to the original event, and a disavowal of the materiality of the object—one knows it is “just” an object, but the psychic ties remain—that results in a repetition compulsion (Mulvey 14). One might wonder in our

ad-saturated culture where commodity fetishism ends and object fetishism begins, given the massive efforts to tie objects to desires and *vice versa*.



Fig. 4.9 – The Underwear Scene – a counterpoint to object fetishism

We see an example of object fetishism at work in the following scene, as a teenager searches frantically through a bedroom set and we hear the following monologue:

It's like love, the love you feel for another person, and sometimes it's about excitement when you picture yourself, when I picture myself in possession of whatever the object is of my desire or at least sharing space physiologically or physically in the same time and space as the object of my desire whether it's a product or a person or an emotion or an accomplishment. (TSP 28:36-29:05)

The search ends when the teenager finds a pair of women's underwear—clearly not his—smells them, smiles and wanders off. Though we may be repulsed by this display of overt fetishism, it does stand as a counter-point to the previous scene of fantasy. In this sense, we are told that in our culture, there is a “correct” way of connecting sex to objects (using erotic fantasies to sell beds), and an “incorrect” way of connecting sex to objects (an underwear fetish). It may even be true that the role of advertising is to produce a kind of “controlled fetish” and its attendant compulsion to repeat, based on a singular event or experience (for evidence, see the Crispy Mini’s ad above or any ad attempting to sell commemorative coins). There is often very little separating fantasy and perversion, a point Radix makes abundantly clear by juxtaposing these two scenes.

In the Sultan Room of the IKEA, the audience lies down on the beds and is told to close their eyes. The beds become a psychoanalyst’s couch and we hear the complaints of partners about their spouses, in a kind of whispered subconscious of domesticity:

He brushes his teeth, and he spits out the toothpaste with some water with little food particles and leaves them in the sink...

She used to cut her toenails in the living room...

Way too much toilet paper...

I can’t stand it when someone has uncontrollable gas; it feels like they need to mark their territory with their bad smells...

The persistent habit of quoting really bad romantic poetry...

(TSP 30:09-31:49)

The use of the bed connects it to the fantasy scene earlier, but in this case we are given a dose of domestic reality. While we may laugh some of these statements, this is probably the closest Radix comes to providing an acoustic unconscious to the site they are performing in, devoid of imagery. If in the “theatrical space” scene we are meant to psychoanalyze space to determine its character, here the psychoanalysis is done for us, acoustically, to reveal the issues that exist below the surface of domestic imagery.

### **Questioning Theatre**

Entering the Kids Room, we see two children playing. Our narrator tell us that the scene will be about

[t]he meaning of theatre. Is theatre still a meaningful art form? Can it answer the challenges of a new economy...a world that has changed far beyond the social institutions of Shakespeare’s time? Is all this a deceit...an elaborate consensual lie? Where is the authentic self in theatre? The influence of psychoanalysis, and the increasingly complex theories of the interactions between parent and child have altered how we think of character. Please consider the following example ...

(TSP 33:15-33:57)

At this point another female voice begins reading from a complex Freudian text. The combination of complex theory and two children playing is probably the best illustration of Radix’s own “meaning of theatre”: both play and social critique are required if one is to produce theatre that can “answer the challenges of a new economy” and still be “a

meaningful art form.” The final act of analysis is to question theatre itself, and the space that *The Swedish Play* has created, but ultimately we are the arbiters of its success or failure.

In one of the final scenes of the play, in the toy section of the store and to the sounds of a child crying, we hear a quote from Sartre: “If man is indefinable, it is because at first he is nothing. Only afterwards will he be something; and he himself will have made what he will be.” (*TSP* 39:02-39:17). This question is perhaps as close as one comes to a statement of how audiences are meant to “read” Radix’s work. Given the multiple embodied perspectives of the audiences and nomadic nature of the site-specific work, *The Swedish Play*, like the existential subject, will only afterwards become something, as its essence is determined by the existence, perceptions and actions of the audience. Paul Ternes of Radix remarks that “those who simply followed the program were likely to be disappointed, perhaps because there was no show to get in a traditional sense. Those audience members who were willing and able to "break the rules" of theatrical experience, to engage directly in the process, clearly got more out of the experience (Templeton 46).

In feedback from the play, many of the audience members who expected an Aristotelian drama wrote remarks such as: “There needs to be more theatre,” that “the ending was anti-climactic,” or that “a bit more linked narrative would be good,” or simply, “Catharsis?” Many remarked that “there was too much going on” or that they “loved watching the shoppers.” Some of the more sophisticated responses wanted a more overt relationship to the site, more transgression, to be able to take a less defined route

through the store, or for there to be a less abstract dramaturgy (Radix Audience Response Forms).

**Lifestyle Event™  
Evaluation Form**

RADIX  
Lifestyle Theatre

We ask that you take a moment to fill out this questionnaire, in order to help us ensure the best possible quality of entertainment. Your comments are important to us...

---

How would you describe your Lifestyle philosophy?	How would you improve Retail Theatre?
<input checked="" type="checkbox"/> More is more. <input type="checkbox"/> Less is more. <input type="checkbox"/> My partner makes those decisions.	<input type="checkbox"/> More Retail. <input type="checkbox"/> More Theatre. <input type="checkbox"/> See below.
On your next visit to a lifestyle event roughly how much do you plan to spend?	
<input type="checkbox"/> \$1 - \$20 <input type="checkbox"/> \$20 - \$100 <input type="checkbox"/> More. <input type="checkbox"/> Much More.	
Would you prefer to see more of the following	
<input type="checkbox"/> Giggles. <input checked="" type="checkbox"/> Theory.	
Please give us your impressions of the pleasures and challenges of attending a Radix Retail Theatre Lifestyle Event™ .	
<div style="border: 1px solid black; min-height: 100%; padding: 5px;"> <p> </p> </div>	

Fig. 4.10 – Radix feedback form

Negative reviews of the play commented on the “dully minimal” action and “theoretical overload” (Thomas 64), critiqued the “improvisational” nature of some of the actions, or the lack of an overt “indictment of the corporate paradigm” (Mulligan July 6, 2002). More positive reviews remarked that the show was “brilliantly conceptualized” and “works on its own terms” (Carlson B5). Most interestingly, one reviewer

commented that “the show could have worked better as a gallery tour” (Mulligan July 6, 2002) and another that “the shopping equation is simple: marketing creates desire for a product and then satiates it with a purchase. As the narrator explains, theatre creates a desire for catharsis and attempts to deliver it. Not in the world of *The Swedish Play*, which left me wandering and wondering” (Carlson B5). This criticism is intriguing, since it seems that *had* the audience’s horizon of expectations been that of a museum or performance art audience, many of the responses on the lack of a climax, theatrical catharsis and narrative continuity would not apply. This insight seems to be borne out by the Audience Response Forms, the vast majority of which describe the show as a “unique” and “enjoyable” experience, despite the lack of theatrical conventions. In general, when judged as an *experience*, the play elicits a positive response, but judged using the normal criteria of Aristotelian drama it elicits a negative one.

In many ways, these responses reflect the same kind of interest or wariness that many had with Kaprow’s Happennings in the 1960’s. As we saw in Louis Phillips’ “The Mets and the New Theatre” (1968), there was an initial uneasiness with the fact that “the distinction between raw experience and the interpretation of experience breaks down” (487), and the separation between life and art were not clear cut. Understood on their own terms, however, as one of Kirby’s non-matrixed performances (25-6), audiences were much more willing to accept Happenings as a distinct art form, since they had a schema for dealing with such works. In many ways the responses to Radix’s work follows this same pattern: audiences with an existing schema for dealing with such a

work had positive responses, which those that did not viewed it negatively, since it disrupted their expectations of what a standard theatrical performance should be.

Andrew Templeton writes that Radix attempts to illustrate the “tension between the illusion of promise [in consumer culture] and the largely unrecognized reality of disappointment when these objects fail to deliver” (Templeton 45). *The Swedish Play* works in this paradigm by frustrating our craving for an “easy” Aristotelian drama, where we would “satiate our desire with the purchase” of a climax and catharsis. Instead of narrative closure, we actually *are* left wandering and wondering, the frame of representation remains with us and the curtains to the stage left wide open.

Radix Theatre does not give us an easily consumed piece of theatre with *The Swedish Play*. To do so would defeat the purpose of a work designed to complicate the consumer nature of traditional theatre and the theatrical nature of modern consumerism. Instead we are given a work that draws upon several techniques taken from Invisible Theatre, Happenings and radio drama. FM radios allow Radix to create various theatrical and perceptual effects: Brechtian alienation, acoustic anchoring of text-to-objects, synesthesiaic moments of sense blending, and an intervention in Althusserian spatial interpellation. Perhaps most importantly, *The Swedish Play* constructs an alternative acoustic unconscious of a consumer space, effectively parodying and rewriting the connections between desires, objects and fantasies. Using live actors, spect-actors and unwitting shoppers in their mise-en-scène, the play blurs the boundaries between the “real” and “not-real”. In the end we find that for Radix, and in IKEA, the two often overlap, intermingle, or are impossible to distinguish from each other.

## **Chapter Five:**

### **Interactive Fiction: Spaces of Exploration**

Previous chapters have examined the role of technology in constructing alternative conceptualizations of space, whether stage as a space of intermediality in Lepage, space as a performative engagement through storytelling in *[murmur]*, or the construction of an acoustic unconscious overlaying a space of consumption in Radix's *Swedish Play*. In each of these cases, real world locations are altered through a combination of performance and technological media. This chapter examines the type of space that is created when a real world space is turned into a type of video game known as an interactive fiction, and what kind of performance results from this type of interactive storytelling. The chapter discusses some historical examples of interactive works, focusing particularly on an early interactive fiction known as *Adventure* (1975-1976), and examining how this work functions as a space of exploration, an "epistemology engine" for understanding early computers, and a storytelling system which co-produces a script through the actions of the user. I also present an overview of existing interactive fiction authoring systems, compare their various strengths and weaknesses, suggest ways in which these systems might be improved, and present other technologies that might complement these authoring systems to produce new ways of constructing interactive stories.

The term “interactive fiction” (IF) includes a variety of media forms: text-based games (e.g. *Zork*), hypertext fiction (e.g. *Afternoon*), multimedia puzzle games (e.g.

*Myst*), cinematic action games (e.g. *Dragon's Lair*), gamebooks (e.g. *Choose Your Own Adventure*) and various other works with branching plotlines (Douglass 28). “A work of interactive fiction,” writes theorist Nick Montfort, “is a program that simulates a world, understands natural language text input from an interactor and provides a textual reply based on events in the world” (2004: 316). As a program, a work of IF is composed of text fragments and a set of procedural rules for generating a sequential, narrative experience.

Although procedural works are now commonly deployed through the use of computers, this was not always the case. The *I Ching* (circa 50 BC) and the works of Oulipo (Ouvroir de Littérature Potentielle, or Workshop for Potential Literature) are examples of material texts that use systematic rules for generating procedural narratives (Aarseth 9-25). In the case of the *I Ching*, yarrow stalks or coins are thrown to generate one of sixty-four hexagrams, each composed of six broken or unbroken lines. Each hexagram is in turn associated with a description in the *I Ching*, or *Book of Changes*. The system relies on chance to generate each hexagram and is commonly used as a divinatory tool, with each hexagram describing the current situation of the inquirer. The works of Oulipo, an experimental literature group started by Raymond Queneau and François Le Lionnais in 1960, are largely combinatorial, relying on the reader selecting from a variety of textual fragments to compose a larger work. In Queneau’s *Cent mille milliards de poèmes*, or *One Hundred Thousand Billion Poems* (1961), the reader is presented with a book of ten sonnets, each composed of fourteen lines (Aareseth 10). However, each line of the sonnet exists on its own strip of paper, which can be turned

separately. Although the strips of text are fixed in terms of content, the combinatory nature of their arrangement results in  $10^{14}$  possible choices for the reader (Wardip-Fruin 2006: 89). This process of selection and combination gives the reader an active role in the creation of the text from a number of fixed units. Like the *I Ching*, it uses a set of procedural rules to generate a given text; however, in the case of *Cent mille milliards de poèmes*, the generative nature of selections is not left to chance, but relies on the active participation of the reader. Though these procedures for generating a text are fairly simple, these texts are nevertheless precedents for the kind of stories that IF systems produce.

*Choose Your Own Adventure* books, a pre-teen series of books published by Bantam from 1979-1998, also represent a kind of material IF where the choices of the reader determine the outcome of the text. Like Jorge Luis Borges's mythical *Garden of Forking Paths* (1941), these texts allow the reader to explore the different outcomes that result from individual choices, with each selection leading to further possibilities. In Borge's fictional novel, the character Ts'ui Pen creates a novel that describes a world where each choice one makes leads to further possibilities and choices; all possible futures exist in the novel simultaneously, and only the agency of the reader can actualize a specific reality out of an infinite number potential ones. *Choose Your Own Adventure* novels imitate this branching plot structure by dividing the story into units of one or two pages each; at the end of each unit, the reader – referred to as "you" – must make a choice that determines the next step in the story:

"I'm you're here in the world of dreams come true," says the old man.

"Whatever you would like to have is yours." You think for a minute of things you would like--your favorite food, having your own horse, going on a balloon ride. "You'll have to decide quickly. It's almost time for you to wake up," says the old man.

If you ask the man for all the candy in the world, turn to page 12.

If you ask him for a horse to ride, turn to page 20.

If you ask him to take you on a balloon ride, turn to page 14.

If you ask him for something you can keep after the dream is over, turn to page 23. (Packard cited in Buckles 17)

The fixed nature of the codex book and the limited interaction afforded the reader (choose a page number, continue the story) make these books much more like a paper-based hypertext system than a true digital interactive fiction. In digital IF, choices are not presented to the reader, but rather the reader must try out certain courses of action by typing out commands at the command prompt (fig 5.1). However, these systems have in common a shared dependence on procedures and choices for their production; without these procedures the story grinds to a halt. As Mary Ann Buckles notes, in IF,

The story stops each time the reader must decide where to go next in the cave or how to overcome an obstacle or solve a puzzle. If the reader makes choices quickly, the story progresses quickly; if the reader has difficulty deciding what to do, the action slows down. How very different this is from a story in a book! For

example, when I am baffled in a detective or spy story, I read faster and faster so I can find out what happened or what will happen. In contrast, when I am stumped by a puzzle in *Adventure* the story stops altogether until I figure out what to do.

(Buckles 19)

Much of the challenge of these story systems is figuring out what one *can* do within the parameters of the software, as well as figuring out what one *must* do to be able to continue the story.

```
PAUSE INIT DONE statement executed
To resume execution, type go. Other input will terminate the job.
go
Execution resumes after PAUSE.
WELCOME TO ADVENTURE!! WOULD YOU LIKE INSTRUCTIONS?

y
SOMWHERE NEARBY IS COLOSSAL CAVE, WHERE OTHERS HAVE FOUND
FORTUNES IN TREASURE AND GOLD, THOUGH IT IS RUMORED
THAT SOME WHO ENTER ARE NEVER SEEN AGAIN. MAGIC IS SAID
TO WORK IN THE CAVE. I WILL BE YOUR EYES AND HANDS. DIRECT
ME WITH COMMANDS OF 1 OR 2 WORDS.
(ERRORS, SUGGESTIONS, COMPLAINTS TO CROWTHER)
(IF STUCK TYPE HELP FOR SOME HINTS)

YOU ARE STANDING AT THE END OF A ROAD BEFORE A SMALL BRICK
BUILDING . AROUND YOU IS A FOREST. A SMALL
STREAM FLOWS OUT OF THE BUILDING AND DOWN A GULLY.
```

Fig. 5.1 – Wil Crowther's *Adventure* (1975-76)

## Features of IF

Digital interactive fiction stores its text in the computer's memory, and is activated by the reader's input, with output on a video display rather than paper. However, the "method of storage and transmission of verbal information does not fundamentally transform its words into something else"; it is still a work of narrative fiction (Buckles 3). As Neisz and Holland remark in their groundbreaking analysis in *Critical Inquiry* (1984),

[b]oth interactive and traditional fiction rely upon the use of written texts, or upon the elements of narration, plot, and dialogue. Whenever the main figure, the combined reader and hero, enters a new scene, a complete narrative description is given. The reader then responds to the text on the video screen by typing into the computer ... It is this reliance upon verbal utterances, upon language, upon texts in the broadest sense, which makes interactive fiction nevertheless a subspecies of literature, regardless of its mechanics of video screens, keyboards, and computer chips ... (Niesz & Holland 125)

Interactive fiction is certainly less of an enigma than it was in 1984, but it has transformed into somewhat of a cult genre since its commercial popularity in the 1970's and 1980's. In an era where video games are primarily composed of first-person shooters like *Bioshock* (2007) and MMORPG's (Massively Multiplayer Online Role-Playing Games) like *World of Warcraft* (2004), IF might seem a historical anomaly. However, the genre itself has undergone a resurgence lately, due to devoted communities on the

Internet, new scholarly interest in IF and the release of open source tools that allow IF readers to become IF writers (Kaplan & Maher 3).

The definitive feature of interactive systems is their use of natural language for interaction. While early systems were text-only affairs, newer systems incorporate other multi-modal elements. However, as Nick Montfort observes,

[T]ext can also be considered semiotically to be any set of signifiers; thus IF works (and perhaps other works as well) that contain graphics, sound, or video can be accommodated in this way. Using text more specifically, to mean ‘strings of words,’ interactive fiction indicates a category of text-based works, works that can contain other media elements *but where text and textual exchange are central.*

(Montfort 2003: 4; emphasis added)

IF comes in wide range of genres: “mysteries, thrillers, romances, and science fiction stories. There are games about espionage, games about fighting dragons, games about being a cat burglar or searching an abandoned house for loot. Some pieces are fairly serious and literary, while others are enjoyable romps” (Granade & Short 1). IF as a category is typically considered to occupy a position somewhere between a game and story (Buckles 46), although they have typically been marketed as video games. The term “interactive fiction” was itself introduced by Adventure International, a Florida computer company, as a means of differentiating its software products from others in the late 1970’s (Buckles 8). Some of the best known text-based interactive fiction works include *Adventure* (1976), *Zork* (1977-78), *A Mind Forever Voyaging* (1985), *Knight Ore* (1987), and *Curses* (1993) (Montfort 2003b).

Exploring these digital IF worlds consists of “a recurrent cycle of text generation, alternating in turn between the software program and the software user, or ‘interactor,’ both referencing the same simulated world. At the computer screen prompt, also known as the “command line” (>’), the interactor types a phrase, generally in the command tense (“> READ THE DISSERTATION”) and the program attempts to parse the command with regards to the simulated world” (Douglass 10). IF systems allow users to enter natural language commands—often in the form of verb-noun pairs—to perform actions and influence the environment of the narrative storyworld. As a “textual machine,” the storyworld in IF is usually created entirely through textual description; the form relies heavily on the imagination of the interactor to construct its diegesis. Players enter commands and tell the system where they want to go and what they want to do. The narrator of the interactive fiction describes the environment, any objects in the vicinity and any actions taken by the player. For example, a typical exchange in an interactive fiction would be:

N: You are standing at the end of a road before a small brick building. Around you is a forest. A small stream flows out of the building and down a gully.

P: Enter building

N: You are inside a building, a well house for a large spring.

There are some keys on the ground here.

There is a shiny brass lamp nearby.

There is food here.

There is a bottle of water here.

P: Take lamp

N: OK

P: Take keys

N: OK

P: Take water

N: OK

P: Downstream

N: The stream flows out through a pair of 1 foot diameter sewer pipes. It would be advisable to use the exit.

(*Adventure* 1975-6)

Players can collect objects, explore spaces and try to solve puzzles. Occasionally there are monsters to fight or other non-player character (NPC's) to interact with.

### **IF and Exploration**

Historically, IF has been goal-oriented, with a strong emphasis on exploration. This is perhaps understandable given that *Adventure* (1975-6), the first work of digital interactive fiction, was based on Will Crowther's spelunking adventures in the Mammoth Caves of Kentucky. Also known as *Colossal Cave* or *ADVENT*, the original game was

expanded upon by Don Woods who discovered the Crowther's project on a computer at Stanford University (Cordella 2006). Many early IF works were influenced by J.R.R. Tolkien novels and the role-playing game *Dungeons and Dragons* (1974), and thus typically involve explorations of dark, subterranean spaces where the user must solve a series of quests or riddles to complete the game (Flowers 9-10). However, as Jeremy Douglass suggests, *Adventure* is also an exploration of the programming of large simulations:

Adventure is a work about exploration which was simultaneously itself an exploration of programming simulations. On the one hand, it was a cavern crawl consisting of many hundreds of rooms and objects explored over an indefinite period, and on the other, an open code base ported across many languages and in many styles, constantly aggregating ideas and innovations. (Douglass 279)

One should add here that the maze-like "cavern" of *Adventure* was an apt metaphor for the large, networked computer systems like the one at Stanford: complete with rooms to explore (servers), magic words (passwords), objects to collect (files), strange creatures (daemons and other users) and puzzles to solve (UNIX commands and scripting). At the time, Crowther was helping to develop the ARPANET (the predecessor to the Internet) at Bolt, Beranek, and Newman in Cambridge, Massachusetts (Montfort 2006). Anyone using the early ARPAnet, NSFnet and pre-World-Wide-Web Internet systems could easily identify with using a natural language interfaces to explore unknown spaces via the computer screen. A discussion of the "space" that interactive fiction explores will be discussed later on in this chapter.

Another major influence on the form and content of IF is Joseph Weizenbaum's *ELIZA* (1966). Written in 1966, *ELIZA* was designed to simulate a conversation between a patient (the user) and a Rogerian psychotherapist. It was designed to test the capability of computers to hold conversations without sophisticated language-parsing techniques (Ryan 1997: 693). Using crude pattern matching, the system almost always returned a question to the user in order to guide them through analysis. Despite not modeling human cognition or understanding the inquiries posed to it, the system fascinated users in its ability to "fake" understanding and cognition. This simulacrum of understanding is referred to by Marie-Laurie Ryan as the "*ELIZA effect*" whereby the representation of cognition, combined with the desire for anthropomorphism on the part of the user and the situational context of the dialogue, are "good enough" to maintain the suspension of disbelief.

According to Buckles, many users of *Adventure* consider the narrator to be "a cross between 'HAL,' the omniscient computer in *2001* and *ELIZA*, the computer program that simulates a psychotherapist" (145). The narrator serves as means of connecting the user to the *Adventure* world and does so with a rudimentary kind of understanding of the user's prompts. Thus, "[s]ome readers think about the narrator in *Adventure* in some of the same ways they do about people. They talk to it, they tell it to shut up, they thank it when they get a treasure, etc.," clearly anthropomorphizing the machinic intelligence. Similarly, users may probe the system to see what it *cannot* do: what it does not understand, where communication breaks down, or what the gaps in the representation are.

The “*ELIZA effect*” and Crowther’s work on ARPAnet are significant to the understanding of what *Adventure*—and interactive fiction more generally—represent given the time period of the 1970’s. At the national level, the ARPAnet grew from four nodes in 1969 to two-hundred and thirteen by 1981, forming a national defense and research network that would form the hardware and software backbone of the Internet. At the home level, modem-based dial-up BBS (Bulletin Board Systems) came online in 1978, giving home users access to “a world outside the box” where they could interact with other users, share files and play games against other users on the same server. The Apple II entered homes in 1977, ushering in the era of consumer-based, personal computing; computers were no longer tools for tinkerers and scientists, but marketed as home entertainment and productivity devices.

In this context, the popularity of *Adventure* makes perfect sense. The public had been prepared for this mode of “conversational” gameplay through role-playing games like *Dungeons and Dragons*. More importantly, people wanted to know what computers could and could not do, what the limit of their intelligence was, and what types of spaces they opened up for the user, either on the new networks being built or through complex systems of representation. Montfort suggests that the literary precedent for interactive fiction is the riddle: a “combination of an explicit challenge and a verbal literary work” (2003: 3). He sees these systems as a “metaphorical system that the listener or reader must inhabit and figure out in order to fully experience,” as well as to solve, the riddle (4). However, I would suggest that this allusion to the literary riddle neither goes far enough, nor takes into account the historiography and materiality of computing that

surrounds *Adventure* and its digital descendants. In this period, the machine itself is a kind of riddle, and *Adventure*, as well as games like it, is emblematic of an early “age of exploration” brought on by networking and digital home computing.

### **IF as Epistemology Engine**

In his study *Bodies in Technology* (2002), Don Ihde uses the suggestive term “epistemology engines” to describe technologies that signify, organize and systematize our ways of knowing (71). Ihde cites the *camera obscura* as the epistemological engine of early modernity, and charts its conceptual influence on the thought of da Vinci, Descartes, Locke and Husserl. As a means of linking bodies, technologies and their interactions—thus producing a specific kind of subjectivity—the *camera obscura* is both a thing and a way of thinking about our interactions with the world; in modernity this means a distinctly Cartesian subject, locked in a dark room of mind (*res cogitans*) with only the pinhole of the *res extensa* as a means of accessing the outside world (72). Ihde later goes on to examine video games, internet e-mail and virtual reality as particular forms of epistemology engines in the postmodern era (80-85). However, Ihde’s system of classification is somewhat hardware-biased, and I would suggest here that particular forms of *software* can act as epistemology engines as well—framing our ways of knowing and defining the relationships between subjects and objects.

Interactive Fiction is just such an epistemological engine, as are Interactive Drama and VR. IF is an *exploration machine* which encourages the user to test the limits

of the space of the representation, the narrative, intelligence of the machine and capabilities of the software. As Kurt Squire and Henry Jenkins observe, “the earliest digital games consisted of little more than contested spaces”; in the case of *Dungeons and Dragons*-type games like *Adventure*, “player mastery over a level, by besting an enemy, completing a puzzle, or simply pushing through the obstacle course, is rewarded by allowing access to the next spectacular world” (2002: 65). What Squire and Jenkins neglect, however, is that the exploration is not only that of the representation space, but also the limits of the narrative, hardware, software and AI. As an exploration machine, the way of knowing represented by such a piece of software is that of exploratory navigation, iterative interaction, and planning; the system is embedded with a certain kind of epistemological outlook where knowledge is obtained through exploration, collection, logic and spatial mastery.

The interactive nature of a system like *Adventure* is central to its role as an engine for the co-production of knowledge. However, we should be careful to define what we mean by “interactive”, since the term itself has often been contested. In his *The Art of Interactive Design* (2003), Chris Crawford observes that the term itself has become a “buzzword” used to sell everything from computers to shampoo (2). Likewise, game theorist Espen Aarseth attacks the term as being “commercial rhetoric... accepted uncritically by academics with little concern for precise definitions or implicit ideologies” (1997: 48). For Aarseth, digital interactivity is a tautology, since almost all computers with an input-output system could be branded interactive. Crawford, however, sees interaction as a kind of “conversation” with a machine, that is inherently dialogical.

His model is in fact fairly conservative, building on older dialogue-based models in computer science. He notes that “choice” is an important component of interaction, but choice is not sufficient, since not all objects that offer choices are necessarily interactive in the strictest sense. A street sign or a crossroads may offer choice, but we would hardly think of these as being interactive (Ryan 2005: 2).

Mark Meadows comes at the problem of interactivity from a visual arts perspective in *Pause and Effect: the Art of Interactive Narrative* (2002), where he asserts that interactive narrative is “characterized by a time-based representation of character and action in which a reader can affect, choose, or change the plot” (62). This is a much more specific definition, which acknowledges that “a genuinely interactive text involves not only choice, but also a two-sided effort that creates a feedback loop. The two sides can be two human minds, as in conversation or oral storytelling, they can be a human agent and the world, because the world ‘kicks back’ when the agent performs an action” (Ryan 2005: 2). The world is reconfigured in some way, based on the actions of the human agent; the text is not a static artifact, but changes and develops as interaction progresses. Meadows’s and Ryan’s conceptions can help to move us away from the dialogue-based models in traditional computer science and control-feedback models in cybernetics, both of which tend to assume a static user and a static digital agent or world.

Jin Hyun Kim and Uwe Seifert (2007) propose a much newer model of interactivity based on agency and embodiment, focusing on the performative co-production of art and knowledge that occurs when humans and machines “play off” one another (231). In their model, both the user and the system have a kind of agency, which

is performatively emergent through the trading off of roles. Their iterative model of human-computer interaction suggests that rudimentary AI systems like *ELIZA* and *Adventure* represent an early departure from dialogue and control-feedback models, since they attempt to “perform” agency and specific characters. Though both are dialogue-based, their internal systems change and react to specific input, creating a feedback-loop with the user.

Through its design as an interactive system, *Adventure* helped change how users interacted with computers significantly. As a space of exploration, Crowther’s model of the Mammoth Caves implied a virtual body for the user that would move through the digital spaces of the computer (an early predecessor to William Gibson’s “cyberspace” in *Neuromancer*). Instead of the reactive model of interaction proposed by cybernetics, the exploratory nature of IF demands that users choose what to do next—they move the narrative forward through specific acts of agency that determine where they end up in the representational space and the story. Pleasure and engagement in systems such as these are largely derived from this feeling of agency, defined as “the satisfying power to take meaningful action and see the results of our decisions and choices” (Murray 15). Further, the “dialog” model of computer science is enacted and transformed through interaction with an AI that “understands” natural language; the notion of “dialog” is made literal rather than being a convenient metaphor, demonstrating what interaction with a computer *could* be like.

This approach to interaction in IF frames the interactor—a term borrowed from Brenda Laurel—as a co-producer of meaning with the epistemological engine. The

interactor is both a reader and a writer, actively engaged in the reception *and* production of the text, determining the final outcome of the plot. In Ryan's definitive description, “[a]s beneficiary of the production, the interactor is audience; as active participant in the plot and member in make-believe of the fictional world, he is character; as physical body whose actions and speech bring the character to life, he is actor; and as initiator and creative source of the character's speech and actions, he is co-author of the plot” (1997: 679).

While it could be argued that the act of reading is always an act of co-producing the text, “contemporary storytelling mediums such as the written novel, theater, cinema, and television lack two key capabilities that the computer can offer: *autonomy*, or the ability to act and change on its own, and *interactivity*, or the ability to listen, think, and react intelligently to the audience (or user). This ability to collaborate with the user to create stories makes the computer the most powerful medium for interactive fiction” (Stern 16). IF foregrounds the co-production of specific narratives through a symbiotic relationship between the interactor and generative software.

The exploration of space and performance of interactive dialogue results in a script, co-produced by the program and player. Here, we have *the reverse of the drama-theatre distinction*: a written drama is an outline for the performed theatrical event, whereas in IF a performance within the space of representation results in a dramatic, co-authored script. As an epistemological engine, IF highlights the notion of knowledge (or narratives) as being the result of performative or iterative acts (cf. Lyotard 1984). As an epistemological engine emerging in the late 1970's, IF trained people to interact with—

and what to expect from—computers; by framing epistemological inquiry as an iterative co-production with computers, IF helped to prepare people for a postmodern, knowledge economy. Interaction, along with an emphasis on problem solving, exploration and agency also helped prepare users for “pull” (search and select) technologies like the Internet rather than the limited agency afforded “push” forms of mass media such as television, radio and newspapers. As a form of epistemological engine, IF presented a particular framework of interaction to its audience that helped to prepare users for an emerging knowledge economy based on many of the same rules as a cave-crawl like *Adventure*.

### **Space, Narrative and Causal Structure**

One of the most interesting aspects of *Adventure*'s role as an exploration machine is its inherent emphasis on space as a determining part of the narrative. “To even move through the cave is a challenge,” remarks Buckles, “since Colossal Cave is like a real cave--one must always remember how to retrace one's path or face figurative death. Orientation is so difficult that many players make maps for themselves” (36). In traditional drama, one would expect plot and character to be the driving forces of the narrative, with the effect of space being negligible.

In Aristotle's *Poetics*, the six parts of drama in order of importance are Plot, Character, Thought, Diction, Song and Spectacle. Sam Smiley (1971) explores this six-part model as a system of playwriting and emphasizes its correspondence with Aristotle's

notion of natural causality in *Metaphysics*. For my purposes here, I am mostly interested in the formal and material causes in Aristotle's system. The formal cause is the form or idea that causes something to come into being; in the case of a house, the concept in the architect's mind or the idea of "house-ness" determines its final state. The material cause is the substance used to bring something into being; in the case of a house it is the wood and concrete used to construct it (Tomaszewski & Binsted 1).

The order of Plot to Spectacle represents a top-down sense of causality that prioritizes form and structure; this *formal* structure is used by the playwright to create a complete and satisfying drama where all of the six elements are in proportion and there is a sense of inevitability regarding the tragic plot (Smiley 11-12). In contrast, the actors and production team tend to work from the bottom up, following the flow of *material* causality which begins with the physicality of Spectacle and works its way up to the abstractions of Plot (Tomaszewski & Binsted 2).

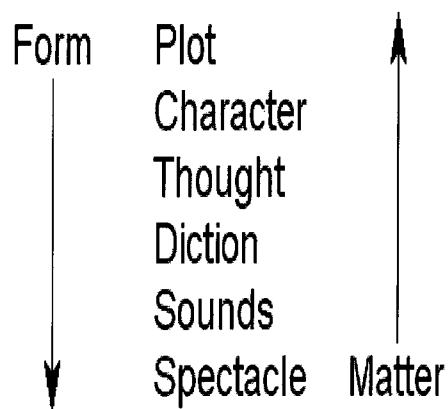


Fig. 5.2 – Formal and material causality (Smiley 1971: 11)

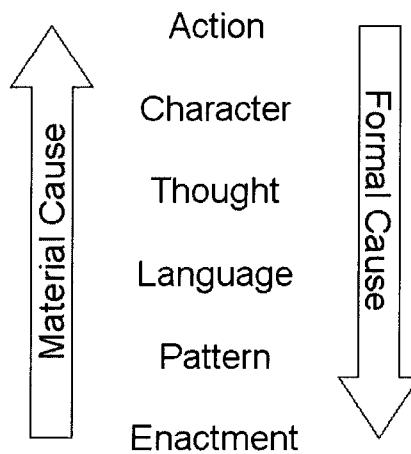


Fig 5.3 – Laurel’s reinterpretation of Smiley’s framework (1991: 51)

In the case of Interactive Fiction and Interactive Drama, this Aristotelian model has been re-worked by Brenda Laurel (1991), Mike Mateas (2004) and Zach Tomaszewski & Kim Binsted (2006) as a means of understanding how convincing interactive worlds and plots might be constructed. For Mateas, the importance of this model is for constructing “a balance between the material and formal constraints,” so that “the player will experience agency” (25). Given this emphasis on interactivity, it is understandable that IF systems place a seemingly inordinate emphasis on space and spatial exploration, since these elements represent the primary element of the spectacle within the digital presentation. Particularly in early IF systems like *Adventure*, agency means spatial agency--the ability to explore a space generated by the computer. In later Interactive Drama systems, different forms of agency are prioritized, particularly social agency, but it is interesting to note that the sense of spatial agency and exploration so central to early IF has carried through to the present day in the form of First-Person

Shooters (FPS's) and MMORPG's (Massively Multi-player Online Role-Playing Games).

### **Internalization: Tools, Spaces and Code**

The longevity of spatial exploration and interactive agency as dominant gaming epistemologies from IF onwards can be understood as a process of internalization, as described by Lev Vygotsky (1997). Vygotsky saw higher mental processes as being the result of abstraction and agency, which allow human beings to act instrumentally on the environment. These higher processes are always social and always mediated, since they result from the mastery and mental internalization of the use of cultural artifacts—whether material tools like a hammer or cultural tools like language and symbols (Kozulin 112). This process of internalization involves reciprocal change: the individual transforms that which is internalized, at the same time as the internalized cultural object transforms and changes the individual (Kozulin 115). This is certainly the case with language, which expands the number of concepts we can think about, while also conforming our mode of thinking to certain cultural, grammatical and temporal structures. For Vygotsky, the meaningful social context is made up of mediating cultural artifacts which, when internalized, affect psychological processes.

More recently, John Seely Brown and Allan Collins have used the term “distributed intelligence” to acknowledge the fact that individual intelligence is not merely the result of the individual and her agency, but rather the result of her interactions

with reference books, notes, computer programs and databases, as well as other agents (Bruner 3). Thus contemporary Vygotskians may speak of “activity systems” consisting of users, objects, tools, social roles, rules, and so on that interact to form a whole system of individual learning and cognition (Barab et al. 69).

In relation to the spatial exploration theme of interactive fiction, I would suggest that the exploration of spaces, the acquiring of objects, solving of puzzles and use of the natural-language parser represents a concrete model of a Vygotskian “activity system” where users must internalize the system itself—its puzzles, logic, spaces and even its strange humour—in order win the game. Further, this process of internalization involves a similar balancing act between “material and formal constraints” undertaken by game designers; Mateas describes these causal chains as “Material for Action” and “User Intention” (25). Acting as a character within the Aristotelian framework, the user’s actions become a formal cause that affects the plot, as the user becomes a co-producer of the narrative. While Mateas is essentially correct in his expansion on Laurel and Smiley’s models, what he overlooks is the user outside of the representational frame, who is in a constant process of internalizing the environment, manipulating it, speculating on it, then acting upon it through her narrative character. The riddles that must be solved or the objects which must be collected in order to move onto the next exploratory space exist as abstractions in the mind of the user; they are solved through the use of mental models of the space, the system and the designer’s intentions. This process of the internalization (through mental modeling) and externalization (through acts of agency)

expands Mateas's understanding of the workings of IF by accounting for the activities of the user beyond the frame of the representation, as well as within it.

*Adventure*, and games like it, encourage the user to collect various objects (ie. "GET LAMP") and use them within the game to explore further. Throughout the history of IF, the dominant way of constructing worlds has been to have things contained in other things: the dungeon contains a room, the room contains a box, the box contains a key (Goetz 4). In IF, objects are almost always placed in a room for a particular reason, whether semiotic or ludic: a key implies its use in a lock somewhere, for example. As Squire and Jenkins remark, "[i]nformation essential to the story is embedded in objects such as books, carved runes, or weapons. Artifacts, such as jewels, may embody friendship or rivalries or may become magical sources of the player's power" (5). Objects exist in these worlds for a purpose—they are part of the "narrative architecture" that comprises the game's puzzles, storyline and spaces (Jenkins 121).

Thus the narrative architecture of the game is based on a complex system of object affordances. The concept of "affordance" is one popularized in human-computer interaction by Donald Norman. In *The Psychology of Everyday Things* (1988), Norman writes that "the term affordance refers to the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used" (9). In interactive fiction, the narrative architecture of the game is such that objects imply usage somewhere else in the game. Thus the question that is central in the mind of the user in IF is usually, "What am I supposed to do with this?"

Likewise, when first confronted with command prompt of the natural-language parser, the same question of affordance might be asked: “What am I supposed to do with this?” It is largely up to the user to determine the affordances and constraints of NLP system. The objects within the IF representation, the use of logic-puzzles and the IF system itself place a huge emphasis on tool-use (including symbolic tools). These games require a Vygotskian internalization of mediated social objects—hardware, software and representation—and their application through acts of external agency in order for the game to be won. If interactive fiction is centered around the riddle, as Montfort (2003) suggests, then surely that riddle is a rather Vygotskian one: “What kind of tool is this?”

Interactive fiction does more than represent a particular orientation towards Vygotskian tool-use and exploratory epistemology, however. It also demonstrates a particular way of narrating a story based on this system of exploring, using tools and iteratively interacting with the AI. As I have already noted, systems like *Adventure* emerged out of role-playing games (RPG’s) like *Dungeons & Dragons* and tended to incorporate elements of literature borrowed from Tolkien and other fantasy works. In his insightful article, “Creative Accounting: Role-playing Games, Possible-World Theory, and the Agency of Imagination” (2005), Daniel Punday suggests that generative power of role-playing games and their continued longevity is due to a combination of factors: mythic intertextuality, statistical and rule-based standardization, allowance for agency (and chance), and a striking similarity to theories of possible worlds in narratology and philosophy. Many of Punday’s conclusions are true also of interactive fiction, and can help us understand the narrative appeal of IF.

Like IF, Punday describes tabletop role-playing games as “A World Made of Objects” (115). Tracing the history of role-playing games from miniature-based military battle simulations, from *Chainmail* (1971) to *Dungeons and Dragons* (1974), Punday asserts that the primary innovation of the latter was the invention of the “hit point”—a measure of damage a character could sustain before either dying or retreating from battle. “The development of RPGs, then,” he asserts, “depends on finding a way to endow individual characters with statistical qualities that allow tactical manipulation” (116). The hit point, and the assignment of various attributes to characters (Strength, Intelligence, Wisdom etc.) and objects (worth in gold pieces, for example) not only brought the narrative down to an individual level, but also constructed a set of statistical descriptors that could be compared, improved upon or used in battle scenarios. This statistical standardization means that these games “define the world as a structure not of events but of objects. Indeed, even when these games describe history, it is as a collection of objects” (117). So while one might assume that IF inherited its object-based ontology from computer programming, this is not really the case; it is a mode of world-building that is inherited from RPG’s.

Attributing statistics to everything from objects, to monsters, to heroes and even deities provides a strange kind of standardization that allows for both radical intertextuality and, paradoxically, an increase in the degrees of freedom within the game:

Once players have defined the objects in the world and assigned them statistical qualities, what particular players might choose to do with those objects is quite open-ended. The lock on a box might be opened with a key

or picked by a skillful thief, but players could also propose prying it open with a tool or carrying it to the top of a wall and dropping it. Some of these activities are covered by standard tables that define chances of success, but even when actions that fall outside of the rules are proposed by players (e.g., dropping the box from a height), the result can be interpolated based on other rules. (Punday 118)

Similarly, Punday sees this standardization and the emphasis on agency in these games as contributing to an intertextuality which adopts, opens up and intervenes in a variety of literary worlds and genres: superhero, espionage, fantasy, horror, humor, mystery, science fiction, westerns, swashbucklers, and pulp adventure stories (120). RPG's adopt "pulp" and fantasy genres as their own, setting the rules and stats for the various entities and objects in the possible worlds these works have already constructed. Further, a fantasy medieval world might incorporate elements from real-world history, fantasy novels, Greek myth, fairy tales, and so forth; as long as a narrative and statistics can be attached to the literary object, it can be incorporated into the game world.

If this reduction to statistics seems overly instrumental, it is not. The enjoyment of these games is derived from the pastiche-like manner in which worlds can be created combined with the use of rules to create a mimetic, possible world that is complete, accurate and full of affordances. "To play such games creatively," asserts Punday, "is to account inventively—to use statistics and manipulate prefabricated objects in unexpected and resourceful ways" (128). In short, it is about using creativity to push the affordances

as far from equilibrium as they can go, without breaking the rules or the internal consistency of the possible world that has been created.

In interactive fiction, similar creative approaches are required. Indeed, much of the appeal of these narrative games is the “audience's love of complexity, difficulty, creativity and individuality”; this desire for creativity is evident in a fascination with puzzles as well as getting “caught up in the process of visualizing themselves acting in an imaginary world” (Buckles 81). At the level of the interface, game designers encourage users to “have some fun with the computer. Tell it a joke. Insult it. Type in a sentence which makes no sense” (Gutman in Montfort 2006). The creative use of interface through subversive typing adds an aspect of play to normal, goal-oriented interactions. One is probing the system in a kind of informal Turing Test, in order to find out how intelligent the machine actually is, and find out exactly how far the rules go before breaking down. Designers anticipate this kind of play on the part of the user, and build in clever and unexpected responses to user questions.

Since IF is defined by its constitution as both text and program, all objects within the world must be coded into the representations in the software. What characters can do with these objects, which verbs apply to them, their descriptions and uses must all be programmatically defined ahead of time. Like the statistics of RPG's this makes for a kind of standardization that allows virtually *any* object to be coded into the parser, and used in the world of the story. Likewise, IF tends to adapt the same pulp and fantasy genres as RPG's, opening up the possible worlds of other authors for intertextual play. These worlds, submitted to the process of virtualization through IF software, allow

interactors to move through these worlds as agents, and enter into a process of co-production with the software to create new narratives. So the narrative appeal of IF, like that of RPG's, is a complex combination of creativity, intertexuality and rule-based play that encourages inventive solutions and imaginative engagement.

### **Exploration as Internalization**

However, I would assert that something else is going on here as well, related to the inherently spatial nature of these games, Vygotsky's concept of internalization and the philosophical concept of possible worlds. Possible worlds theory finds its way into narratology from philosophy, where it can be traced back to Leibniz, who argued that there are an infinity of possible worlds in the mind of God—and that one of them, the best possible, is the one in which we live. Since the 1960's, Saul Kripke and others have sparked a renewed philosophical interest in the concept—an interest that has been shared by narratologists Lucia Vania, Umberto Eco, David Lewis, and Lubomir Dolezel in the 1970's and Doreen Maitre and Thomas Pavel in the 1980's (Wardrip-Fruin 2006: 227). Marie-Laure Ryan traces this history in narratology, in her book *Possible Worlds, Artificial Intelligence, and Narrative Theory* (1992), and has been integrating its insights into her work ever since. While the topic may seem abstract, we engage with possible worlds on a regular basis:

[W]e imagine possible worlds when we speculate ("I wonder if the lunch special will be Lemongrass Tofu"), when we wish ("I hope Jane gets that promotion"),

when we plan ("We'll get there before the doors open, so we have great seats"), and so on. Possible worlds, and modal logic more generally, are tools for thinking through versions of such questions: What is possible? What is impossible? What is necessary, or contingent? (Wardrip-Fruin 2006: 227)

When dealing with the possible worlds generated by IF, we ask ourselves all of these questions, and it is likely that we ask ourselves these questions of the interface as well. For Ryan, however, fiction generates a particular kind of possible world: a fictional setting represents a system of reality that has its own rules, history and contingencies which may differ from our own. In fact, it is often the alterity of possible worlds in fiction that make them so interesting; we are given a world that behaves somewhat like our own, but not quite. Furthermore, the plans, memories and speculations of characters and agents within the fictional world of the text generates other possible worlds (or "virtual narratives") within the textual one (Ryan 1992: 23-25).

In her more recent work on possible worlds and the diagramming of narrative, Ryan argues [t]hrough the analysis of diagrams relating to three aspects of plot — time, space, and mind ... that graphic representations are not merely a tool for representing narratological knowledge, but an important way to produce this knowledge" (2007: 11). Interestingly, the diagramming of narrative through spatial mapping has always been an important part of RPG's and IF: from the battle grids of tabletop war games, to the dungeon maps of *Chainmail* and *D&D*, to the maps of Mammoth Caves drawn up by Crowther and Woods for *Adventure*. Advocating a graphical, semiotic model that takes into account the spatial, causal, mental and symbolic connections within the storyworld,

Ryan uses suggestive metaphors like “beads on a string,” “building blocks,” “networks,” and “the ‘spatial form’ of narrative.” She offhandedly remarks that, “[c]ausal relations — the cement that holds the events into a story — may connect temporally separated events” (2007:11). Yet this statement is vitally important, particular if we are dealing with “a world of objects” as in IF, and one where the Aristotelian notion of plot is generally accepted to be the most important formal element. Causality in fiction determines how the plot unfolds and how characters will act; on the design end, causality implies new states and different affordances: pulling the lever in one room opens a gate in another, opening up an entirely new space within the game. The importance of these causal dependencies will become clearer when we begin to look at the programming tools that enable IF games, as well as their strengths and weaknesses.

Ryan elaborates on several types of diagrams that can be used to tell a story, but one of the most useful ones for IF illustrates the temporal and mental dimensions within a narrative. “Mental representations,” she remarks, “play an essential role in motivating the actions of characters, and their inclusion in a diagram would consequently bridge the gap between the temporal and the mental dimension of narrative” (2007: 26). Her attempt at this mapping is included below (fig. 5.4). The map presents time as a double tree with branches reaching into the past and into the future. The branches at the right represent possible futures, while those to the left represent contemplated, counterfactual and actual historical events. What we end up with is a series of possible worlds branching off from the character’s or “interactor’s” position in the present.

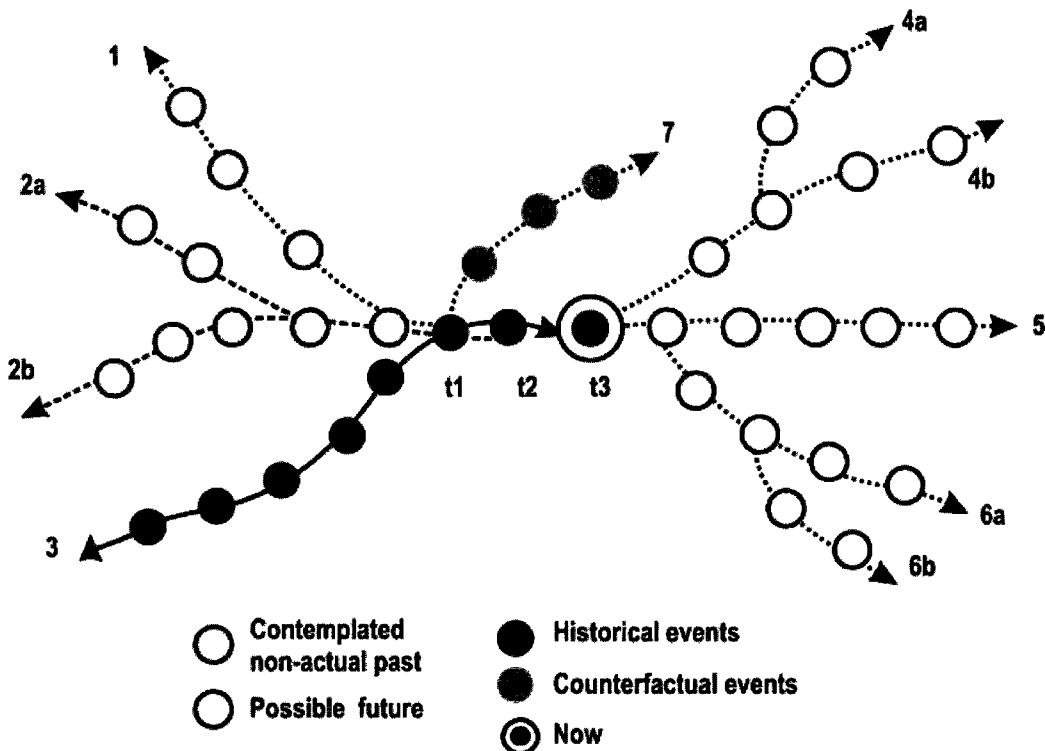


Fig. 5.4 – Temporal Branching in Possible Worlds (Ryan 2007: 26)

The fascinating thing about this graph is the emphasis on speculation and prediction as a means of generating possible worlds. Although there are several precedents for this kind of predictive reading or interpretation, particularly among reader-reception theorists, Ryan's approach is innovative in joining modal logic with narratology to show how the mental states of characters unfold forwards and backwards in time.

Instead of treating characters as static entities or stereotypical qualities, Laurel's model acknowledges the development of character as a result of past experiences (memory) and the predictions that these characters make about the future as a result of their own experiences, belief systems and intentions. This approach dovetails with

philosopher Michael Bratman's model of practical human reasoning based on Belief-Desire-Intention (BDI) that is currently being deployed in AI (Bratman 1999). Several agent architectures for Interactive Drama and video games have, in fact, adopted this model for making believable characters (cf. Damiano et al 2005; Sandercock et al 2006; Padgham & Winikoff 2004; Bratman et al 1991; Guye-Vuilleme & Thalmann 2000).

Similarly, Ryan's possible worlds model, where characters make multiple conjectures about the future, bears strong similarities to recent speculations in cognitive science that the cortex is a kind of Bayesian prediction machine. The Bayesian hypothesis proposes that the brain uses mental models based on past experiences (or our memory of them) to make speculations about the future, and tests various hypotheses in order to optimize its internal models based on what it senses. Drawing answers from such a variety of probabilities is called Bayesian computing, after minister Thomas Bayes who founded the particular branch of math 150 years ago. The main proponent of this model, Karl Friston at the University College London, believes that "[t]he brain is an inferential agent, optimizing its models of what's going on at this moment and in the future" (Huang 30). When we make a decision, we need to process all the variables we see, speculate on the consequences of our actions and make inferences about information that is unavailable to us: "Each neuron responds to a particular variable and the brain will decide on a conclusion about the whole set of variables using Bayesian inference" (Sherwood 2). So when one is reading, we are not only taking in stimuli, but also predicting what we expect to come next, constantly revising our predictions based on this new information. This is almost the same argument that Stanley Fish makes in "Is

there a Text in this Class?" (1980) when he phenomenologically examines how a story unfolds for a reader over time (27). This predictive hypothesis might also shed insight on how and why readers fill in "gaps" in the text, as suggested by Wolfgang Iser in *The Reading Process* (1974):

Even in the simplest story there is bound to be some kind of blockage, if only for the fact that no tale can ever be told in its entirety. Indeed, it is only through inevitable omissions that a story will gain its dynamism. Thus whenever the flow is interrupted and we are led off in unexpected direction, the opportunity is given to us to bring into play our own faculty for establishing connections - for filling in the gaps left by the text itself. (216)

According to Friston's Bayesian theory of cognition, and in line with Ryan's model of possible worlds, the gaps within the text are filled by our predictions based on past experience, and can be retroactively revised once we read further.

Likewise, our expectations towards entire works or genres are largely governed by our previous encounters, our schemata, and clues given within the text, a topic discussed by Hans Robert Jauss in "Literary History as a Challenge to Literary Theory" (1970):

A literary work, even when it appears to be new, does not present itself as something absolutely new in an informational vacuum, but predisposes its audience to a very specific kind of reception by announcements, overt and covert signals, familiar characteristics, or implicit allusions. It awakens memories of that which was already read, bring the reader to a specific emotional attitude, and with

its beginning arouses expectations for the “middle and end,” which can then be maintained intact or altered, reoriented, or even fulfilled ironically in the course of the reading according to specific rules of the genre or type of text. (23)

By “awakening memories of that which was already read,” we end up again in a state of informed prediction regarding the text; these acts of prediction bring into being multiple possible worlds in the mind of the reader, each bearing a specific probability of being true. As we gain more and more information, moving forward in time, these probabilities collapse into actualities, even though they may be subject to revision after-the-fact.

Returning to *Adventure* and interactive fiction, then, the mixture of possible worlds, Bayesian prediction and reader-response above can give us a greater appreciation of why these games are so appealing, and why their emphasis on spatial mapping and natural-language parsing is so important. As we have noted, for Vygotsky, the mastery of a mediated, social tool is marked by its mental internalization, which becomes incorporated into existing schemas and subjectivity of the user. But what we might ask, of spatial mastery?

The importance of spatial mastery in these games cannot be understated, with the entire cave system in *Adventure* being essentially a giant maze; similarly, we should keep in mind that *Adventure* was perhaps the first system to suggest that the representations generated by a computer were a kind of extended space that could be explored and manipulated. Since it did not rely on graphics processing, the spaces produced were only limited by language, computer code, storage and the imagination of the user. We have become so accustomed to the notion of cyberspace, as well as side-scrolling and 3D

games, that we often forget that text-based adventures were really the first genre of games—or literature for that matter—to equate software representations with virtual space.

The space which *Adventure* creates is of course a virtual, cultural artifact which is internalized by the user through a gradual process of spatial mastery. Although a user does not have to visit every space within the Mammoth Caves to win the game (Montfort 2003: 6), a successful traversal is nevertheless the successful mapping, consumption and/or internalization of the spaces deemed most important by the author. Given this goal-oriented dynamic, the space—and its attendant objects and denizens—will always be divided into various binary categories: the known and the unknown, the significant and insignificant, the accessible and the inaccessible. The user explores the space, constantly making conjectures about the significance and connections between the objects in the known space and imagining what the unknown spaces might hold. As in Ryan’s theory of the temporal branching, known spaces exist as remembered actualities in the past and unknown spaces exist as possible world-spaces stretching out into the future. Cognitively, the user is constantly trying to figure out puzzles, riddles and mazes, as well as attempting to discern “how it all fits together”; the beliefs, desires and intentions of the user are constantly changing and emerging, depending on amount of space and story the user has traversed.

As a non-linear, spatial story, interactive fictions like *Adventure* present the user with a series of fragments that must be assembled to form a whole; as a “series of objects containing other objects” these fictions present us with a mediated, cultural artifact

containing other artifacts—all of which must be internalized for the puzzle to be solved.

The answer to the question, “what kind of tool is this?” is only determined after a successful traversal. We are given a territory to map, and in doing so we gain an internalized understanding of its functions.

In detective fiction, the reader is encouraged to solve a riddle through a similar kind of narrative traversal—though in the case of traditional fiction the emphasis is on temporal, not spatial traversal. In the detective novel, the straightforward account of narrative events (i.e. Mrs. White killed Colonel Mustard in the library with the candlestick) is known as the *fabula*; its rearrangement and defamiliarization through the story of the private eye retroactively collecting clues and interviewing suspects is known as the *syuzhet* (Schklovsky 57). Authors may draw on the same *fabula* or “story” in creating their fictions—as pulp novels often do by recycling characters and scenarios—but many unique *syuzets* or “plots” are possible, given their rearrangement, embellishment and the talents of the author. In detective fiction, the riddle of “whodunit” is often solved with the convergence of the *fabula* and *syuzet*, usually in the form of the detective verbally recounting how the murder actually happened in a replay of the *fabula* from which the story emerges.

In interactive fiction, the clues and objects of the *syuzet* are distributed spatially instead of temporally, and the reader-as-detective must traverse the space in order to internalize the space and gain an understanding of the *fabula*; the *fabula* in this case is the totality of the textual fragments and spaces, plus the procedural rules that instantiate them for the reader. In other words, the internalization of space in IF is not only the

internalization of the text that constitutes it, but also an internalization of the programming logic that generates it. To internalize an entire game is to understand the full spatial text and the logic behind it manifest in the software code, the space, the text, the game elements and the conditions for success. This understanding expands the boundaries of the activity system beyond the representation to include the author, the software, hardware, the cultural moment that produced the system and so forth. Even though these elements may not be at the forefront of the user's mind, they nevertheless are a part of successfully engaging with an epistemology engine which is itself a cultural artifact.

Unlike time-based literary narrative, IF uses a spatial arrangement of elements to present a disjuncture between the *fabula* and *syuzet*. The user is confronted with a juxtaposition of known and unknown spaces, and a network of objects, conditions and encounters required for a successful traversal, in order to produce shifting BDI's and a series of speculative scenarios in the mind of the user. Enjoyment in these games, I would argue, is largely due to the possible worlds generated by these speculations and the kind of hypothesis-testing that is required to get the language parser and the objects in the world to "work" in the ways we expect them to. Such hypothesis-testing leverages the Bayesian predictive capacity of the brain for making mental models, testing them against the real world, and revising our models based on the results. Our hypotheses are basically speculations regarding the *fabula* based on the *syuzet*; their convergence in a perfect traversal is akin to our detective solving the case by figuring out the method, motive, murderer and sequence of events that occurred. In essence, our detective reverse-

engineers the murder, whereas our *Adventure* user in a sense reverse-engineers the dungeon, its logic and its conditions for success.

Interactive fictions, as exploration machines and epistemological engines, encourage the traversal of space and the use of objects to attain particular goals. These were some of the first games to suggest that the representations computers produced were a particular kind of space to be explored; furthermore, they helped produce a particular kind of epistemology where knowledge-production was the result of interactions with software, producing a distinct kind of narrative script. In games like *Adventure*, *exploration is internalization*, and spatial mastery of the game implies a convergence of the *fabula* built by the programmer and the *syuzet* which results from gameplay. The enjoyment of these games results from requiring the user to imagine many possible worlds and possible spaces, requiring the use of logic and imagination in order to progress further in the game. Finally, perhaps part of the appeal of interactive fiction is that it constructs a world not unlike our own, where we must explore, pursue goals, and use everything at our disposal to try and determine meaning, while navigating contested spaces. In this way, it melds a desire to explore contested spaces, like the physical Mammoth Caves of Kentucky, with the explicitly narrative processes of conventional reading and writing. As a combination of these experiences, IF helps us to read them against one another, highlighting the processes of exploration we undertake while reading and writing, and foregrounding the processes of narrativization and internalization we undergo while exploring subterranean spaces.

## Interactive Fiction Systems

Several Interactive Fiction Systems (IFS's) exist so that users can develop their own stories and interactive narratives. While graphical gaming systems may have contributed to the demise of IF as a mainstream genre, interactive fiction still has a devoted following of users and developers that contribute to new works and theories of IF. Resources like *Brass Lantern*, *The Interactive Fiction Archive*, *Grand Text Auto*, *Baf's Guide*, *ifMUD*, *ifWiki*, *rec.arts.int-fiction*, and the *Society for Promotion of Adventure Games* all have very active memberships and emphasize user-generated content. The era of mass-consumer IF went into decline around 1986, with the rise of graphical multimedia games. The switch to graphical systems resulted in simpler interactions and less ability for the user to affect the story through her actions, a trend which continues to this day (Flowers 9-10). Since 1991 there has been a resurgence of interest and activity in interactive fiction, and much of this interest stems from the emergence of IF communities on the Web and the release of operating tools that encourage user-generated stories (Douglass 18). In most cases, these freely available interactive fiction systems are more technologically advanced and more flexible than the ones used by commercial developers in the 1980's (Kaplan & Maher 3). While some graphics-based game companies have come out with packages for modifying their games, or toolsets for designing their own scenarios, Interactive Fiction Systems give the user everything needed to create IF from the ground up. The devotion of users to the genre

and tools, combined with the amount of user-generated content available is unsurpassed by even the most modern gaming toolsets.

This is not to say that these toolsets are as advanced as their graphical contemporaries, or as user friendly. The main systems for generating IF are currently *TADS*, *Inform* and *ADRIFT*. Another system, *HUGO*, was once a major contender but has declined in popularity due to a lack of documentation and user interest. Each system has its own advantages and disadvantages, and preference for a given system is largely due to prior programming experience. The most flexible of these systems, *Inform* 7, will be analyzed here to suggest how this system might be improved for non-programmers who are perhaps more used to script-writing rather than writing code. *TADS*, or *Text Adventure Development System*, is the oldest of these three systems and was developed by Michael Roberts in 1987. Version three was released in 2006. Graham Nelson's *Inform* was first available in 1993 and the current version, *Inform* 7, has been completely redesigned as of April 2006, featuring a natural-language programming interface (Montfort 2007: 16). Campbell Wild's *ADRIFT*, originally named the *Adventure Generator*, was released in 1997 and renamed in 2000. It is designed to be a system for non-programmers which uses a graphical user interface (GUI) and pull-down menus to generate code. The latest version is *ADRIFT* 4.00 release 50, was released in 2007.

### **TADS 3**

*TADS* is a set of programming tools for writing IF, based on an object-oriented language similar to C++ and Java. Like other IF systems it includes a compiler for generating binary user files, a library of typical IF objects, a debugger for fixing errors and an interpreter so users can run the game. Part of what differentiates *TADS* from a system like Inform is that developers can include multimedia elements as well as pure text. *TADS* uses HTML for formatting, so control over fonts and styles is possible, as is the inclusion of JPEG graphics and WAV and MIDI sounds. If users are running the game on a text-only interpreter, there is automatic “graceful degradation” to text-only mode, so users will not notice missing elements and programmers do not have to worry about changing code for either text or multimedia systems.

The system allows capturing the game transcript, bundling of multimedia elements for single file distribution and optionally binding the game to the interpreter so users do not have to download an interpreter. The games generated by *TADS* can be used on almost any operating system as a single binary file—there is no need to recompile the software to suit a specific operating system. The command parser is one of the most advanced, and understands a wide variety of user words and phrases—many more than Crowther’s *Adventure* ever could—and the system is continuously improving. There are hundreds of pre-defined objects in the library and these can be customized by developers. Classes of objects include rooms, doors, containers, keys, vehicles, actors, clothing, food, drink and books (Roberts 2008).

*TADS* provides a fairly minimal development environment, and seems to be targeted primarily at programmers; conversely, Inform hides programming concepts behind a natural language “shell” that appeals to non-programmers. As programmer Paul Bell observes:

There are at least two different groups of people who write Interactive Fiction: programmers who are forced to become literate authors in order to write I-F, and literate authors who are forced to become programmers in order to write I-F. I'm sure there is a whole range of people in between these, but, as I look at the arguments, what comes to mind is that, for one reason or another, *Inform* would seem to appeal to the person with the literary background, some of whom have played some of the old (or new) 'adventure' games, and decided to try their hand at a new (for them) literary form, while *TADS* would seem to appeal to [programmers]. (Bell 2001)

Bell's prognosis is essentially correct in that most of the posts to groups like *rec.arts.int-fiction* seem to bear out his hypothesis. *TADS* looks and feels like the C++ programming language, so programmers readily adapt it. Since the system does not try to hide any of the code from the user, complex objects like Non-Player Characters (NPC's) are relatively easy to create and control; character traits and states can be easily monitored and manipulated at the command line, whereas doing this so at a higher level of abstraction can be quite difficult (Nyman 2006). In a sense, the granularity of control is very fine with a low-level system like *TADS*, whereas the granularity of control in

systems like *Inform* or *ADRIFT* is much more coarse due their more abstract (and also user-friendly) interfaces.

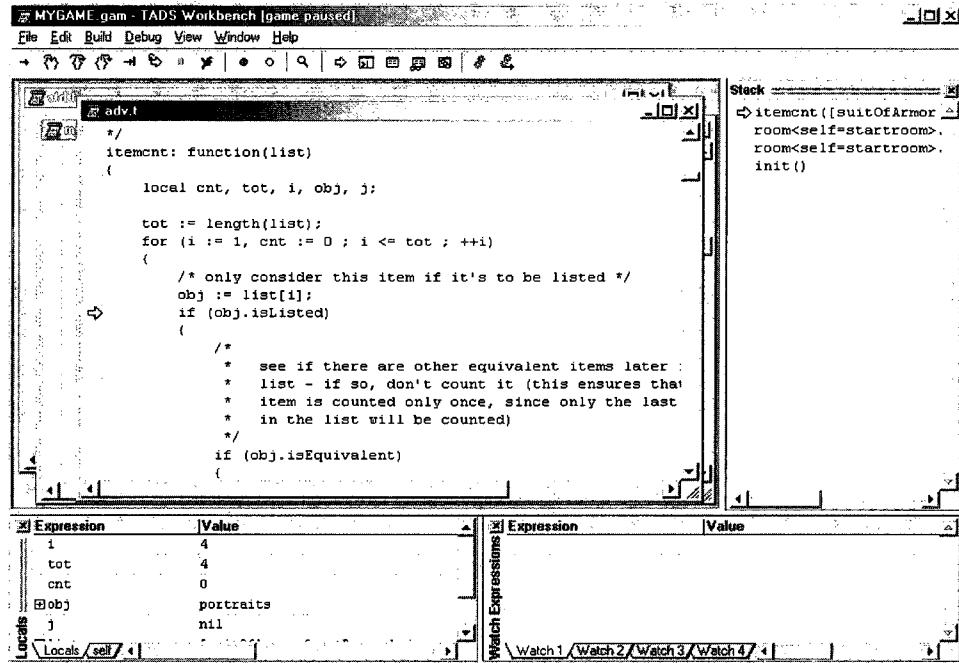


Fig. 5.5 – TADS 3 workbench

While the programming workbench for *TADS* is quite minimal (fig. 5.5), the output to the interpreter is not. Since the system produces HTML-compatible code, the user is presented with an output similar to any webpage, complete with graphics, sounds and special layouts (fig 5.6). While some may argue that including these elements make *TADS* stories less like traditional interactive fiction, this largely depends on user expectations. To users who grew up with the Internet, the lack of these elements may make these games seem archaic compared to their multimedia cousins. However, to

those who play IF games out of a sense of nostalgia or for their charming simplicity, multimedia elements may disrupt the illusion or get in the way of imagining the story purely through the text. Fortunately, the use of “graceful degradation” allows users to choose the amount of multimedia the system uses and therefore the type of experience they would like to have.

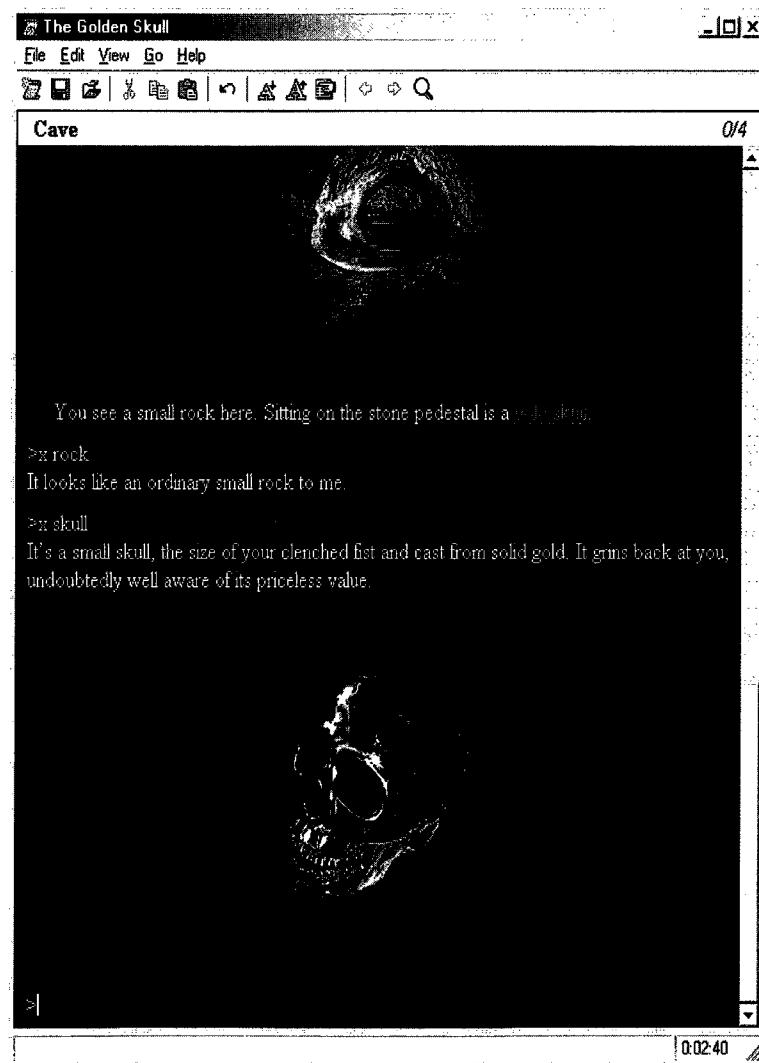


Fig 5.6 – HTML TADS

By most accounts, *TADS* has an extraordinarily steep learning curve, with even programmers admitting that it may take as much as a year to learn the system (Smith 2007). This being said, many programmers choose *TADS* for the degree of customization it allows them and because the code is straightforward, with less specialized syntax than *Inform* (Dollahite 2004). Programmers can even change how the parser works, making it possible for the system to interpret a wider range of specialized words and phrases. Out of all of the Interactive Story Systems, *TADS* is the most extensible, largely because it allows for the low-level reprogramming of object behaviours. However, this low-level reprogrammability is also this reason that many writers intentionally avoid the system—since one must essentially be a skilled programmer in order to use it.

### **Inform 7**

*Inform 7* marked a major change in the way users programmed IF relative to its previous version, *Inform 6*. *Inform 6* was very much like *TADS* in its emphasis on programming and C++ like structure. However, with *Inform 7*, the emphasis has been on providing a graphical front-end that presents the user with natural-language definitions of objects. This allows the author to concentrate on story-telling rather than programming, and allows users who are not programmers by trade to adapt to the system quite readily. Graham Nelson remarks that the system attempts to create a situation where “the activity of programming IF is a form of dialogue between programmer and computer to reach a state with which both are content … not unlike the activity of playing IF” (Nelson 2006).

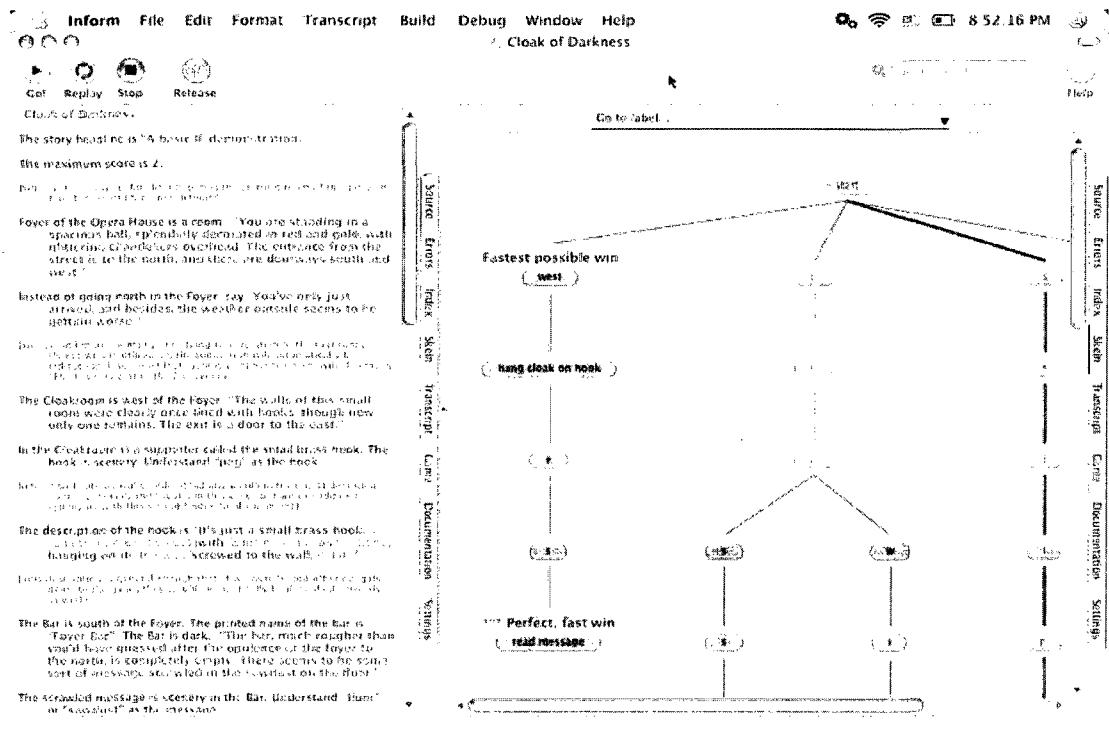


Fig 5.7 – *Inform 7* showing skein view

There are distinct advantages and disadvantages to using natural-language programming. The major advantage is that it is largely declarative instead of procedural,

so authors merely describe objects paragraph by paragraph rather than explicitly using routines and subroutines to define how they work. This is a somewhat significant shift from normal programming, but it is much more in line with way authors typically think. In *Hamlet on the Holodeck* (1997), Janet Murray coined the term procedural authorship to denote the act of writing and coding: “Procedural authorship means writing the rules by which the text appears as well as writing the text themselves. It means writing the rules for the interactor’s involvement, that is, the conditions under which things will

happen in response to the participant's actions" (Murray 152). With a system like *Inform 7*, the question of procedurality largely disappears, since it is mostly taken over by the software. This does not mean that the author does not have to *think* procedurally to reason out all of the dependencies and contingencies of a non-linear text, but that most of the procedural programming is replaced with declarative descriptions.

In the story "The Cloak of Darkness", a small brass hook would be defined by the following code in *Inform 6*:

```
Object hook "small brass hook" cloakroom
    with name 'small' 'brass' 'hook' 'peg',
        description [];
    print "It's just a small brass hook, ";
    if (self == parent(cloak)) "with a cloak
hanging on it.";
    "screwed to the wall.";
];
has scenery supporter;
```

(Firth 2007)

The code defines the object and what it can do, and can be called by the interpreter code when the user encounters it in the game. By comparison, *Inform 7* defines the same object in the following way:

```
The description of the hook is "It's just a small brass hook,
[if something is on the hook]with [a list of things on the hook]
hanging on it[otherwise]screwed to the wall[end if]."
```

(Firth 2007)

The code contains a simple if-then statement, but otherwise the text reads like standard English. Authors are not required to understand the rules of object-oriented programming to understand what the hook is or does; the declarative statement “description [object] is” defines the object for the *Inform* interpreter.

The disadvantages of such a system, as defined by Daly, “include occasional awkwardness of natural language and the possible penchant for writers to misunderstand the meaning of a paragraph of code when skimming” (Daly 2006). While some may argue that natural language is verbose compared to the programming language of *TADS*, or that the granularity of control is far less, the *Inform* 7 system nevertheless opens up IF authorship to a host of users who would never otherwise consider programming a story. Additionally, older *Inform* 6 code can be used in *Inform* 7, allowing users who are more comfortable with procedural authorship to program as they normally would (Kauhanen et al. 2007).

The visual GUI interface also provides authors with a host of information about their constructed storyworlds. A map of the entire story world can be viewed as well as an index of all room descriptions. Likewise, all objects (including characters) can be viewed in one spot, so that the user can change descriptions and behaviours as necessary. The system contains a built-in interpreter so the author can perform user-testing to debug the code. The “skein” view shows the branching narrative choices an author/user makes during testing, and authors can choose to play the game from any point in the skien. From this view, narrative points can be added, modified or annotated as desired, and the author can “bless” certain descriptions as correct at any point during editing. A transcript

view allows the author to view player commands and game responses from a given traversal as a means of user testing. The emphasis overall is on creating, then playing the IF text that has been created, as a method of iterative design. The interface itself allows for any object or element to be “clickable”; that is, clicking on an object within one frame brings up its attributes and dependences in another, even if the author is in game-play mode. This allows for very fast editing, but it is also a way of getting around procedural authorship: object dependencies are not explicit in the code itself, but rather via links to hierarchies and descriptions.

On the whole, the system is highly visually oriented, and allows users to see at a glance exactly where they are in the world-building process. This lets users move from local to global contexts very quickly, switching from the details of individual objects to a view of the entire storyline with a few clicks of the mouse. This flexibility makes up for some of the granularity of control that is lost by switching to a higher-level interface relative to *TADS*. Similarly, the system has the ability to infer the types and properties of objects based on how they are used. If one declares to the system that “Mike wears a cloak”, a person named “Mike” is created, an wearable object called “cloak” is created, and the attribute “wearable” is attributed to cloak. The system also automatically tracks relationships between objects, so that objects can contain other objects, objects can be worn, keys can be used and so forth (fig. 5.8). This system of attribution overcomes some of the limitations of declarative programming by setting attributes that would normally need to be procedurally declared transparently and automatically for the author.

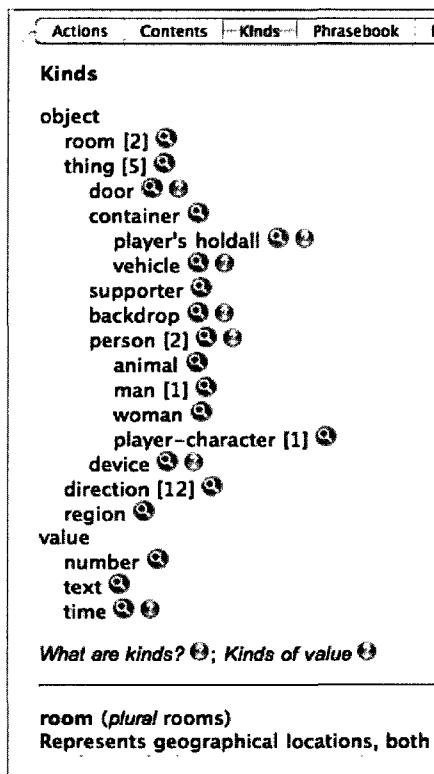


Fig 5.8 – *Inform 7* showing objects view

## ADRIFT 4

Operating at an even higher level of abstraction, the *ADRIFT* authoring system uses a fully graphical interface and is largely mouse driven. It is designed to appeal to aspiring IF authors who are not programmers, and uses a system of forms-based pull-down menus to define objects within a storyworld. Running only under Windows, *ADRIFT* is written in Visual Basic, which limits the number of potential authors who might try the system. There are, however, two third party *ADRIFT* runner clones, *jAsea*

and *SCARE*, which allow users of other operating systems to play *ADRIFT* games on other operating system platforms.

Despite the sparseness of the interface, *ADRIFT* is powerful enough to produce conventional text adventure games, even including multimedia enhancements. The *ADRIFT* interpreter automatically builds a game map during play. While the system sacrifices power and flexibility for usability, it nevertheless has loyal user base and a large array of stories available, perhaps due to the shallow learning curve required to use the system.

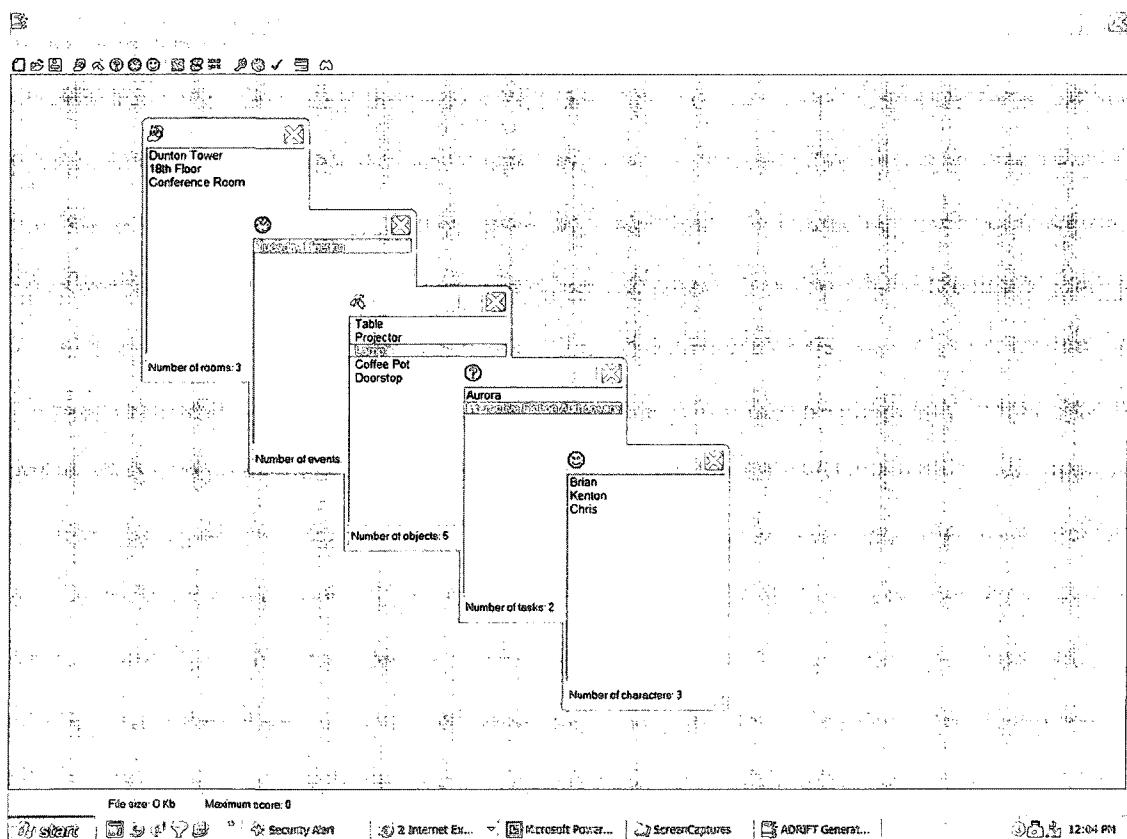


Fig 5.9 – *ADRIFT* 4

Lists of objects, characters and rooms are each shown in individual windows, and overall the GUI tends to look much like a relational database system such as *Microsoft Access*. Natural language is used to add object attributes. An outline of “task dependencies” is shown graphically in the toolset so authors can visually check the relationships and states of objects required for a successful traversal. It also includes a real time debugger so the author can view the current status of objects, characters and make live changes to their values. The system also allows for timed events, whether triggered by user actions or timed to occur at regular intervals. Events can trigger changes in the environment, effect movements of NPC’s and changes of state within the game. By foregrounding the role of events and tasks in the toolkit, a sense of dynamic interaction within the game is encouraged, as opposed to toolkits that emphasize static maps and their exploration. Building on this sense of dynamic interaction, *Adrift* also has a “battle manager” built into the character designer, which uses a system of sliders to determine various statistical attributes.

The greatest strength of the system—the GUI interface and lack of programming knowledge required to use it—is also its greatest weakness. Using the *ADRIFT* toolkit feels like playing a game with its various boxes and sliders, but it also seems like a “paint-by-numbers” approach to interactive fiction. One cannot imagine Proust or Shakespeare using a system of pull-down boxes to construct their works, and the limitations of the system become apparent fairly quickly. However, the system supports the import and export of “modules” or object scripts from one adventure to another, and there is a large online community contributing to these object libraries. “Wizards”

control the importing of objects to ensure that the scripting code matches that of the target adventure, and offers corrections to ensure that everything works as planned. In some sense, given the battle manager and modules available on the web, the system comes very close to the old table-top games that Punday examines. Many of the objects and elements are “ready-mades” and have statistical attributes that can easily be “plugged-in” to the game engine. However, table-top games also had a human Dungeon Master or Game Master that could bend the rules, introduce ambiguity and improvise when required—abilities *ADRIFT* lacks. In systems like *TADS* or *Inform*, a certain level of ambiguity or complexity can be handled by directly coding for unexpected user actions (in *TADS*) or handled by a strong natural-language interpreter and parser (in *Inform 7*). Lacking either of these elements, *ADRIFT* is more likely to falter when faced with complex tasks or ambiguous input. The high-level of abstraction the interface uses comes at the cost of fine control over details; objects cannot be manipulated in complex ways as one is able to do in *TADS* or *Inform*. Despite this limitation, the system has a niche market among non-programmers and former table-top gamers, both groups who appreciate the ease of use and the amount of user-generated content available.

*TADS*, *Inform* and *ADRIFT* appeal to quite different user bases: *TADS* appeals to die-hard programmers who are familiar with procedural programming and want a fine degree of control over objects and behaviours; *Inform* strikes a middle ground between programmers and writers by providing a natural language, GUI interface that allows for programming through the inclusion of *Inform 6* code, and *ADRIFT* appeals mostly to authors with little or no programming experience, who are perhaps familiar with table-top

gaming systems and the Windows GUI operating system. All of these systems provide output that looks and feels like traditional IF, as well as optionally including multimedia elements. The degree of flexibility and control of each system tends to be inversely proportional to the degree of abstraction used in the toolset; in general, the steeper the initial learning curve for the software, the greater the flexibility and degree of fine-tuning the system provides.

*Inform 7* manages to strike a balance between these extremes by letting users choose between code or the GUI interface. Similarly, presenting users with a familiar natural language interface and a series of views like the “skein” allows for greater user acceptance and helps to overcome some of the shortcomings of a declarative system. However, several changes or modifications to the system might be useful in extending its capabilities, providing a wider array of user experiences.

### **Moving IF Forward**

Since IF systems commonly rely on the “*ELIZA effect*” to maintain a suspension of disbelief and the simulation of cognition, it seems strange that *Inform* does not allow modifications to the parser. It is a functionality that is available in *TADS* but not *Inform*, most likely due to *Inform*’s GUI interface and declarative programming system. A reprogrammable parser would allow for more intelligent IF agents able to hold verbose conversations, like an *ELIZA* chatbot. Such a development would be a natural progression of recent research in Belief-Desire-Intent and Bayesian models of cognition

in AI. Further, a reprogrammable parser and interpreter would allow the parser “Dungeon Master” and the various NPC’s to be plug-in characters, traded in the same way that objects and modules are in the *ADRIFT* community. While characters are generally tradable as game objects, their intelligence is not; the ability to reprogram the interpreter and parser would add this functionality to the system and change the “ecosystem” of user-supported content.

I have suggested that interactive fiction acted historically as a kind of “exploration engine” which encouraged (and continues to encourage) the investigation and mastery of various cyberspaces. These systems, at the time they were first released, were as much about finding out what a computer could do and where one could go on a network as they were about spelunking in underground caves. This spirit of exploring computer systems and exploring spaces is central to IF, even though the home computer and the Internet are now ubiquitous, rather than the mysterious systems they were in the 1970s and 80s. However, other fields of computing have emerged since that time which are just as new and innovative to the average home user: locative computing, augmented reality, tactile computing and intelligent environments, for example. In each of these cases, we can envision the “exploration engine” of IF used to investigate the cyberspaces opened up by these technologies.

One can imagine, for example, a locative media interactive fiction played on a portable handheld computer, where instead of a dungeon one explores the spaces of the real world through real-time GPS, solving puzzles and interacting with fictional denizens at specific locations. One can also imagine this locative usage extended to augmented

reality, so that items such as keys in the game actually appear in the heads-up display, overlaying the real world. Such a system would allow the city to take on a mythic context, and encourage forms of IF play that are not only creative, but collaborative. SMS and text messaging might be used to blend interactions with the parser and characters with other explorers of the IF system, as in a Multi-User Dungeon (MUD). Users could work towards common goals or, given a battle engine like that in *ADRIFT*, even engage in virtual combat with one another. Given tactile computing, one can imagine a return to table-top gaming, but this time done on a multi-touch projection computing system like the *Microsoft Surface* or its open-source equivalents. Users would be able to see the dungeon they are travelling in, the monsters they are fighting and the puzzles they have to solve, employing tokens and figurines like the ones used in *Chainmail* and other early battle games. Except with tactile computing, each of these tokens become interactive game pieces for the IF system. In another incarnation of tactile IF, one could deploy playing cards like those used in the game *Magic: The Gathering* by Wizards of the Coast, where cards represent monsters, spells and the “mana” (energy) used to deploy them. Again, each of these tokens would be understood by the interactive system and incorporated into the dynamic storytelling system. With intelligent environments or advanced ubiquitous computing, an entire building could be set up with video-enabled agents and puzzles in various locations, with tactile game elements (or “feelies” as they are called in IF) being Bluetooth and WiFi enabled. In this way, the game would know where you are, what artifacts you have, what your character’s strengths and weaknesses are, and can adapt the game accordingly. One could play a

murder-mystery IF in an actual house, with actual artifacts, against another team attempting to solve the same mystery, much like *Clue*. The use of intelligent environments would allow the system to track in real time the progress of each team, what spaces had been explored and what clues had been gathered, reacting accordingly with sounds, text and multimedia elements distributed throughout the environment. In all of these imagined cases, the “exploratory engine” of IF is deployed to discover new spaces and what these technologies can “do,” similar to how *Adventure* acted as an introduction to the Mammoth Caves, cyberspace and the personal computer. By porting a system like *Inform* to these new digital contexts, interactive fiction could gain a new audience, just as eager to explore new technologies and new spaces as *Adventure* players were in the 1970’s.

I have argued that interactive fiction also represents a kind of epistemological engine that encourages the co-production of specific kinds of knowledge based on exploration, collecting objects, the use of logic and spatial mastery. This mode of epistemology is now quite common given the use of the Internet, but it was not in the early days of *Adventure*. We have become rather accustomed to typing in “magic words” into a search engine to get the results we want, rather than using a card catalogue, a resident expert or a series of journal indices, as we might have prior to the rise of digital database systems. However, noun-verb pairs in IF and the use of keywords in databases to get specific results are quite different, even if the epistemological “quests” are quite similar. The performative interaction with an IF parser like the one in *Adventure* is a much more conversational, engaged and exploratory experience than using databases,

which commonly lack the iterative sense of interaction and discovery one finds in IF.

Instead of thinking of narrative and the database as “natural enemies,” we should instead think of them as “natural symbionts,” since each do things the other cannot, yet both are involved in processes of meaning-seeking and meaning-making (Hayles 2007: 1605-1606). Part of the historical disjuncture between databases and narrative, I would argue, has to do with the changing conceptions and development paths of “productivity tools” and “games” since the birth of *Adventure*.

When *Adventure* was developed in 1975-6, the command line interface of the DOS or UNIX and the command line interface of the game bore a strong resemblance. With the development of 3D gaming, GUI operating systems, productivity software like *Microsoft Office*, and graphical web browsers, there is a clear divergence in what looks and feels like a game and what looks and feels like productivity software. There is also a much larger gap in the amount of AI incorporated into these systems. In an MMORPG like *World of Warcraft*, there is a huge amount of artificial intelligence in play, spanning several online servers; with desktop software like *Microsoft Word*, there is very little AI beyond the “Paperclip Wizard” (“Clippy”), and even this is rather poorly implemented. In short, we tend to believe that our games should have intelligence but our work software should not. Similarly, attempts at incorporating AI agents into web pages have not been particularly successful or widespread. However, one could imagine conversational agents that would help us find what we want on the web, adapt desktop software to our own particular uses, or help us navigate large repositories of data. Interactive fiction has traditionally been used to help users navigate large data spaces and

adapt to them in particular ways; there is no reason why they could not be adapted to similar ends in databases, desktop software and the web. By allowing the Inform parser and interpreter to be reprogrammed, and by allowing exported AI to be “plugged in” to existing open source systems, one could adapt IF to act as an exploration engine for large data sets rather than simulated dungeons.

As a cultural artifact that encourages questions like, “what kind of tool is this?” and “how do I use this?,” the AI engine of interactive fiction might also be useful for training. Since every object in the representation worlds of IF tend to have a functional use, either for the sake of plot or the overall semiosis, interactive fiction engines would be useful for training users in the particular uses of tools, particularly ones with which they are not familiar. The emphasis on logic, trial and error, and tool use in IF facilitates its usage for learning through exploration; the importance of space, plot and character in IF make these systems well-suited to creating various scenarios that the user must solve through the application of logic and tools.

Since IF tends to prioritize spatial elements and mapping, it seems surprising that the mapping tools in Inform are not more highly developed. Though the mapping tool does allow for the joining of spaces using a block-and-stick model, it lacks more sophisticated tools which would provide a truly indexical map of the digital space being represented. Similarly, *Inform* does not provide a parser-level map like *ADRIFT*, which would allow users to see where they have been and where they might go. Such mapping tools would make *Inform* much like table-top gaming, where spaces are mapped out on a grid and users have an idea of their relative sizes, attributes and so on. A drag-and-drop

design tool, like that used in *Microsoft Visio* (fig. 5.10) or the open source program *Dia* (fig. 5.11), would allow authors to quickly make maps using a series of design templates.

If one used a multi-touch system like the *Microsoft Surface* (fig. 5.12) to design interactive fiction, the author would automatically have a full view of the entire space he or she is dealing with, including the objects, characters and architectural elements that characters could explore. Such a system would allow users to zoom in to specific spaces to check their textual descriptions, and make changes as necessary before zooming out to see how everything fits together. Such a system would also allow for *Inform*'s "skein" view to overlay this dynamic map, showing the causal connections between spaces, their dependencies and particular plot nodes that emerge from having explored particular spaces. Such a view would mirror that of Eastgate Systems's *Storyspace*, a tool for creating hypertext narratives. *Storyspace* uses rectangles to represent chunks of text, which can be moved and manipulated relative to one another, with arrows denoting links between these writing spaces (fig. 5.13). The visual layout allows authors to create large, complex hypertexts by abstracting the chunks of text; this way the author is not overwhelmed by text and code, but rather can know at a glance the relative location and dependencies of a given node. By allowing a map and hypertext view, *Inform* would likewise be able to show spatial and narrative elements simultaneously—allowing for a kind of "spatial storyboarding" of either representational or—in the case of locative applications—real spaces.

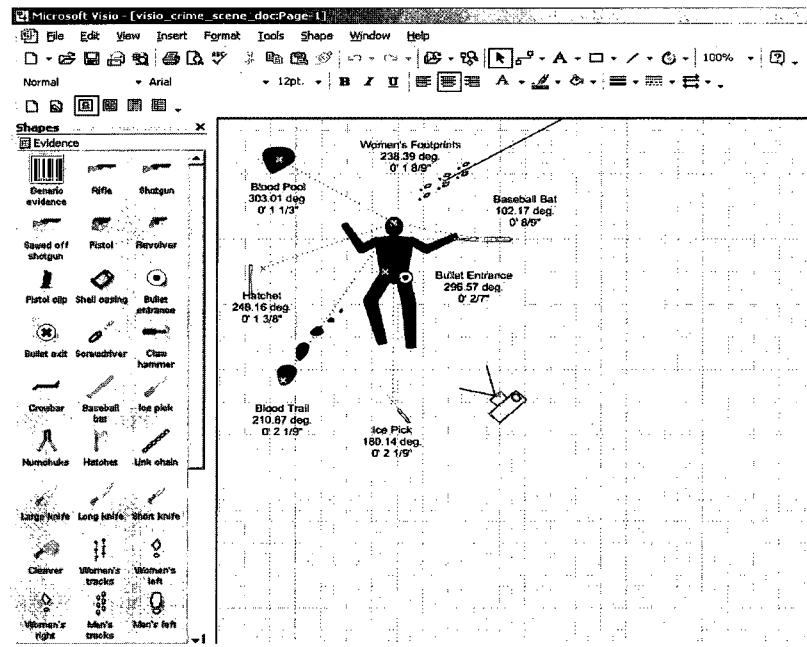


Fig 5.10 – Microsoft Visio showing drag-and-drop templates

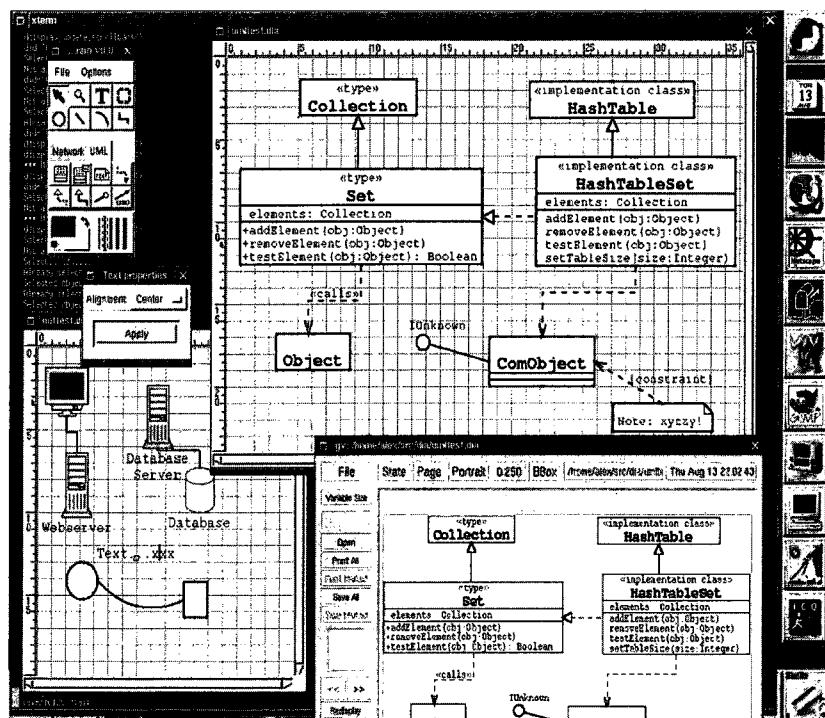


Fig 5.11 – Dia, an open source template-based design tool



Fig. 5.12 – *Microsoft Surface*, a tabletop multi-touch system

If the mapping tool allows for the improvement of plot and narrative elements through their spatial representation, one might also include visual tools for character creation. *ADRIFT*'s use of forms and sliders is instructive here, as is the creature design tool used in the Aurora Toolset for the video game *Neverwinter Nights* (fig 5.14). One should note that Aurora's character/creature creator leverages users' existing knowledge of table top games, which use pen and paper for creating similar attribute forms (Kauhanen et al. 13). Another advantage to this type of character creation system, as Punday has noted, is standardization: by giving characters statistical attributes, any mythological character can ported over to the rule-based system. Such standardization would allow user-created characters and creatures to be used by the battle system; it

would also provide a numerical basis for non-player character interactions with the user throughout the game.

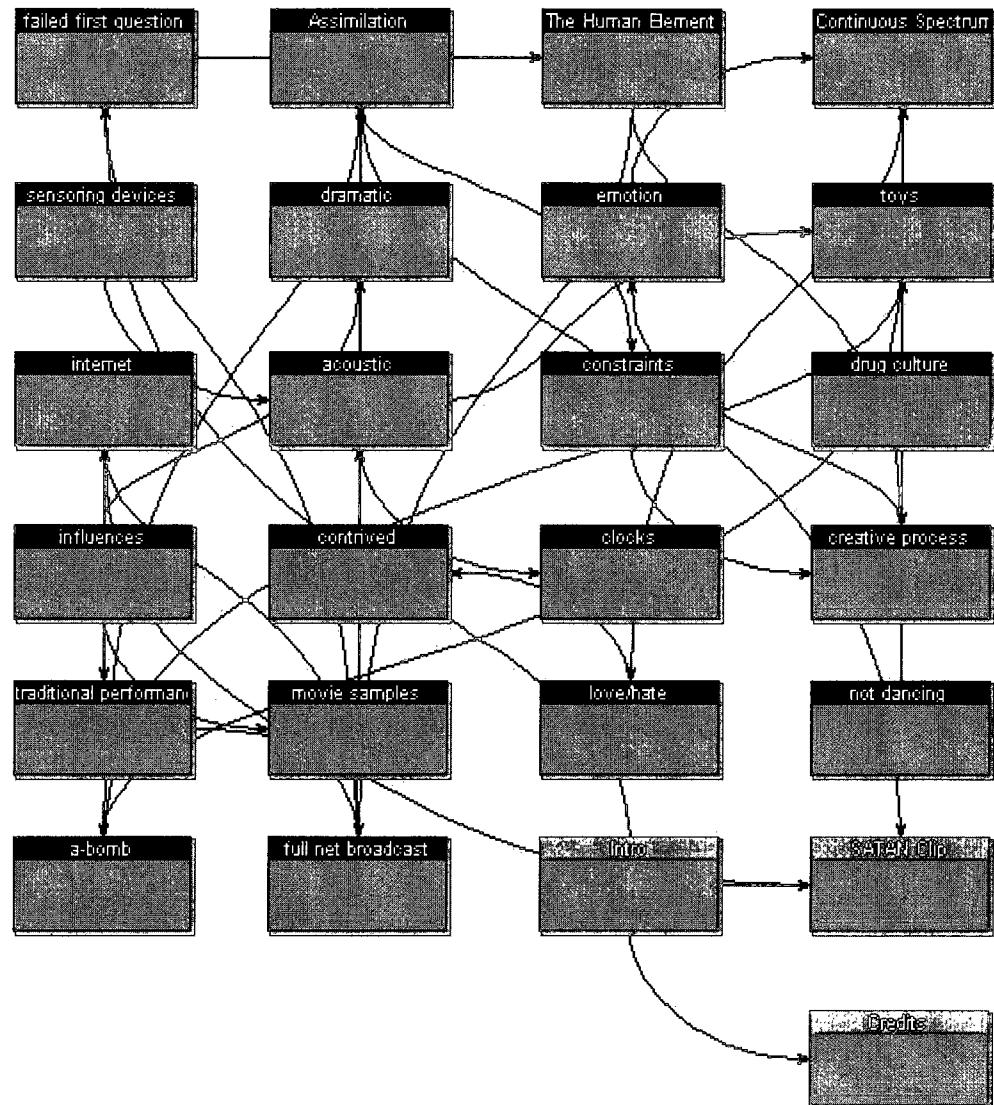


Fig. 5.13 – *Storyspace* (Eastgate Systems)

In a more radical extension of *Inform*'s capabilities, one could also extend the IF system to include a text-to-image engine such as AT&T Labs's *WordsEye*. *WordsEye* is "a system for automatically converting text into representative 3D scenes"; the goal of the software is "to provide a blank slate where the user can literally paint a picture with words, where the description may consist not only of spatial relations, but also actions

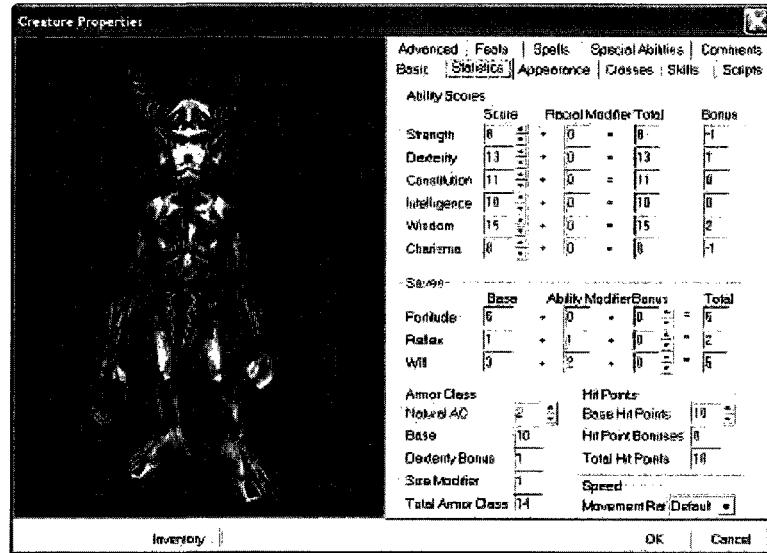


Fig 5.14 – Creature design tool from the *Aurora Toolset*

performed by objects in the scene" (Coyne & Sproat 1). The system uses a library of objects and poses to depict entities and actions; it performs a linguistic analysis of text entered by the user to determine the size, proximity and relationships between objects. For example, if one tells the system, "The bird is in the bird cage. The bird cage is on the chair," we get the following visual output:



Fig 5.15 – *WordsEye* from AT&T

Users can draw upon a library of thousands of objects and poses; if the object they want is not available, they can design it themselves and add it to an existing library (Coyne & Sproat 3).

Since both *Inform 7* and *WordsEye* both draw upon declarative natural-language statements to compose their mimetic worlds, they are well-suited to one another. The object-within-objects model that IF is based on already implies a series of spatial relationships, as well as their dependencies. The lengthy descriptions that authors give objects in interactive fiction (inherited from when IF was a text-only medium) provides a ready-made basis for their graphical depiction using *WordsEye*. Using *Inform* and *WordsEye* in tandem, authors could very quickly create non-linear storyworlds by essentially describing them and have them visually rendered for the user. This would make the process of game creation a relatively fast and easy process, since authors would

not need to learn object-oriented computer languages or graphics programming. As long as authors can describe the world they want to make, they can create it, giving users a 3D environment with rich character interactions, puzzles, quests and a multitude of spaces to explore.

However, this added complexity can change the emphasis of interactive fiction. In IF, one is primarily concerned with text, puzzles and exploration, but as soon as the emphasis shifts to graphical representation, complex characters and narrative structures, we are dealing with something entirely different. The importance of spatial exploration and material causality that tend to define IF are de-emphasized, with time-based narrative and formal concerns such as plot, character and ideas taking on an increased significance. In short, we move from the concerns of Interactive Fiction (IF) to those of Interactive Drama (ID), which takes the theatrical stage, rather than the caves of Kentucky, as its model for the creation of digital interactive spaces.

## Chapter 6

### Interactive Drama: Spaces of Representation and Agency

In the previous chapter, I examined how interactive fiction acted as a kind of exploration engine, by introducing users to cavern and dungeons while at the same time making them comfortable with the virtual spaces opened up by home computing and digital networks. Terms like “electronic frontier,” “cyberspace,” and “information superhighway” are part of our current lexicon to some extent due to the influence of cavern-crawl games like *Adventure*, a game which suggested that behind the command prompt there was a digital space to be mapped and explored. I also suggested some ways that interactive fiction engines might be paired with newer technologies to produce a renewed “age of exploration” for IF by leveraging GUI toolsets, locative media, and tactile computing, for example.

Much work has been done since the peak of mainstream interest in IF, building on ideas from interactive fiction and sending them in a distinctly new direction. In the period of IF’s commercial decline around 1990, an entirely different concept was taking shape: that of Interactive Drama (ID). Designed to boost IF’s visual and literary engagement, Interactive Drama sought to make the interactor a first-person protagonist in a dramatic story (Laurel 1986: 9). Unlike Interactive Fiction, which takes the literary novel as its core model, ID takes dramatic literature and theatrical performance as its exemplars. Significantly, ID breaks with many of the major tenets of interactive fiction: text-based representation, puzzle solving, an emphasis on exploration and second-person

narration. This means that the concerns, design priorities, user experience of Interactive Drama are quite different those of text-based IF.

### **Interactive Drama**

Interactive Drama was first conceived in Brenda Laurel's Ph.D. dissertation entitled *Toward the Design of a Computer-Based Interactive Fantasy System* (1986). The ideas it contained were further developed and popularized in her book *Computers as Theater* (1991). Laurel's oft-cited definition of ID outlined the parameters and concerns of this new genre:

An “interactive drama,” then, is a first-person experience within a fantasy world, in which the User may create, enact, and observe a character whose choices and actions affect the course of events just as they might in a play. The structure of the system proposed in the study utilizes a playwriting expert system that enables first person participation of the User in the development of the story or plot, and orchestrates system-controlled events and characters so as to move the action forward in a dramatically interesting way. (Laurel 1986: 10-1)

This definition neatly encapsulates the intended user experience of Interactive Drama, and outlines the challenges involved in creating a system that is both interactive and dramatically interesting. Instead of the text-based representations of IF, Interactive Drama seeks to immerse its interactor in a first-person multimedia performance: the interactor is the protagonist of a story which unfolds on a digital stage. The user takes on

the role of a character and improvises dialogue and interaction with computer-generated characters possessing a realistic degree of artificial intelligence. Whereas Interactive Fiction is primarily a space-based medium or genre, Interactive Drama is time-based—the plot is of primary importance and the space is limited in order to encourage social interaction. The emphasis is not on puzzles and problem-solving, as in *Adventure*, but rather on the enactment of a believable persona, the discovery of the intricacies of the plot, and engagement with other characters. While both IF and ID give the user a sense of agency regarding the outcome of the story, Interactive Drama allows deep and significant changes to result from user actions, while maintaining a tight authorial control over the structure of the narrative. This means that character enactment and plot rise in dramatic intensity as time progresses and that the causal structure forms a cohesive and organic unity.

There are some significant differences between drama and narrative, which inform Laurel's conceptualization of ID in *Computers as Theatre*. First, drama is about enactment: it is meant to be acted rather than read, sensed as well as imaged. Narrative depends on description, whereas drama is the result of the actions of particular characters. Second, drama involves an intensification of time, “meaning that incidents are selected, arranged, and represented, in general, so as to intensify emotion and condense time” (1991: 94). This is in opposition to the process of temporal extensification one finds in the novel, where perception guides the apprehension of objects, characters and the flow of time. Time can expand or contract based on the psychological state of a given character, but in written drama (and especially theatre in performance) the clock is

always ticking—we observe the actions of characters but can only guess at their inner psychological worlds—time is constant but actions become condensed and intensified in order to bring about a climax and resolution. It is also important to note that since we cannot access the inner worlds of characters—except perhaps occasionally through monologues—we can only approximate who they are through what they do, what they say, how they behave, and how they look. The frame of the theatrical *mise-en-scène* encourages semiotic decoding on the part of the audience, since it is only through these codes that we can intuit the inner lives and motivations of characters. Finally, traditional Aristotelian drama has a unity of action, whereas narrative tends to be more episodic and rely less on sequential causality to form its plot structure (Laurel 1991: 95). In narrative, flashbacks, imagined events, multiple perspectives and changes in time and place are all relatively common; in drama, the spatial limitations of the stage and time-based nature of the medium demands a tight adherence to events which are significant to the central action of the play. “Drama is typically more intense, tightly constructed, economical, and cathartic than narrative,” Laurel remarks, and it must be, since it attempts to distill events in the lives of its characters to their essence, and present them in a limited timeframe (1991: 95). What we end up with is an extremely compact story structure where all plot points are essential to the outcome, and produce a sense of inevitability regarding the fate of the protagonist.

## Cyberdrama

Closely related to the ideal of Interactive Drama is the concept of “cyberdrama” espoused by Janet Murray in her study, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (1998). Murray is not prescriptive in describing what cyberdrama is or might be, but instead offers the term as kind of social imaginary. She begins her first chapter with a discussion of the holodeck from *Star Trek*, which is described as “a universal fantasy machine, open to individual programming: a vision of the computer as a kind of storytelling genie in the lamp, where “crew members [enter] richly detailed worlds … in order to participate in stories that change around them in response to their actions” (1998: 15). Precursors of Murray’s cyberdrama include the multiform story, stories with reader interaction, 3D movies, simulation rides, electronic games, hypertext narratives, and virtual reality. While this is a useful genealogy of interactive narrative, in many ways it minimizes the effectiveness of “cyberdrama” as a specific term: the cyber(netic) element is readily apparent in all of the forms listed, but the dramatic element often is not. Murray herself admits that the aesthetic principles of cyberdrama “are not so much current pleasures as they are pleasures we are anticipating as our desires are aroused by the emergence of the new medium” (1998: 181). In a later work on cyberdrama, she comments that the computer as an expressive medium “is the appropriate locus for enacting and exploring the contests and puzzles of the new global community and the postmodern inner life” (2004: 3). In this sense, cyberdrama is seen to

reflect our current historical sense of (non-linear) narrative just as the novel reflected life in a previous era (Wardrip-Fruin & Hannigan 1).

The three “aesthetic pleasures” of cyberdrama Murray refers to in *Hamlet on the Holodeck* are immersion, agency and transformation. Immersion refers to “[t]he experience of being transported to an elaborately simulated place … regardless of the fantasy content”. In digital media, this implies a psychological immersion “that takes over all of our attention, our whole perceptual apparatus” (1998: 98). In Interactive Drama, this means stepping into the first-person role of the protagonist and allowing oneself to be swept up in the story. There are certainly problems with this notion (cf. Ryan 1994), since our immersion in cyberdrama, like psychological immersion in traditional Aristotelian drama, forecloses the critical distance necessary to critique the experience (something Brechtian theatre attempts to correct using the *alienation effect*). However, as cyberdrama matures as a form we may see the emergence of forms designed specifically for auto-critique, persuasion and social activism (cf. Frasca 2004).

The second aesthetic pleasure in this new medium, according to Murray, is that of agency: “Agency is the satisfying power to take meaningful action and see the results of our decisions and choices” (1998: 126). The more immersive the digital medium, the more we want to see our effects on the environment. Strangely, this not something that we tend desire from more linear media like traditional novels or films, but “[w]e expect to feel agency on the computer when we double-click on a file and see it open before us or when we enter numbers in a spreadsheet and see the totals readjust” (1998: 126). In short, our horizon of expectations is far different when sitting down to use a computer

than it is when sitting down to read a novel. When a novel solicits the participation of the reader, as it does in a *Choose Your Own Adventure* novel, we marvel at the novelty of the experience (though rarely the depth of the storyline). Conversely, when we experience a computer application that asks us *not* to participate (like early CD-ROM encyclopedias, for example) we find it an unusual occurrence, or worse yet, boring. Given these polarized extremes of our expectations of each medium—particularly the amount of agency we are allowed to exert in each of them—one can appreciate the challenge designers face when creating hybrid media which attempt to combine narrative and agency on the part of the user.

The last of the pleasures Murray identifies in interactive narrative is that of transformation. Transformation is threefold, and can refer to masquerade, multiplicity or the integration of virtual experience (personal transformation). Since digital technology lends itself to various kinds of “shape-shifting” role-play, “[i]t makes us eager for masquerade, eager to pick up the joystick and become a cowboy or a space fighter, eager to log on to the MUD and become ElfGirl or BlackDagger” (1998: 154). The ease with which one can don another persona or change one’s appearance online makes it an appealing medium for unstructured role-play (cf. Turkle 1997). Although game avatars may lack character depth, relative to a medium like theatre or film, they make up for it by their sheer variety. This is Murray’s second point regarding transformation: the multiplicity of characters, modifications, environments and plots that are possible in the virtual world are seemingly limitless. Transformation is a matter not just of donning a mask through role-play, but of donning hundreds of them, modifying them, taking them

on adventures, placing them in different scenarios, and so on. The quantity of possible experiences is just as intriguing as the quality of them in the digital realm (Murray 198: 55). Experience forms a large part of the last aspect of the enjoyment of transformation in interactive narrative. Since we internalize and integrate the experiences lived through virtual characters, there is a high probability that we ourselves will be altered by the experience. Performed stories tend to have a deeper psychological impact on us: “[e]nacted events have a transformative power that exceeds both narrated and conventionally dramatized events because we assimilate them as personal experiences” (1998: 170). In attempting to transform our environment through acts of agency we are ourselves changed in the process, thereby integrating enacted dramas into our personal narrative frameworks.

### **Situating Interactive Drama Among Media**

Interestingly, Murray’s triad of immersion, agency and transformation was not the same one that she started out with when she began gathering material for *Hamlet on the Holodeck*. In an article on interactive entertainment in *Wired* magazine in 1995, Murray listed her three key pleasures as being “immersion, rapture and agency,” where rapture is defined as the “entranced attachment to the objects in [virtual] reality” (Platt 63). This notion of rapture, which the interviewer parses as “the addictive trance that gamers fall into for hours at a time,” is very close to the concept of “flow” in which users are in “the

zone,” losing track of time and forgetting about external concerns (Csikszentmihalyi 1990; Holt 2000; Debolt 2002).

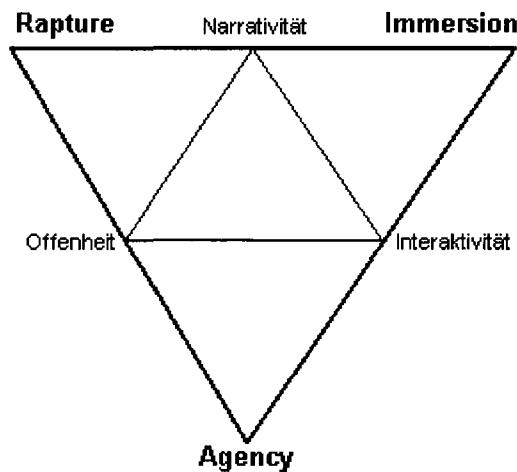


Fig. 6.1 – Julian Kücklich’s model of interactive media

I mention this shift from *rapture* to *transformation* not to merely illustrate the genealogy of Murray’s thought, but because it is this original triad of immersion, rapture and agency that gets picked up by Julian Kücklich in a paper entitled “Literary Theory and Computer Games” (2001). While much of the paper spends time rehashing the narratology vs. ludology debate—an argument over whether games are more like narratives or structured play—it does propose a novel rethinking of the relationships between immersion, agency and rapture (fig 6.1), by superimposing game-story categories of narrativity (*narrativität*), interactivity (*interaktivität*) and openness

(*Offenheit*). Kücklich asserts that one must differentiate between openness and interactivity, even though both relate to the freedom of the user within the game. “But while interactivity refers to the frequency of the player’s interactions with this world,” he explains, “openness refers to the range of different interactions offered by the game” (3). In short, interactivity is about *when* or *how* we are allowed to do things, and openness is about *what* we are allowed to do given the complete range of possibilities. The idea of openness is often tightly coupled to the probabilities, rules and sequences made available at the level of code: openness represents the number of possibilities (or combinations) allowed by the program itself. Conversely, interactivity is more tightly coupled to the level of representation, emerging when acts of agency (or selections) are made possible by gaps in the narrative or the affordances of objects within a virtual world. Both openness (the *possibilities* for action) and interactivity (the *opportunities* for action) stand in opposition to traditional, linear narrative, which uses structured scenarios to immerse or enrapture an audience. This patterned structure forecloses the endless proliferation of selection and combination, replacing it with a linear sequence of events.

Kücklich’s model defines oppositional terms, the middle terms between opposing binaries (interactivity existing between immersion and agency), as well as the contributing factors to a given element. So, for example, agency results from a combination of interactivity and openness, since the user is presented with several affordances and the interactive means to exploit them. Likewise, this framework illustrates the relationship between somewhat oppositional terms like rapture and interactivity, “since a high level of interactivity will effectively counteract ‘the entranced attachment to objects in that

reality’,” producing levels of either anxiety or boredom that dislodge the user from a state of flow (Kücklich 5). Lastly, Kücklich’s model illustrates the phenomenological results of certain combinations: “Narrativity is thus connected to openness and interactivity, respectively, by a relation that results in rapture on one hand, and immersion on the other” (5).

The major challenge of Interactive Drama is that it attempts to balance interactivity, narrativity and the open-ended sequencing of events. This distinguishes it from other story-game genres which tend to emphasize only one or two of these aspects. Kücklich compares existing genres by plotting them in the following triangular matrix:

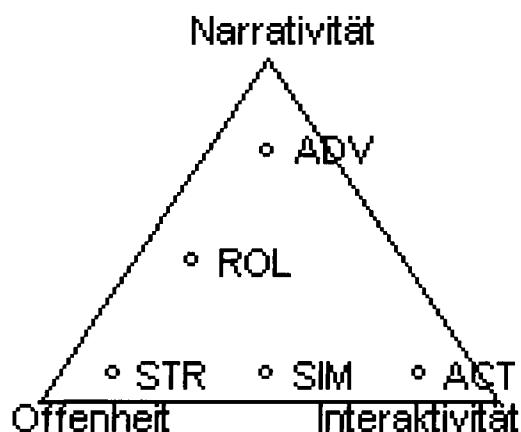


Fig 6.2 – Genre analysis based on Narrativity, Openness and Interactivity

Adventure games (ADV) like *Adventure* or *Zork* have a high degree of narrativity, but the open-endedness of the structure and the interactivity are minimal due to a dependence on the authorial plot. Action games like *Doom* or *Halo* have little narrative plot, but as FPS games they allow for a high level of interactivity; however, patterned levels, structured

goals and a linear sequence of levels curtail the openness of the overall game structure.

Strategy games like *Go* or *Tetris* are the opposite, relying on very simple rules to provide a nearly infinite set of sequences; there is rarely a prescribed order to these sequences that would constitute a traditional narrative, and the interaction is limited to turn-taking at regular intervals. Simulations like *SimCity* or *Civilization* are somewhere in-between action games and strategy games, since they provide boundary conditions to the number of possible outcomes but still maintain a relatively high degree of real-time interaction; however, beyond simple stories of expansion and conflict, they lack the kind of narrative depth one typically associates with novels, plays or short stories. Role-playing games like *Dungeons and Dragons*, *MUDs* or *MOOs* come close to balancing narrativity, openness and interactivity, since they rely on a combination of rules, storytelling, improvisation and real-time feedback. However, they do involve a certain degree of turn-taking that action-oriented games do not, and the complex rule systems that govern these games keep them from being entirely open. Role-playing games also rely on other human players to generate storylines and challenges—something very easy for us to do, but currently very difficult for a computer.

Ideally, Interactive Drama would come very close to the centre of Kücklich's triangle, since Interactive Drama attempts to balance the open-ended, flexible interactions found in video games with the controlled plot progression found in dramatic narratives. Like role-playing games, the player improvises a role and the other characters intelligently respond, but the ID experience is also designed to mimic a theatrical performance, with a plot depending on increasing tensions and conflicts leading to a

climax and resolution (Laurel 1991: 81-87). The improvisational nature of real-time character interactions is in conflict with the structural requirements of a dramatic plot composed of exposition, rising action, climax, dénouement and resolution.

Improvisational role-play is decidedly non-linear and has a multitude of possible variations, while dramatic plots are usually linear and require eventual convergence to reach a definitive resolution. The major challenge for designers is making these incompatible elements work together to create a dramatic experience that is believable, engaging and satisfying for the user. This requires a difficult balance between the freedom of interactivity, the engagement a structured plot provides, and the sense of indeterminacy that results from having many possible outcomes.

### **Overcoming the Limitations of IF: Generating Plot in ID**

The precursors of Interactive Drama, hypertexts and Interactive Fictions, are inherently limited in that tight authorial control over the narrative results in a minimization of openness and interactivity. This can cause several problems. First, although there appear to be several potential outcomes, the number of narrative combinations that are actually possible is still fairly finite. When we compare the openness of a *Choose Your Own Adventure* book or a hypertext to a typical novel, it seems like we have many more choices; but when we compare that openness to the number of games possible using a fifty-two card deck of playing cards, the possibilities seem vanishingly small. The replay value of IF is very limited, since the ambiguity of the

work and its structural combinations are quickly exhausted. Once all the puzzles have been solved, all the objects collected and all the rooms explored, the plot is revealed as a linear sequence punctuated only intermittently by user freedom; once the game is played through there is little reason to play again, since the work becomes devoid of the mystique it had before we understood its inner workings (Goetz 3).

Conversely, in a simulation game like *SimCity*, the relatively open-ended nature of the work invites repeated engagement since the structural possibilities are that much greater. Replaying the game means comparing what happened during this round of play to what happened the last time or the time before that, and through these comparisons the player gains an appreciation of multiple contingencies and full possibilities of the game (Gasperini 5). However, this combinatorial openness only exists at the expense of narrative and the transformative potential that stories provide us with. God-games like *SimCity* or *Black & White*, where the user manipulates cities or whole societies from a third-person perspective, remove the interactor from the action of the characters on the ground. This abstracted and alienated perspective is the opposite of the identification and immersion that Interactive Drama attempts to achieve. The challenge of ID lies in creating a system that has both the strong narrative and immersive elements of interactive fiction, along with the combinatorial possibilities and replay value of a simulation.

Even though Interactive Drama grows out of Interactive Fiction, it has a much stronger emphasis on plot and character interaction than IF, since it is a time-based form. The dramatic values of enactment, intensity and unity of action are primary, rather than a

concern with spatial exploration and problem solving. Puzzles, which are so central to IF, are actually destructive to the aims of ID:

Puzzles disrupt enactment, breaking immersion in the action and forcing reflection on the action as a problem to be solved. As the player thinks about the puzzle, action grinds to a halt ... All the dead ends involved in solving a puzzle introduce incidents that expand time and reduce emotion, thus disrupting intensification. (Mateus 2002: 23)

As a form of engagement, the puzzle opposes the perceptual and experiential flow required in Interactive Drama. Instead, engagement in ID comes from character interaction and an intensification of conflict over time. In interactive fiction, the release of catharsis comes from solving problems; in Interactive Drama, it is the result of vicarious experience and the purgation of emotions. As the distillation of events and experiences presented in a limited timeframe, the dramatic plot cannot stop for the extensive rumination that puzzles represent.

Another problem with hypertext and IF plots is that all of the possible narrative paths must be programmed in advance of gameplay. Since these systems do not rely on AI which can adapt in real-time to ambiguous user actions, the programmer must attempt to predict in advance what a user *might* do and author plot lines accordingly (Magerko 2006: 3). By trying to cover all the possible decisions a player might make, one ends up with exponentially more content, a situation known as “combinatorial explosion” (Adams & Rollings 199). This explosion of required content is typically handled in one of two ways for branching narratives like IF: either the choices of the interactor are constrained,

lowering the number of possible actions, or the interactor is offered many choices, with few of them actually affecting the story outcome. Neither of these options is particularly desirable if one actually wants to give the user an interactive, dramatic experience in which they experience a strong sense of agency.

In branching narratives like hypertext and IF, the path the story takes is determined by the periodic choices of the user. This is both the major strength and a major weakness of these forms. Choices provide a very concrete feeling of agency: you click a link and new content becomes available, creating a one-to-one relationship between cause and effect. However, this strict connection between acts of agency and the immediate revealing of content creates problems when one has to deal with increasing narrative complexity, ambiguous user inputs, and states within the game which require fine gradations (like representing character emotions) that are not either off or on. By loosely coupling choice and content, the story-game becomes much less deterministic, and the one-to-one relationship between cause and (instantaneous) effect is broken; instead, the results of actions change several states distributed throughout the system, and the next narrative step is determined probabilistically rather than being purely sequential. This means that narrative sections can be “mixed in” at any point, ambiguous input from users is dealt with in a graceful way, and one can use states to indicate a dynamic range of character attributes. In this situation, the “author for a digital narrative can be viewed as creating a *story space* with her authored content, which describes the space of possible story experiences for the player that are explicitly detached from player actions / choices” (Magerko 2006: 4; italics his). That is, the system is no longer merely be *reactive* to user

choice, but rather can draw on a repository of possible story experiences to *proactively generate* a challenging plot scenario for the player.

In this light, we can begin to appreciate what a radical break from interactive fiction Laurel's initial call for an "interactive fantasy system" actually was. By proposing a project which "orchestrates system-controlled events and characters so as to move the action forward" (1986: 126), Laurel is discussing an ID engine that is inherently generative—actively combining the material elements of the mimesis so that they conspire to produce dramatic outcomes. Michael Mateus, one of the developers of *Façade* (2005), describes a generative system as one which is comprised of an AI engine which has access to large number of story units and character responses: "AI-based artworks are thus *generative*; computational processes provide the combinatoric machinery necessary to select terms out of the fields of potential terms (associative fields) provided by the system" (Mateus 134; italics in original). The AI selects appropriate replies and plot sequences from a database of all possible responses, thereby reacting to user input in a lifelike and dramatic way. This database of all possible experiences is exactly what Magerko is referring to when he discusses the "story space" created by the author, a repository which is only loosely coupled to user actions.

The generative production of character actions, plots and environmental changes is a fairly significant shift from games—like *Adventure*—with static assets, branching plots and strict causality; the environment and scenes are meant to dynamically reconfigure themselves in order for the plot to progress along a certain trajectory. This shift from static to generative content means that a game of this type is much more

process intensive, relying on real-time monitoring of the game world and combinatorial procedures to construct the next scene “on the fly”. This further implies that the way video games have traditionally worked—serially accessing static contents from mass storage and presenting them to the user sequentially—may be changing. The combinatory explosion of content that occurs in IF and hypertext is happening in other genres as well, as video games become more complex and allow more interactivity with the user: “The price of developing a game for the next-generation of systems is going to skyrocket. It's going to take warehouses full of artists and level designers to create all the content for every title” (Kosak 1). The concept of Interactive Drama may be a precursor to other types of complex story games that procedurally generate or assemble content in real time.

Generative systems that combine material elements in real time rely on performative interaction with the user, but with a much greater degree of interactivity than IF. Since generative ID actually reconfigures its storyworld in time with user choices, the mode of interaction is much more performative than in IF. Jin Hyun Kim and Uwe Seifert, from the Institute of Musicology at the University of Cologne, note that human collaboration with complex digital systems results in a situation where ‘expressive meaning’ [of behavior] is not considered as completely pre-existent before an act of interaction, but as an effect generated in terms of agency. In this way, the idea of artist as intending subject of artistic actions and the concept of closed artwork are dissolved. Rather, aesthetic experience connected to presence

taking place in an artistic interaction becomes the focus of a framework towards an aesthetics of interactive performativity. (Kim & Seifert 235)

This means that the interactor or programmer is not the “creator” of the work; nor is the meaning of the artwork knowable ahead of time. Further, agency is distributed throughout the system itself, with the interactor and machine periodically trading off the roles of subjective actor and object, a situation similar to the free play of roles in improvisational drama or jazz music. The final artistic experience that results is not the sole product of either agent individually, but rather the generative result of their performative interaction, or mutual acts of constrained agency.

However, the playwright and the ID system are still ultimately responsible for driving the plot to a dramatic conclusion. This emphasis comes across in Peter Weyrauch’s discussion of plot:

My definition: *Interactive Drama* (ID) is the presentation by computers of rich, highly interactive worlds, which are inhabited by dynamic and complex characters, and also inhabited by a User, whose experience is shaped in this world by a dramatic destiny. The job of an interactive drama system is to subtly guide the experience of the User, so that she retains her freedom while fulfilling her destiny. (1997: 2)

The reference to “dramatic destiny” may seem somewhat strange, but it seems less so if we consider the Greek concept of tragedy where the sequence of events is specified ahead of time by the gods, and rewards and punishments are inevitable given the preceding action. In the case of ID, the author and system play the role of the gods, guiding the plot

so that it conforms to a particular structure and produces an inevitable conclusion.

Although the user gains the satisfaction of taking meaningful action and seeing the results of those choices, the authority over the shape of the plot and its ultimate conclusion still rests in the hands of the author (Laurel 1991: 69-70).

Since the creation of a dramatic work is the construction of an aesthetic experience that constitutes an organic unity, the randomness generated by the interactor must be “tamed by design” (Ryan 1997: 683). Echoing Weyrauch’s notion of dramatic destiny, Marie-Laure Ryan asks, “how can the interactor control his actions, while [her] destiny is itself controlled by a god-like authority of a storyteller? The interactor lives the fictional world from the perspective of life, as a continuous present, and his actions are oriented toward an unknown future, while the storyteller creates the story from a perspective external to the temporal sequence” (1997: 682). The external, omniscient perspective of the author or playwright permits an understanding of the overall importance of structure in relation to the whole, and of causality to the eventual outcome of the plot. This viewpoint is able to observe things retrospectively and entirely, whereas the interactor exists in a continuous present of prospective actions. While the dominance of the playwright in creating structure may seem just as constraining as the branching structures of IF, the use of a dramatic script “limits the freedom of the user, but it also maximizes the chances of a pleasurable performance” (Ryan 1997: 681). Without this purposeful structuring, the intensification of conflict and eventual emotional catharsis remains elusive.

Different systems have been proposed to manage the challenging task of providing a plot that is unified, increases in intensity and allows user agency. In Laurel's conception of a drama system, she proposes an expert system called the PLAYWRIGHT. The PLAYWRIGHT suggests various plot scenarios to all the character AI's within the current scene in order to determine which incident should occur next. The characters report back to the PLAYWRIGHT what they would do given each scenario and the system then evaluates these actions to see if they are believable, consistent, plot intensifying, and so on. The most acceptable incident is chosen, or the system can choose to fabricate a scenario of its own in order to move the plot forward. As an expert system which is capable of adapting over time, the PLAYWRIGHT can also modify character behaviours, strategies and scenarios as it gradually learns from repeated user feedback (Laurel 1986: 187).

### **ID Storytelling Systems**

Based on the basic PLAYWRIGHT model, several researchers have attempted to create generative software architectures for Interactive Drama. Search-based Drama Management (SBDM) was first proposed by Bates (1992) and developed by Weyhrauch as part of his *MOE* Interactive Drama system (1997). In a search-based system, the author sets an evaluation function that ranks possible storylines; these functions define the "goal" of the story, which can range from emotional intensity, to creating more obstacles for the user, to driving the user to a particular location within the storyworld.

*MOE*'s Drama Manager—equivalent to the PLAYWRIGHT in Laurel's system—samples the state of the storyworld and projects a series of possible futures to see how they would match up to the evaluation function (Weyhrauch 2). Drawing on a series of plot points and drama manager actions, the system reconfigures the storyworld to maximize the evaluation function.

Weyhrauch's system is based on the application of game-theory, which models strategic situations and attempts to determine maximum utility for participants, in order to structure user affordances and constraints within the storyworld. A USER-MOVE is any user action that moves the story along towards a particular goal. Conversely, MOE-MOVES are actions undertaken by the system, designed to keep the user within the boundaries of the story or encourage certain user behaviors. The system searches through all possible MOE-MOVES to find the best fit with the author's evaluation function and instantiates these moves in the storyworld. On the whole, the system is somewhat like a game of chess, where moves are performed by each player in the interest of particular goals. However, with *MOE*, the user is not playing against another agent, but rather against the entire environment: the system dynamically reconfigures itself in response to the last USER-MOVE and guides the overall story towards specific outcomes (Weyhrauch 9-12). SBDM systems like Weyhrauch's are suitable for open-ended story structures, but only at the expense of the tight, author-controlled plots required for true interactive drama. However, *MOE* is noteworthy in proposing an adversarial, game-theory oriented model of plot generation, since conflict is the essence of classical drama. By setting the storyworld and the user in opposition to each other, and having each one

take turns to reach their separate goals, Weyhrauch provides an intriguing model of how dramatic conflict can be generated and sustained in a virtual world.

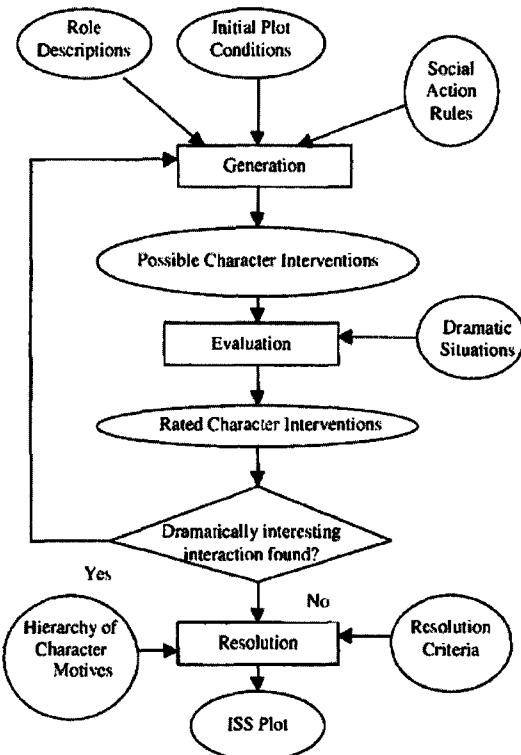


Fig 6.3 – Flow chart of Plot Manager operations in *DEFACUTO* (Sgouros 1998)

A similar Plot Manager was proposed by Sgouros (1999), as part of a system called *DEFACUTO*. Sgouros' system pays specific attention to the dramatic significance of character actions. The behavior of the cast is based on their roles, their personal goals and their social interactions. Specifically, the system “bases the resolution of the story on the importance and consistency of the motives of the participating characters” (Sgouros 30). The system is composed of Generation, Evaluation and Resolution units, which

work together to maximize the dramatic significance of events and construct the material elements necessary for their actualization in the storyworld (fig 6.3). However, in contrast to other systems, there is no directly authored plot constructed before runtime. Authorship is composed of casting characters, setting their goals and defining the scenario on which the interactions will be based on order to create a particular experience. The system is comparable to theatrical *Commedia del'arte*, where stock characters and particular scenarios are defined ahead of time, but the actual interactions are improvised.

Sgouros' system provides the opportunity for making narratives that are *emergent* from the AI behavior of the characters, rather than the generative, dynamic reconfiguration of narrative elements. "Emergent narrative" is a term used by Ruth Aylett to refer to "the creation of story-like experiences in real-time using interaction between intelligent synthetic characters as a generative mechanism" (2007: 117). It uses creates narrative experiences based on the bottom-up interactions of characters in order to create an emergent system where relatively simple local decisions lead to complex behavior. Human authors are still needed, but these authors construct environments more so than stories, specifying a virtual world of characters, along with their goals, motivations, actions and emotions, rather than specific plot segments (Kreigel & Aylett 2008: 2). Emergent narrative is obviously a step away from the tight authorial control that typically defines ID systems according to Laurel and Ryan, but it also opens up the field to systems of story-generation that are remarkably open-ended. While this approach

possibly provides a more interactive experience, it is limited in terms of complex artistic expression.

Another major approach has been that of a plan- or task-based management of character actions and narratives. Michael Young, of the Liquid Narrative Group at North Carolina State University, proposed a plan-based narrative architecture, where the system attempts to model user strategies and alter the narrative accordingly (Young 1999; 2001). Young's system, which would eventually be called *MIMESIS*, attempts to model the causal structures between user goals, their preconditions and their effects within the storyworld. Based on what the system believes the user is attempting to achieve, the system can then introduce characters, challenges and subgoals into the storyworld as challenges to the user. The system generates a mathematical model of all possible plans and is able to search through them, generatively linking them together as required to create a challenging story for the user (1999: 3). Plans contain a rich causal structure and contain causal links necessary for constructing a plot as a series of incremental steps. The system can either choose the next sequence of action or dynamically modify existing plan models to accommodate new user actions.

With the development of *MIMESIS* in 2001, Young's group adapted the plan-engine into a system called the Mimesis Controller (MC). The Controller was linked to an *Unreal Tournament* server, originally designed for First-Person Shooter games, which generated the 3D characters and content necessary to maintain the representation. The Controller generates all possible sets of actions than can be taken by characters as a series of hierarchical task networks (HTNs) which define contain tasks, subtasks and the

network of dependencies required for their fulfillment in the storyworld. “The role of the Controller is to serve as a centralized intelligent source for the design and (high-level) control of a coherent, compelling narrative-based interaction over time,” remarks Young, whereas the *Unreal* server provides the processing, monitoring and control of the virtual environment (2001: 2). A software scripting language, known as UnrealScript, provides instructions for the generation of characters, environments and situations. This script is generated based on the requirements defined by the Controller, where the majority of the narrative-generating AI resides.

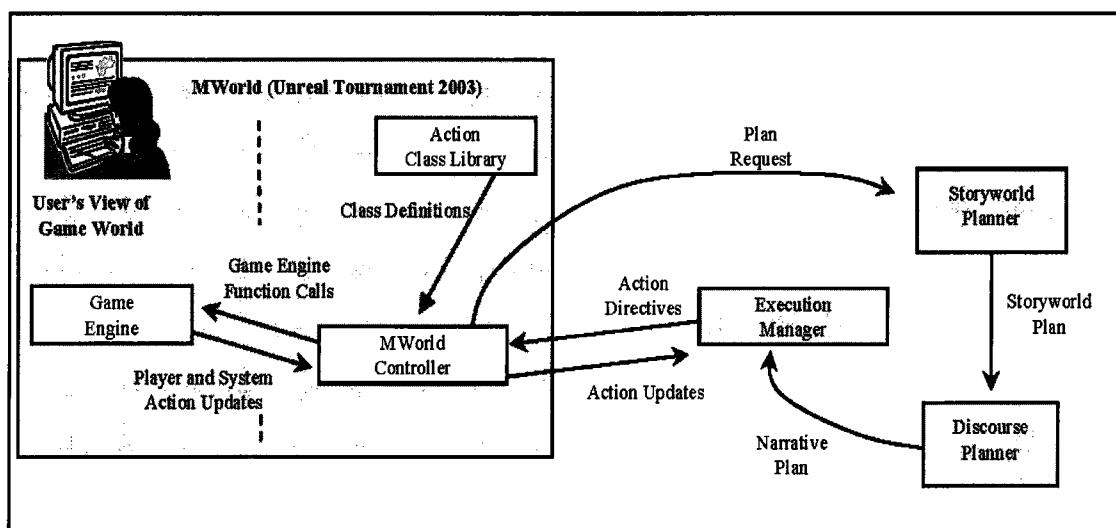


Fig 6.4 – Architecture and components of the *MIMESIS* System (Young et al. 2005)

*MIMESIS* shifts the emphasis of search-based plot generation onto the aims and goals of the characters, rather than emphasizing plot development *per se*. In this sense,

*MIMESIS* is part-way between the plot-oriented emphasis of Weyhrauch's *MOE* and the character-oriented emphasis of Sgurous' *DEFACTO*. The system allows for open-ended storytelling, like both of these systems, but also lacks strong authorial control. What it does include, though, is an open-ended software architecture. The use of the open-source *Unreal* engine provides the opportunity for after-market modification, and also cuts development time so programmers can concentrate on the AI. The separation of the AI-based Mimesis Controller and the representation-generating *Unreal* server also means that it is relatively easy to adapt the system to any representation-generating game engine. The modular architecture of the system encourages its reuse by other developers.

The major drawbacks to the system are related to the narratives that can be generated by the system, and the AI assumptions entailed by the inclusion of a hierarchical-task network. As mentioned previously, the use of these types of plan-based plots that focus on user goals instead of plot intensification removes the tight control of the author that these systems typically have. If one is trying to create a system that is narratively open-ended and relies on simple plot units, this approach can be seen as a good thing. However, by encouraging a maximum adaptability to user agency, complex and engaging narratives are much less likely to occur. When agency is privileged over narrative, the system becomes much more like a video game than a system for telling sophisticated stories which follow a dramatic plot arc. Although the separation of the AI system from the graphics engine bestows several advantages, the reliance of the Controller on hierarchical task networks, a model of problem solving taken from artificial intelligence, is somewhat problematic. Hierarchical Task Networks are one system

among many which attempt to describe how cognition and machine planning might work; as such, the success or failure of *MIMESIS* is inextricably linked to the theoretical strength of HTNs as a model of cognitive planning. As studies in AI advance, it may be the case that HTNs emerge as neither a complete nor accurate model of how planning agents actually occurs, in effect hindering the advancement of the *MIMESIS* system.

The *OPIATE* storytelling engine, designed by Chris Fairclough (2004), uses a much more literary approach to the creation of interactive narratives. The system is based on the narrative theories of Vladimir Propp, who examined the structural grammars of myths and folktales (1968). Propp's work is an encyclopedic examination of the archetypal characters, functions and plot elements that occur most commonly in heroic literature, and how these fit together to form a nearly infinite variety of stories. In *OPIATE*, Propp's structural elements of myth become logical rules used to guide choices and create scenes by the system's Director (Fairclough & Cunningham 2).

Since many of Propp's characters are already defined by their functions within a given story—hero, villain, helper or sidekick, for example—the attitudes of these characters towards the protagonist are already built into the system, and can be changed based on user actions. Similarly, since Propp's system of analysis is already a database of plot units, it is easily adapted to an interactive system that depends on finding and linking appropriate sequences of events. Various subplots are built into the system to create a complex plot structure, and different roles can be played by different characters each time to increase variability (Fairclough & Cummingham 3-4). The Director system creates situations by grouping character and plot functions and comparing these groups to

the current situation in the storyworld. If no combination of characters or plot can move the story forward in a desirable way, the system can combine functions to create a more appropriate scenario. Characters have rudimentary speech capabilities and can talk with either the user or each other, describing what they have witnessed so far.

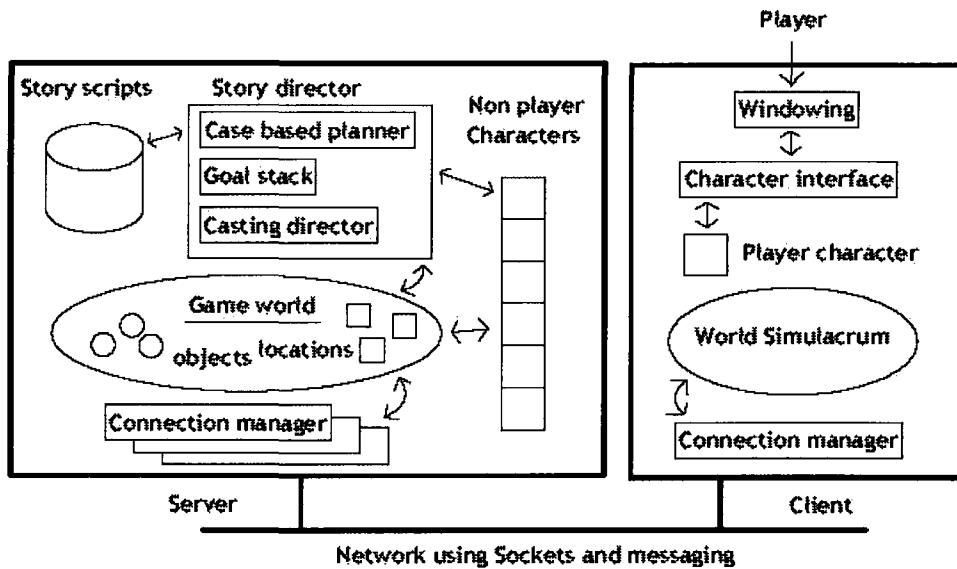


Fig. 6.5 – System architecture of *OPIATE* (Fairclough & Cunningham 2003)

The Director uses case-based reasoning to control the plot and the construction of the scenarios. It takes into account what has already happened, the current state of characters in the world and their attitudes towards the protagonist (Fairclough & Cunningham 2). It is able to solve new problems based on past experience, using a database of Proppian character functions and plots. The system combines these elements to create new scenarios, and if necessary creates new functions by combining the existing ones. The *OPIATE* system of case-based reasoning and problem solving can be

understood as a narrative expert system. The narrative functions of characters and plotlines that Propp, and several other formalists and structuralists, delineated in the early to mid-twentieth century are a basic structural grammar of storytelling. However, they also represent the production of a particular kind of metadata (or schema-based data) that can help in the recognition, analysis and combinatorics of storytelling. We tend not to think of literary analysis in this way, yet the breaking down of a story into its structural components, according to a particular schema, is exactly what formalist and structuralist analysis tends to do. While *OPIATE* does not allow for very complex stories to be told, limiting itself to simple adventure stories, its rule-based-system of plot functions and the use of case-based reasoning make it fascinating system, worthy of further development. Most intriguing, perhaps, is that it brings to light the connection between the structural functions of characters and metadata, stated above. Metadata, which forms an integral part of Web 2.0 and computer-aided discourse analysis, could be used to analyze and tag existing stories for their plot and character functions. Given an advanced case-based expert system, these stories and their metadata could be used as the raw material for the production of new stories never before seen.

*IDTension*, a system developed by Nicolas Szilas (2003), combines an AI system which models possible user actions like MOE or MIMESIS, with structuralist narrative models similar to OPIATE. Instead of Propp's studies of folktales, *IDTension* bases its plot sequences on the narratological theories of Claude Bremond and Tzvetan Todorov (Szilas et al. 39). Bremond's model is character-centered, and focuses on the beliefs,

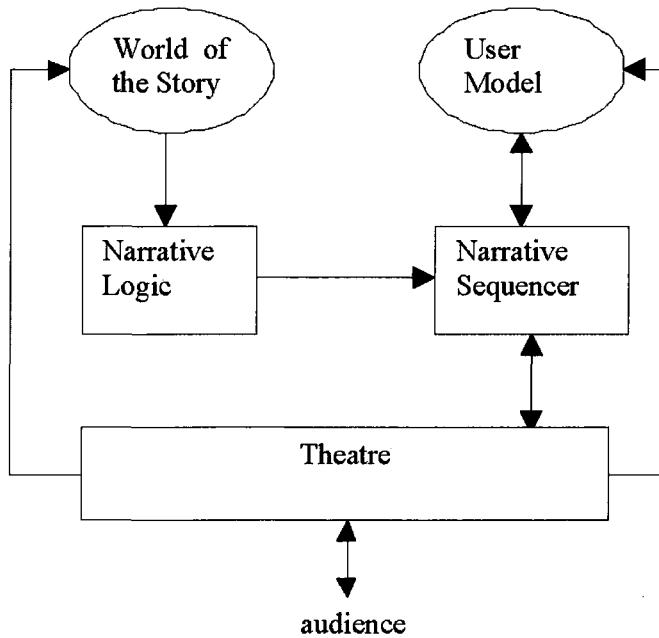


Fig. 6.6 – General Architecture of *IDTension* (Szilas 2003)

motivations and goals of agents, as well how character actions affect others within a given text (1973). Todorov's work, particularly in "The Grammar of Narrative" (1977), asserts that narrative follows a structure similar to a sentence, with a noun, verb and object, as well as containing adjectives and adverbs. Combined, these two narratological approaches allow for a modeling of user actions and their effects on characters, as well as a simple structural grammar for plots. A similar approach informs Chris Crawford's work on *STORYTRON* (2004), which uses a subject-verb-object model for creating surprisingly interactive narratives. Partially due to its basis in narratology, the *IDTension* system is much more author-oriented than other systems, and requires extensive hand-coding. However, it also may allow for complex plots to be created that

go beyond the adventure genre (Szilas et al. 41-43). The system illustrates the development of ID systems beyond *OPIATE* that combine complex AI with structuralist literary analysis, underscoring the importance of narratology to the creation of interactive narratives.

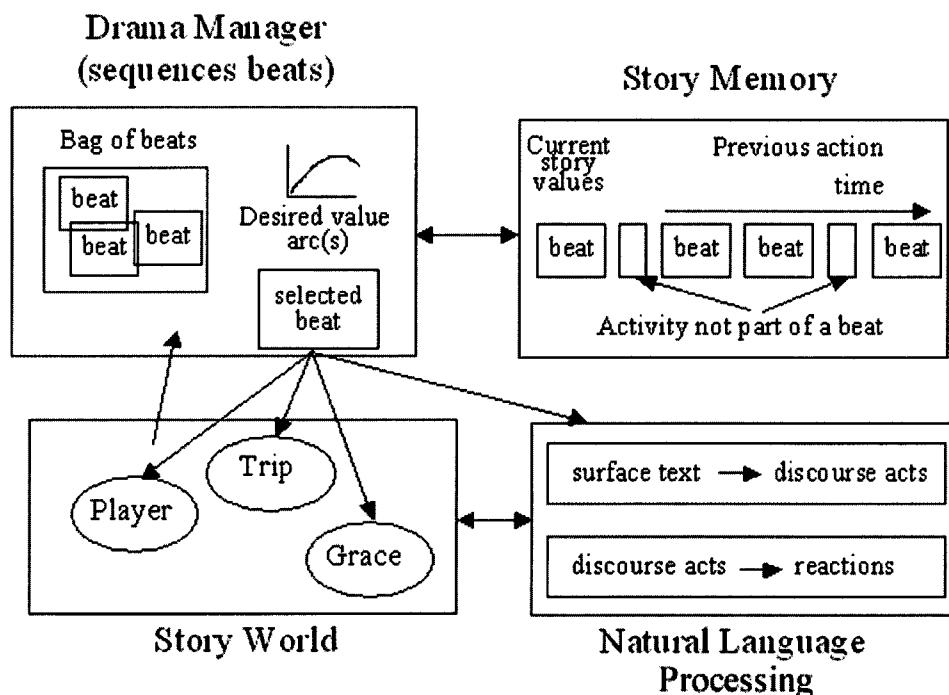


Fig. 6.7 – *Façade* interactive drama architecture (Mateus & Stern 2003)

*Façade*, developed by Michael Mateus and Andrew Stern as part of the Oz Project headed up by Joseph Bates at Carnegie Mellon University, is perhaps one of the most advanced examples of ID currently. The Oz Project was ostensibly an interactive drama research group, although many of their early prototypes bear a stronger resemblance to interactive fiction. The group began in 1987 and released its first

technical papers in 1989; *Façade* was its last project, released to the public in 2005 (Mateus 2002: 6). It is loosely based on Edward Albee's *Who's Afraid of Virginia Woolf?* and the interactor plays the role of an old friend visiting Grace and Trip, whose marriage is in danger of falling apart. The system uses a natural-language interpreter, like those in IF, so that the interactor can speak to these two believable agents, who react accordingly (Mateus & Stern 2003: 1-2). The story and discovering the history of these characters is the main goal of the work, rather than specifically saving the couple's marriage.

The *Façade* system tries to determine the interactor's feelings towards each character in the story, as well as Grace and Trip's affinity towards the protagonist. In this sense it is similar to Young's *MIMESIS*. However, the Drama Manager system in *Façade* is considerably different than other ID systems, drawing as it does on dramatic concepts of beats and motivations. As Nelson and Mateus remark:

Beats are the smallest unit of change in dramatic value, where dramatic values are character and story attributes such as love, trust, and tension; at each point in the story, a beat-based drama manager selects one of the available beat-level actions. This style of management makes them particularly suited to tight story structures, where ideally all the activity in the story world contributes to the story. (2005: 2)

Each of these beats contains a common narrative goal, and each one is associated with preconditions, priorities, weights, and a set of story values that change based on the completion of the beat (Mateus & Stern 2005: 5-6). For example, the Drama Manager chooses a set of possible beats based on narrative preconditions, which are prioritized

according to their necessity to the immediate plot. They are then weighted according to the current topics of conversation and narrative flow, and one is selected based on these criteria. Once the beat completes, story values such as character affinity and dramatic tension are output and the process begins again (Mateus & Stern 2005: 5). If none of the beats are deemed acceptable, the Drama Manager can invoke a “global mix-in” which brings in a beat and narrative actions designed to put the story back on track. These mix-ins act as constraints on user agency that bring the story back to the storyline and ensure that important narrative elements are not missed.

Each of the beats in *Façade* is composed of a set of Joint Dialogue Behaviors (JDBs), each comprising one to five lines of dialogue between Grace and Trip. A beat typically contains ten to one hundred of these JDBs, which are used as annotation points in the narrative. If a beat is aborted because of user interaction or failure to reach a specific goal, the system can start another beat, complete it, then return to the JDB where it left off, in order to finish the previous beat. A short JDB may be mixed in to connect the dialogue between the two beats in order to ensure a smooth narrative flow. Each beat itself is structured around beat goals, representing what the main characters hope to achieve and how the plot will be affected. To aid in joining beats together, “[a] beat typically has one transition-in goal which presents the introduction to the topic of the current beat (possibly connecting it with the previous topic), several body goals which drive the content of the beat and a transition-out goal which ends the beat, often communicating how the user has influenced the story in this beat” (Mateus & Stern 2005: 3). In short, beats are organized around particular topics and goals which attempt to

ensure a smooth flow of dialogue and plot development, respectively. The textual size of beats and JBLs relative to most IF and ID systems ensures that they can be introduced into the narrative without a huge shift in tone or topicality. In this way, the agency of the interactor is not concentrated on specific points of agency as it is in a branching narrative, but rather is distributed throughout the narrative system, quantified through dynamic changes in transition goals, affinities and dramatic tensions.



Fig. 6.8 – Characters and text interface in *Façade* (Mateus & Stern 2003)

Based on its narrative flexibility and capability for real-time improvisation, *Façade* represents the closest researchers have ever come to realizing the “Interactive Fantasy System” of Laurel or Murray’s “Holodeck”. Although the system is still quite

far from being a 3-D immersive experience, or something comparable to a dramatic experience with real human actors, what sets *Façade* apart from similar ID systems is that one actually starts to interact with Grace and Trip as if they were real people. After one has poked and prodded the system (as one does in IF) to see how intelligent the interface *really* is, one actually starts asking them questions and engaging in discussions with them. At a certain point the user does care whether the marriage falls apart or if there is a way to save it. In essence, the user starts to empathize with these characters as one would characters in any other medium, whether it is film, theatre or the traditional novel. Technical achievements aside, this desire to empathize with the characters of a representation marks *Façade* as perhaps the first truly successful interactive drama.

### **Characters and User Perspective**

One of the major shortcomings of early interactive fiction was the fact that the characters were often one-dimensional caricatures, lacking in any real personality. As Buckles observed in her analysis of *Adventure*, “[t]he underlying source of the narrative weaknesses in *Adventure* is its lack of meaning. The characters the reader encounters in the fictional underworld have no significance other than to pose a puzzle for the reader” (123). Buckles goes on to declare that archetypal, narratological and psychological features which normally define characters in other genres, provoking our interest in them, are simply absent in IF: “The reader has little emotional involvement with the characters because they, in turn, do not represent any emotional or spiritual facets of human

existence” (124). As a certain kind of epistemological machine that is geared towards exploration rather than complex human interaction, it is easy to see why IF might not contain realistic characters. Others have suggested that video games on the whole have *never* prioritized character development (cf. Crawford 2004), and it may be that *Adventure* is not an exceptional case, but rather an early example of a situation that has persisted to the present day. While technology and the field of artificial intelligence has advanced rapidly since the 1970s, the epistemology and design priorities behind the majority of video games often appears to have apparently changed very little. Interactive drama seeks to change this set of affairs by creating believable characters that rival those of other narrative forms.

In an essay entitled, “Can There Be a Form Between a Game and a Story?” (2004), Ken Perlin observes that in narrative media like film, theatre and the novel, the audience consents to emotional manipulation and the suspension of disbelief in order to see the world from the perspective of a particular character. This process of identification and transference “can only be effected in such focused and powerful way because we agree (when we start watching) to give over our choice making power, and to passively allow the narrative to lead us where it will” (12). For Perlin, the main element that differentiates stories and games currently is their media-specific interpretations of agency. In linear narrative, we identify with a character in order to experience her agency, and compare the character’s choices and actions to our own. In action-oriented games, even though we may experience a character through an avatar, we only experience our own agency, through the immediacy of the effects of our actions on the

virtual world: “The traditional goal of a linear narrative is to take you on a vicarious emotional journey, whereas the traditional goal of a game is to provide you with a succession of active challenges to master” (Perlin 15). While this may be overstating the case somewhat, Perlin’s point on the changing nature of agency across genres is noteworthy. If an interactive form like ID is to develop into a middle ground between linear storytelling and non-linear gaming, Perlin believes it will be the result of better characters with whom the audience can readily identify. This also means better synthetic actors, which would possess a wide range of emotional expressions and dynamic interactions (Perlin 17). The ability to identify with characters—a secondary concern in IF—is central to ID. The first-person perspective of the interactive drama mirrors that of a game, but it attempts to actualize the processes of transference found in narrative media, by producing complex characters that we actually want to identify with.

Narrative point-of-view also aids in the audience’s psychological identification with characters—specifically, the protagonist. In IF, stories are told in the second person: “You are in a maze of twisty little passages, all alike” (*Adventure* 1975-6). The user is always one step removed from the action, since the story is told to us by a narrator/interpreter, who mediates our experience of the environment and the effects of our agency upon it: “The grate is now unlocked” (*Adventure* 1975-6). In contrast, ID situates the user as a first-person protagonist within the story, and interactions are made directly with the environment and other characters. This creates a greater level of immersion within the narrative, since active role-playing enhances the identification with one’s own character. We inhabit the character’s first-person perspective, but this

viewpoint also enhances our identification with other characters as well, since we see and can interact with them in real time. The lack of overt mediation in the form of second-person perspective and a storytelling interpreter is akin to traditional performance, where a lack of technological mediation creates a sense of immediacy and a more intimate relationship with the characters.

One should be clear, however, that the situation is more complex than just first-person identification. The main audience of this dramatic performance is also the interactor herself. “Even though the interactor is an agent, and in this sense a co-producer of the plot, he or she is above all the beneficiary of the performance,” remarks Ryan. “The entertainment value of the experience depends on how the interactor relates to her avatar: will she be like an actor playing a role, innerly distanciated from her character and simulating emotions she does not really have, or will she experience her character in the first-person mode, actually feeling the love, hate, fears, and hopes that motivate the character’s behavior, or the exhilaration, triumph, pride, melancholy, guilt, or despair that may result from her actions?” (Ryan 2002: 592). Possessing both first-person and third-person perspectives means that we identify with the psychological and emotion states of the protagonist and other characters, while at the same time being aware of our role as an external observer.

In interactive fiction, the textual command line interface (:) invites us to play the role of co-author or explorer; in interactive drama, the graphical user interface (GUI) invites us to perform inside a representation and experience the results of our agency. It makes sense that the point of view in IF is second-person, since the interface is an

invitation to write or explore; likewise, the first-person perspective of ID is appropriate, since the GUI invites doing and experiencing. Part of Laurel's point in *Computers as Theatre* is that performing actions within the representational frame of the GUI is like a performance on a theatrical stage (Laurel 1991: 17). For interactive drama system, this means that the "application would not consist in an interface *with* narrative, but in an interface *as narrative*" (Szilas & Rety 2004: 25). Or as Laurel remarks, "*representation is all there is*" (Laurel 1991: 19; italics hers). Building an ID system means not only creating a believable mise-en-scène and characters, but also designing the system itself as a narrative so that the user feels like she is actively participating within a representation, from a first-person perspective.

### **Expressive AI**

The creation of an engaging interactive drama is directly linked to the degree of believability it provides for an audience. As Riedl and Young observe:

For storytelling to be successful – to have an emotional or educational impact on the audience – a story must (a) be understandable and (b) believable in the sense that the audience is willing to suspend their disbelief. We argue that one property of story that affects both is *character believability*. Character believability refers to the numerous elements that allow a character to achieve the "illusion of life," including but limited to personality, emotion, intentionality, and physiology and physiological movement. (2005: 279)

In linear representational media, the creation of believable characters is a relatively simple affair—they are merely written or acted into existence as imitations of real human behaviors. Since these media are not interactive, there is never an opportunity to discuss politics with Madame Bovary or perform other interrogations that go beyond the boundaries of the written text. We tend not to doubt these storyworlds or their characters, since we have no reason to: the seamlessness of the representation does not allow us to interact and therefore test the limits of the mimesis. However, in interactive media, one is automatically presented with this ability, since we are granted the agency to make specific choices. This necessitates the use of AI in order to accommodate and adapt to acts of user agency which might disrupt the narrative and our suspension of disbelief (or sense of immersion).

The question is not whether or not to use AI, but rather, what kind of AI to use. In an article entitled “An Oz–Centric Review of Interactive Drama and Believable Agents” (1997), *Façade*’s Michael Mateas outlines traditional AI approaches and the solution proposed by those at Carnegie Mellon’s Oz Project. Mateus observes that traditional, institutional AI goals differ from the objective of “believability” that AI-artworks attempt to achieve. The two major traditional approaches, classical AI and behavioral AI, have far different perspectives on what AI should achieve. Classical AI is typically stereotyped as attempting to build “brains in vats,” whereas behavioral AI is stereotyped as attempting to create specialized “insects in environments”:

Classical AI concerns itself with building mind, not complete agents. This research program consists of isolating various capabilities of mind (e.g. reasoning,

memory, language use, etc.), and building theories and systems to implement a capability in isolation. While it is believed that these disembodied pieces of mind will be put together to form a complete “person,” this integration is deferred to the future. Behavioral AI seeks to build complete agents (rather than minds or pieces of minds) that can operate in complex environments ... Where classical AI attempts to build mental components that duplicate the capabilities of high-level human reasoning in abstract, simplified environments, behavioral AI attempts to build systems with the savvy of insects (or ambitiously, small mammals) in complex environments. (Mateus 1997: 301)

So while behavioral systems may be able to navigate and make decisions about what to do in a particular environment (one might think of the Mars Rover or the Roomba robotic vacuum as examples) they do not possess a deep knowledge capability, able to draw conclusions based on available data in a particular domain (like a web-based expert which is capable of recommending books based on previous purchases). These traditional approaches share a notion of goal-oriented competence: “For classical AI, this has often meant competence at complex reasoning and problem solving. For behavioral AI, this has often meant moving around in complex environments without getting stepped on, falling off a ledge, or stuck behind obstacles” (Mateus 1997: 302).

However, when embedding AI agents in a space of representation like *Façade*, the criteria is not necessarily competence, but believability. “If classical AI builds brains in vats, and interactionist AI builds embodied insects, then expressive AI builds *cultural artifacts*,” remarks Mateus (2002: 63; italics in original). Audience reception determines

whether or not an AI agent seems believable—there is not necessarily a set of objective measures to determine if an agent is “competent” or not. This is the “ELIZA effect” referred to by Ryan (1997: 695) and discussed in the previous chapter, which encourages audience members to identify and interact with a simple AI, despite the agent having a limited range of knowledge and behaviours. The goal of creating believable characters was central to the Oz Project from the beginning (Bates 1992), and it is a topic Joseph Bates, lead researcher of the project, makes clear in “The Role of Emotion in Believable Agents”:

[I]t is our view that believability will not arise from copying reality. Artists use reality in the service of realism, for example by carefully studying nature, but they do not elevate it above their fundamental goal. Mimicking reality is a method, to be used when but only when appropriate, to convey a strong subjective sense of realism. It is art which must lead the charge here. (1994: 6)

Bates is advocating artistic representation, rather than a scientific or objective replication, of actual cognitive processes. Attempting to convey the illusion of life through a subjective sense of realism (Bates 1994: 6), alternative or expressive AI is quite different than trying to achieve genuine intelligence. It is a fundamental break from the ways that we typically think of AI, yet it is almost identical to the Turing Test. According to the Turing Test, a machine is intelligent if its behavior, mediated by representation, leads you to believe that it is intelligent—that is, indistinguishable from a human being. The approach to the Turing Test undertaken by classical and expressive AI are different in emphasis: classical AI stresses *intelligence* as a criterion of AI competence, whereas

expressive AI emphasizes the *representation* of intelligence as its criterion. In this way, expressive AI does not have to synthesize human intelligence across a variety of knowledge domains, but only has to create the *appearance* of intelligence in the narrow band of knowledges required to support a specific representation. We would not expect the characters in *Hamlet* to be able to discuss astrophysics with us, so why would we expect the same of characters in interactive drama? Expressive AI sets boundaries on the kinds of knowledge and degree of intelligence required to support story-based representations. As Ryan remarks, “[c]haracters will not be valued for their credibility as possible human beings but for their ability to entertain” (Ryan 1997: 695).

Despite a dependence on the “*ELIZA* effect” to encourage believability on the part of users, expressive AIs are significantly different from chatterbots like *ELIZA*. First, expressive AI’s depend on more than just conversation, since they are embodied constructs that use body language and facial expression to convey emotions. Furthermore, they do not just react to units of conversation as chatterbots do, but can initialize conversations with users, or with each other. Second, they are designed not to fool users into believing they are full-fledged human beings, but rather to simulate personalities and emotions. Lastly, expressive agents have long-term motivations and goals, which typical chatterbots do not have (Mateus 1997: 16). In short, chatterbots tend to be useful for open-ended structures and text-based representations, whereas expressive agents are more suited to structured representations involving closed environments and clearly defined plots.

As an interdisciplinary practice, the goals of expressive AI differ a great deal from either classical AI or behavioural AI. As Mateus observes, the two major research agendas of expressive AI are:

- 1) *exploring the expressive possibilities of AI architectures* - posing and answering AI research questions that wouldn't be raised unless doing AI research in the context of an art practice, and
- 2) *pushing the boundaries of the conceivable and possible in art* – creating artwork that would be impossible to conceive of or build unless making art in the context of an AI research practice. (2002: 2)

This intertwining of art and AI hinges on the use and understanding of representation as a mediator between these two sets of practices. Art practices are geared towards the design and presentation of convincing, emotionally involving and intellectually stimulating representations. AI, on the other hand, is largely concerned with the manipulation of representations (symbols) by machines, which are based on certain cognitive models and designed to mimic human intelligence. In expressive AI, representation takes precedence over true intelligence, but the manipulation of symbols and symbolic structures is nevertheless a huge part of achieving believability. Mateus asserts that

[s]tructuralist semiotics, through its concern with signs systems and the relationships between systems, provides a common ground in which both the artwork as experienced by the audience and the construction of machines as experienced by the author can be seen as instances of sign systems - this provides

the framework for a more detailed analysis of the relationship between these affordances. (2002: 143)

An understanding of sign systems and the construction of representations is essential if one is to create systems which can be encoded digitally and be believable to an audience as a structured sign-system. Thus the tools for decoding artistic representations take on a new significance in a digital age, as a means of encoding sign systems and creating effective representations in virtual spaces.

Commenting on the different approaches that art and science take towards representing humanity, Bates remarks that “[i]t can be argued that while scientists may have more effectively recreated scientists, it is the artists who have come closest to understanding and perhaps capturing the essence of humanity that [AI researchers] ultimately seek” (1994: 2). In the practice of interactive drama, which seeks to imitate a very human, social and ultimately complex form of artistic expression, this observation becomes vitally important.

If interactive drama is able to reveal anything about traditional theatre, it is that the human body as an expressive instrument, and the fields of performance that have grown up around it, are extraordinarily “high bandwidth”. Even the simplest of performances contain a profound amount of information, including narratives, cultural conventions, multimodal stimuli and media-specific codes. Even the most complex interactive dramas like *Façade* may make seasoned performers shrug their shoulders and recoil at ID’s current limitations, but that does not mean that one stops making these interactive systems. On the contrary, it should only encourage researchers to incorporate

a greater degree of interdisciplinary into their work, in order to discover how to make computer-based representations even more believable.

### **Narrative Intelligence**

Along with expressive intelligence, the second part of the AI equation for interactive drama involves narrative intelligence (NI). Riedl and Young define narrative intelligence as “the ability – human or computer – to organize experiences into narrative” (278). Originally, the term evolved out of the Narrative Intelligence Reading Group at MIT, which started a couple of years after the beginnings of the Oz Project. Begun by Marc Davis, “a humanist new to computing,” and Mike Travers, “a computer scientist with an interest in literary theory,” found that they had common interests but not a common discourse. Although their fields overlapped in areas like narrative theory, knowledge representation, story understanding and generation, and user interface design, even the meanings of particular words like “representation” did not mean the same thing from one discipline to another (Davis & Travers 17). The result was an informal reading group that attempted to bring together insights from artificial intelligence, media studies, human computer interaction design, film studies, literary theory, psychology, sociology and cognitive science. Many of the insights of the reading group are summarized in *Narrative Intelligence* (Mateus & Sengers 2002), and several of their ideas influenced the OZ group and *Façade*, both directly and indirectly.

Narrative intelligence is not just important for AIs, giving them the ability to “organize experiences into narrative” or understand natural language, however. Narrative intelligence acts like representations or sign systems in expressive AI—as a bridge or common language between the worlds of computing and the humanities. As noted previously, HCI has already moved towards an understanding of the interface as a kind of narrative, a viewpoint particularly influenced by Laurel’s work. “Stories seem to be a fundamental, universal way to organize and communicate complex knowledge,” observes Nick Szilas. “It appears natural that HCI moves toward narrative, especially whenever complex knowledge is to be handled” (Szilas & Réty 25). If representation acts as a means of encoding and understanding spatial sign systems in expressive AI, then narrative acts as a means of encoding and organizing experience as a temporal progression in the field of narrative intelligence.

As human beings, we too organize our experience into narratives. As narrative subjects, we observe the world through a narrative lens, living, telling and producing stories constantly. The recent rise of social computing and associated technologies such as blogging, Twitter, Facebook, wikis, internet messaging and the like are starting to make the amount of narrative we actually produce during the course of our daily lives overt and, in most cases, archivable.

If we live our lives as narratives and understand the lives of others as narratives, as suggested by the semiotic turn in the humanities, then it is not unreasonable to assume that synthetic agents should exhibit a similar preoccupation with, and understanding of, narrative experience. Ruth Aylett’s concept of “emergent narrative,” previously

discussed in the context of Sguros' *DEFACTO* system, starts from this very insight (Aylett 1999; Louchart & Aylett 2002). Since human beings organize their experience into narratives through their interactions with each other and the environment, one can also generate emergent narratives through the interactions of characters (human and AI) within a given space of interaction. In this way, "the narrative weight of an application is shared by author and players, rather than being imposed upon the players by the author" (Louchart et al. 2007: 21). A similar technique of using role-playing to generate narrative was employed in an MIT research project entitled *The Restaurant*:

In *The Restaurant*, two users play through a typical restaurant situation in a 3D graphical multi-player game. One takes the role of a customer while the other player is the waiter and both can move through the environment, manipulate objects and talk with each other in natural language. (Kreigel & Aylett 2008: 78)

This approach gives users the ability to experience the virtual world, while simultaneously producing narratives that can be used for AI agents later on. In an iterative process of engagement with other characters, narrative is produced and can be honed down to its essential elements, without the need for top-down planning on the part of an author. Using emergent narratives from our own experiences in virtual worlds to seed and generate the dialogue of AI's is one route to constructing characters with narrative intelligence. By sharing the weight of authorship between players, rather than relying on a sole author, one can also cut down development times dramatically. When one considers that *Façade* took five years to create (Mateus & Stern 2005: 3), it becomes

obvious that new, less time-consuming ways of creating narratives for interactive drama will be essential for the creation of a next-generation ID system.

### **Learning from Façade: Creating a Hybrid ID System**

In this last section, I would like to look at some of elements that might contribute to the realization of Murray's holodeck, based on prior ID research and current technologies. I call this a Hybrid ID System, since I believe that the best way of creating realistic representations is to build on the existing skills and knowledge of real world performance in creating an ID system. By combining those existing aptitudes with cutting-edge technologies, I believe it is possible to create a system which allows for the rapid development of interactive dramas. In keeping with Laurel's work, I have divided these sections of contributing technologies into plot, character, thought, diction, song and spectacle to reflect their Aristotelian origins.

#### **Plot**

*Façade*'s beat-based Drama Manager is currently the state of the art in ensuring tight story structures, and ensuring that activity in the story world contributes to the story. By using a system of weights, preconditions and story values, the system is able to measure the state of the story world going in, and how it has changed coming out of a given beat. The use of global mix-ins ensures a continuous, relatively seamless narrative that is able to adapt to even the most eccentric of interactors.

Although the Drama-Manager represents the best case for the management of plot, the plot of *Façade* nevertheless took five years to produce. By integrating Aylett's improvisational techniques for producing emergent narrative, human users can take on the roles of various characters within the scenes and generate dialogue in the development stage and iteratively select those chunks of dialogue that will be available as beats for the system in the final product. Since the concepts of beats, motivations and goals are already part of dramatic script analysis (cf. Thomas 1999), it should be relatively easy to take multiple transcripts of emergent narratives and break them up into beats for the Drama Manager.

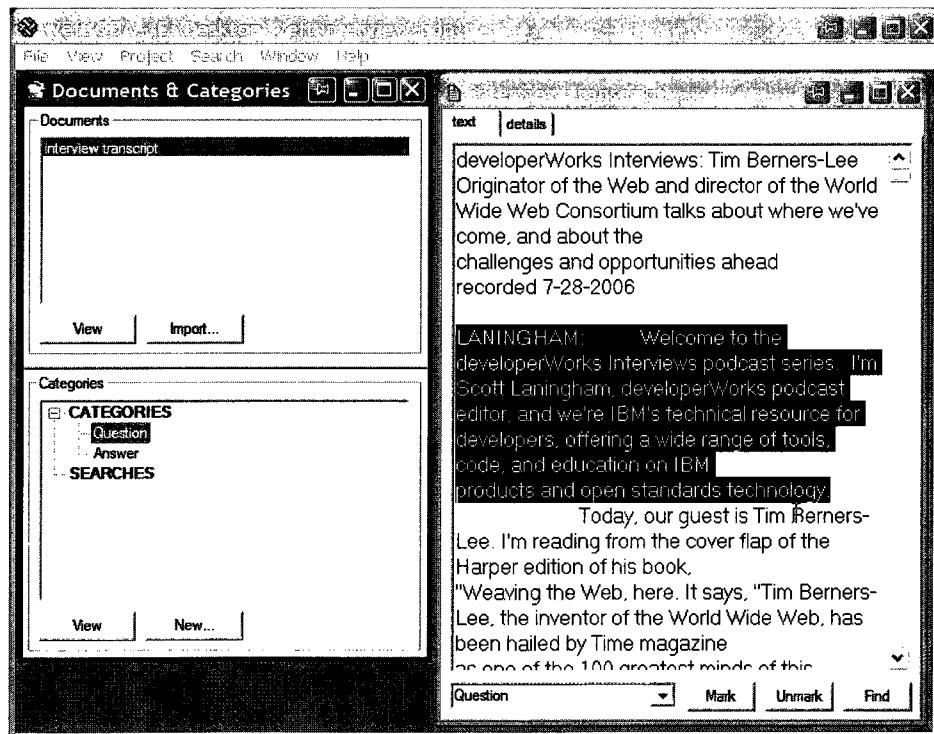


Fig 6.9 – WEFT QDA, an example of “tagging” a script with metadata

As mentioned in the discussion of the *OPIATE* system, various forms of structuralist and formalist analysis can be seen as a kind of metadata about particular narratives. Thus it should be relatively easy to use conventional discourse analysis software like *HyperRESEARCH*, *CAQDAS* or *WEFT QDA* to “tag” certain words or phrases with descriptors of their narrative or affective functions within the plot (cf. König 2009). For example, Proppian functions like betrayal can be flagged within the text, or certain phrases which might denote anger can likewise be indicated. Changes in affect and affinity can be mapped onto the text in such a way that they are discernable to the system itself, which can change character expressions and so on. In addition, changes in character goals and motivations can be mapped onto the text, changing the behaviours of characters in the story world. Like Weyhrauch’s *MOE* system, the Drama Manger should be able to analyze user behaviours and introduce elements that challenge the user or complicate the plot accordingly. This ensures that the plot has a dramatic arc and introduces the element of conflict into the system, by continuously “upping the stakes” in the interactors’ engagements with characters.

It may also be useful to be able to visualize plot structures generated either by human-to-human or human-to-AI interactions. In this way, authors can see which beats are useful to the overall shaping of the narrative arc and which are not. By sampling the reactions of interactors to various plot developments and mapping them, one is given a visual representation of the effects of certain actions on the plot. Coupled with the improvisational techniques of emergent narrative, this gives authors the ability to

“evolve” plots by integrating sequences that work into the ongoing development of the script and discarding those that do not.

## **Character**

I have already mentioned Ken Perlin’s contention that the further development of ID depends largely on creating better characters with whom the audience can readily identify. This means creating better synthetic actors, which possess a wide range of emotional expressions and dynamic interactions (Perlin 17). There are a few ways to go about constructing more believable characters for virtual worlds.

In the first strategy, synthetic actors are used and much more attention is paid to the representational codes of theatre, which has a rich history of semiotic analysis typically ignored by ID developers. Kowzan (1968) for example, examines the codes of theatrical performance and separates them into (1) word (2) tone (3) facial mime (4) gesture (5) movement (6) makeup (7) hairstyle (8) costume (9) props (10) décor (11) lighting (12) music and (13) sound effects. This system of codification has been influenced the work of several theatre semioticians, including Eschbach (1979), Molinari & Ottolenghi (1979) and Fischer- Lichte (1983). Furthermore, this system has been expanded upon to include spatial codes (Elam 1980), codes at various levels of representation (Esslin 1987) and non-verbal codes (Pavis 1982) as well (Nöth 366). It is not that people do not know what makes a convincing representation, or how to make more realistic representations of characters. It is more that the majority of computer

scientists are just unaware of work that has already been done in other fields. This underscores the importance of projects like the Narrative Intelligence Reading Group, so that these insights from the arts can be integrated into other disciplines.



Fig 6.10 – Screenshot from *Casebook – Episode I* (Areograph 2008)

A second approach involves dispensing with digitally rendered avatars entirely, and moving towards a system that looks much more like full-motion video (FMV). In the *Casebook* series of games from New Zealand developer Areo, photo-realistic, non-rendered environments alternate with FMV sequences performed by real actors. In many ways the system is reminiscent of 1990's CD-ROM games like *The 7th Guest* (1992), *Under a Killing Moon* (1994), *Gabriel Knight II* (1995), and *Tex Murphy: Overseer*

(1998) (Hardy 2009). In *Casebook*, the protagonist helps the character of Detective Burton solve a series of crimes through the gathering and analysis of forensic evidence. The major advantage that *Casebook* has over older FMV games is the seamless integration of video and interactive environments that the interactor can explore.

While the game does not allow full blown interaction with characters, it does allow characters to move around photo-realistic environments and view them from any angle, through the use of the Areograph system. The Areograph system scans an actual 3-D space using a robotic camera which takes snapshots and records positional data. Using this positional data as a database index, the system can play back frames in a non-linear fashion, based on the interactor's position in the game world. The user can interact with rendered objects placed in this world, but the main aim is to produce photo-realistic sets in record time (Hardy 2009).

However, given the system's non-linear indexing system, there is little reason that character interactions with photo-realistic actors would not be possible as well. This might mean that the actors would have to remain stationary until the completion of a scene or beat sequence, but this is a fairly familiar convention in video games during sequences of intense interaction. Instead of referencing positional data and photos from the database, the system could instead playback the short Joint Dialogue Behaviors (JDBs)—each comprised of one to five lines of dialogue and character actions—which comprise beats in the *Façade* system. By using actual actors to perform character behaviours, one avoids the lack of believability and realism that typically characterizes

interactive works. The semiotic codes of theatre would (hopefully) already be integrated into the character representations due to a reliance on theatrical acting, rather than the digital animation traditionally used in computer games.

A third solution to the problem of character believability in ID entails the digitization of actual actors, in order to similarly leverage the codes of theatre and performance. In this case, actors would be scanned or otherwise rendered in the virtual world, then would use motion capture to drive the actions and expressions of their characters. These actions and expressions, once recorded, become the raw material for the representation of interactive dramas at a later date. Nicola D'Apuzzo (2009) examines state-of-art systems for 3D full body scanning, comparing their differences and characteristics. He divides these technologies in four major groups: (a) laser scanning; (b) white light scanning; (c) passive methods (as photogrammetry, silhouette, visual hull); and (d) technologies based on other active sensors (as millimeter-wave radar, TOF 3D cameras) or touch sensors (fig. 6.11).

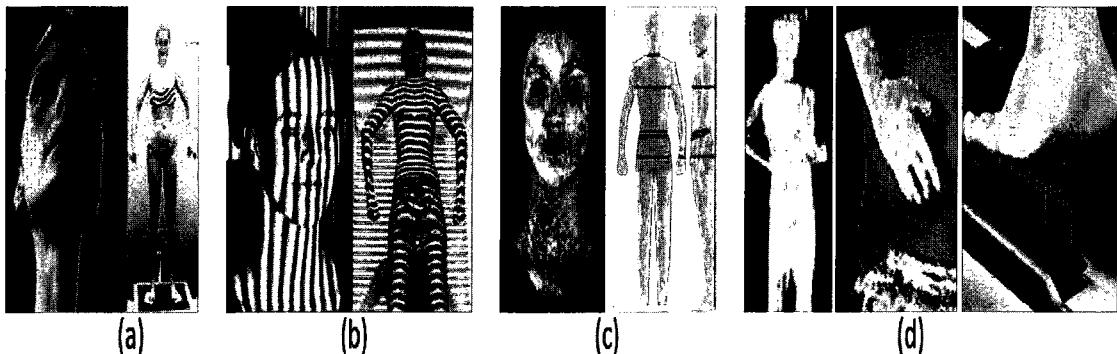


Fig. 6.11 – Technologies used for 3D body scanning (D'Appuzzo 2009:2)

Laser scanning works in much the same way as a flatbed page scanner, by moving a line of light over the object to be digitized. However, in the case of laser scanning, the line of light is scanned over the human body, usually top to bottom, and the reflected laser light is used to compute depth and generate a 3D model. Although laser systems like the *Vitus LC* of Vitronic Corporation produce very accurate models, they are also extremely expensive, require specialized equipment and take a long time to produce a full model (D'Apuzzo 2-3).

In contrast to laser scanning, which uses a single laser line over the human body, white light scanning (or structured light scanning) uses a light pattern—usually black and white stripes—projected onto the human body to create 3D models. Most systems, like InSpeck's *Capturor*, use a single white light projector and a single camera integrated into the same unit. The multiple stripes projected on the body are measured for depth by triangulation; the use of multiple scan lines means that the process of model-making happens quickly relative to laser scanning (D'Apuzzo 3-4). Software-based systems like 3D3 Solutions' *FlexScan3D* allow users to use their own digital projectors and webcams to produce and measure structured light to create 3D models. The data can be cleaned up and manipulated using software like *Leios Mesh*, which allows several scans to be compiled into a single model and exported to any off-the-shelf character manipulation software (3D3 Solutions 2009).

Some of the most active work currently in 3D scanning involves passive solutions which use photogrammetry, visual hull methods or silhouettes to produce their models. Although these systems are mathematically intensive, they do not require the

use of specialized equipment, since they use multiple images and do not require special light sources. Multi-image photogrammetry uses multiple images acquired from different directions by calibrated cameras (D'Apuzzo 4-6). Matching algorithms determine common points among images and use visual shading cues to determine depth. The visual hull method similarly uses multiple images to reconstruct the outline of the human body by calculating its volume in space from multiple perspectives. The silhouette method uses a similar approach by using photos from the front and side that are used to calculate the proportions of the human body based on its symmetry.

The last method of 3D scanning involves a combination of laser scanning and photogrammetry techniques using specialized cameras. Multiple cameras use embedded micro-millimeter or infrared wavelength diodes and sensors to calculate the dimensions of an object. The time delay between the sending and receiving of light is used to calculate depth. Each pixel recorded by the camera is correlated with a particular depth, and the combination of these is used to create a 3D model (D'Apuzzo 6-8). These systems are extraordinarily fast and accurate, and frequently expensive, due to the number of cameras used. They have, however, found a niche market in the clothing industry, where consumers can be scanned and digitized in the store and have custom-fitted garments shipped to them at a later date. These systems are also coming into use as a way of trying on clothing virtually, as users are scanned in the store and then can use their custom avatar to “try on” clothing remotely.

In the case of all of these solutions, 3D scanning can be used not only for the creation of virtual avatar, but also the creation of virtual props for interactive drama. The

construction of complex objects which might take days or weeks to create using traditional 3D design software like *MAYA3D* or *3ds Max* can be scanned and digitized in a matter of minutes. By using props and antiques borrowed from traditional theatres, and scanning them using hardware and software, the time to produce the objects in the virtual world of interactive dramas can be reduced by an order of magnitude (Hardy 2009).

Once actors have been scanned into a digital system, they need to be able to record movements and facial expressions for various scenes. In the past, this motion capture process would have been both time- and resource-intensive. However, with the emergence of “neo-immersive” gaming and embodied interaction (cf. Whitson et al. 2008), technologies that integrate user motion and expression into video games has come to the forefront in recent years. Inspired by the success of the *Nintendo Wii*, game companies are now investing time and research into systems which can track and control avatars in real time. Early on, technologies like the Eyematic *Facestation* (2002) allowed users to recognize and track facial expressions from either a live video camera or pre-recorded clips. The major advantage of the software is the ability to capture expressions and animate 3D models in *3ds max* in real time, without the use of special motion capture hardware, facial markers or offline rendering processes (DMN 2002).

More recently, the application of similar technologies for the gaming industry has resulted in products like 3DV Systems’ *Z-Cam*, which allows users to manipulate the actions of an online avatar in real time. The *Z-Cam* uses infrared diodes and a webcam to calculate depth cues in much the same way as 3D body scanning does. However, in this case, the emphasis is on real-time mapping of user motion to drive the actions of an

avatar in a game world. The technology was intended to be released in 2009, but in March 2009 3DV systems sold the product to Microsoft. It now forms the basis of Microsoft's *Natal* system for the Xbox, providing full-body 3D motion capture, facial recognition, and voice recognition capabilities to the gaming system (3DV 2009).

Used for recording the performances of actors, these systems can be used for creating a semiotic library of character actions and expressions. These actions and expressions would be triggered by the metadata encoded in individual beat sequences, to ensure appropriate actions and reactions on the part of ID characters. Used by the interactor, these systems would allow for facial, voice and motion recognition to be incorporated into interactive drama, creating a much more natural and embodied form of interaction with the system.

The last piece of technology contributing to the creation of 3D characters is software developed by Tony F. Ezzat at MIT called *Video Rewrite* (2002). The *Rewrite* software uses phoneme recognition software to examine video clips and determine how the mouth of the speaker changes when producing the sounds of language. Once this recognition has occurred, users can give the software any pre-recorded audio and the system will render video to make the lips of the speaker match the audio (Cook A1). The system obviously has serious ethical implications in the real world, but used for an ID system it would allow avatars to say anything given the right audio track. This means that speech sequences do not have to be pre-rendered, but can be processed by the *Video Rewrite* system on the fly to produce realistic output.

### **Thought**

In interactive drama, thought “may be defined as the processes leading to characters' choices and actions; e.g., emotion, cognition, reason, and intention” (Laurel 1986:43). Thought can include the major ideas and themes of the play taken as a whole, such as moral or ethical questions, but thought is essentially what causes characters to act the way that they do, including the interactor. The knowledge and choices of characters with the *mise-en-scène* are driven by a combination of what they know and who they are. In the ID systems examined previously, several approaches have been taken to giving software agents some degree of choice, personality and believable behavior. Most of these AI approaches are based on classical AI, with the exception of *Façade*'s expressive approach. While I believe that the “just enough intelligence” approach of expressive AI is ultimately the right route to take for interactive drama, evidenced by the believability of *Façade*'s Grace and Trip, I also believe that injecting ideas from situated cognition, emergent storytelling and narrative intelligence might help to produce even more believable characters in the long run.

Situated cognition proposes that acts like conversing or thinking are the result of a dialogue between an agent and the environment (Bredo 1994:29). Unlike a behavioral approach to cognition that emphasizes skill-acquisition and drills, situated cognition believes in a tight coupling between the learner and their given situation (Greeno 1998:14). A similar stance is found in behavioural AI, where reacting to the environment is one of the most important tasks of the system. When we as human beings are in a

given environment, we are constantly taking in sensory, social and affective information about the people and objects around us. This is not the case for most AI agents, which are usually thought of as abstract software constructs, rather than agents reacting to environmental stimuli. Belief-desire-intent (BDI) models of character agency have been incorporated into interactive storytelling systems with some success (cf. Peinado et. al. 2008), particularly when paired with a Hierarchical Task Network (HTN) planning system so agents can reach their goals (Pizzi & Cavazza 2008). However, these systems rely on extensive formalisms to encode character desires and intents, as well as their reactions to certain stimuli.

This use of extensive formalism runs contrary to many of the principles of emergent storytelling, where agents generate a story based on their interactions in a virtual space. By treating characters as agents embedded in a particular situation, who act and react to objects (and people) in the environment based on their existing personality, one would be able to have much more autonomous characters. One possible solution to this problem is to *encode information directly into the representational environment at the level of the graphics engine*. In this way, whatever is seen or heard within the immediate vicinity of characters can be acted upon. This may seem like an odd approach, but by giving agents a kind of phenomenological perspective on their world we can create more reactive and more realistic characters.

Encoding data directly into representations could be achieved in different ways. In the print industry, various competing technologies have been used to embed data in images, such as Xerox's *DataGlyph* products. These printouts use a system of hash

marks (/ \ ) to encode binary data in photographs, enabling 1KB of data to be hidden in one square inch of image at 600dpi (Motwani et al. 175). Hiding data in digital images, a technique known as steganography, can also be used in non-print media, without any perceptible change in the image to the end user. Using *DataGlyph*, or a similar scheme of digital steganography, it is becomes possible to store different forms of metadata within the virtual world itself—embedded within the visual objects being represented.

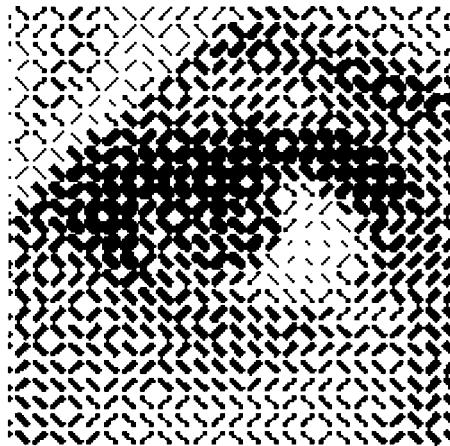


Fig. 6.12 – *DataGlyphs* embedded in a halftone image (Xerox 1994)

By embedding data in the virtual world, agents would be able to act and react to stimuli in their immediate surroundings. While many agents react to stimuli already, they mostly depend on pre-coded reactions to each object. With embedded metadata, only the attitudes and personality of the agents would have to be defined beforehand, and reactions to the environment would be real-time interactions to objects in the virtual world. So for example, if a character has a personality attribute of avarice, all objects

encoded with a “money” tag within the field of their perception will be attractive to them. This encoding technique also allows us to build on the concept of narrative intelligence, since encounters with objects and their data constitute unfolding narratives and personal histories, which in turn change the emotional states and personalities of characters as they move through time and (virtual) space.

Another approach to agent intelligence that might be used is Bayesian AI and associated mathematical models of prediction. These models assume that behaviors are based on past encounters and problems, and use prediction to determine the most rational course of action. By giving agents a memory of what encounters they have had in the past—as Fairclough’s *OPIATE* system does to a rudimentary degree—and combining that with a narrative system that records the embedded data they have recorded, agents would be able to make judgments and predict what the best course of action may be in the future.

By including ideas from situated cognition, narrative intelligence and emergent storytelling, we can show the reasoning processes that lead to characters’ choices and actions. By giving agents a phenomenological point of view on their virtual world, we can make better representations of the motivations and thought processes of characters.

### **Diction**

As the expression of characters’ thoughts in words, diction refers to the choice and arrangement of the words spoken by characters (Laurel 1986:44-5). In ID, this

situation is complicated by the fact that the interactor can (and usually does) say anything, requiring the characters to react accordingly. In *Façade*, the Natural Language processor handles both language spoken by Grace and Trip as well as language spoken by the interactor. The system does not generate new language for the characters, but selects possible beats and topics based on pre-written sequences (Mateus 2002:46).

For the OZ team, understanding natural language—a remarkably difficult AI challenge—is viewed as a dialogue management problem. As Mateus explains:

Dialog management focuses on the pragmatic effects of language (what a language utterance does to the world) rather than with the syntax (the form of surface text) or semantics (meaning) of language. Dialog management views a language use situation as consisting of a discourse context within which conversants exchange speech acts ... When a speech act is recognized, it changes the shared discourse context, perhaps moving to the next step of a social script, or in some other way changing the internal mental state of the conversation partner.

(Mateus 2002:46)

The pragmatics of speech are emphasized in order to create a believable representation, although syntax and semantic still play a role. This performative view of language runs parallel to the view of Ewe and Seifert, who see interactive systems as a performative interaction based on turn-taking and the mutual transformation of subjects and objects (2007). In order to understand user dialogue, the Natural Language Processor attempts to determine what kind of speech act is being used, what it discusses and to whom it is directed. So user dialogue is eventually distilled to something like:

```
ReferTo(character: Grace, object: Wedding Picture)
```

In this case, ReferTo defines a speech act directed towards Grace about the Wedding Picture. The system uses *WordNet*, an online and downloadable lexical English database that is organized into nouns, verbs, adjectives and adverbs and grouped by cognitive synonyms, each of which defines a distinct concept. This allows the Language Processor to translate user speech into synonyms the system can understand. Thus, for example, if the user asks for a “Chablis” the WordNet system allows Façade to understand that the user is requesting an alcoholic beverage, and can act accordingly (Mateus 2007:46). The system works extraordinarily well, especially given that very little AI is involved; the system creates the illusion of understanding while driving dialogue based on the analysis of speech acts.

In terms of the diction that characters used for individual beats, Jeff Orkin’s *The Restaurant* system—mentioned as example of an emergent narrative system—has the long-term goal of logging several thousands of hours of online game play to seed the interactions of a synthetic character. The system will eventually process game sessions played between two real people, and using machine learning algorithms, use that data to create a game played by a single interactor and a synthetic character (Kreigel et al. 2007:4). The dialogue for the interaction between a waiter and customer is effectively ‘crowdsourced’ to thousands of users on the Internet, whose interactions are distilled to produce the final dialogue (cf. Howe 2006).

A similar crowdsourcing approach was taken in the “A Million Penguins” project hosted by Penguin Books in February of 2007. In this project, users were given the first

line of a story, “There was no possibility of taking a walk that day … ” (the opening sentence of *Jane Eyre*), and through the use of a wiki proceeded to produce a novel over 450 pages in length (Mason & Thomas 3). The same approach could be undertaken on a smaller scale to generate dialogue for an ID work.

*Unblockt* was another experiment in collaborative writing that gave users the first and last lines of a story and required people to write what went between them. These story units were then stitched together to form a complete story (Catone 2007). This approach, although unusual, could be quite useful in generating the dialogue contained in individual JDB’s or beats. Like the *Unblockt* system, the author would know how the beat should begin and end, but would have to determine the dialogue in between. This would also help the Drama Manager in selecting relevant beats to stitch together to form a coherent, flowing dialogue.

Recently several products, both free and commercial, have emerged which enable collaborative scriptwriting of a more traditional sort. Adobe *Story* allows users to read, review and modify scripts, as well as adding metadata for the creation of shooting scripts, shot lists and so on. Online users can add biographies, synopses and links, and modules are available for brainstorming content with others (Adobe Labs 2009). *Plotbot* is a similar web-based screenwriting tool, which allows multiple authors to contribute to a given script stored online. More generalized collaborative applications like *Google Docs* and *Zoho* allow for the collaborative editing of any document, whether play-based or not. Although they do not have the script-based tools of *Story*, these are free applications with large existing user bases. By using several authors, instead of just one, script production

times for an ID system can be cut down from five years to something much more manageable; using collaborative authoring as a production tool takes the burden off of the single author and distributes the task of creating realistic dialogue among several scriptwriters.

## **Music**

“Music” or “song” is somewhat of a misnomer when considering Aristotle’s elements. Song in the context of ID should be considered to represent any auditory features related to the representation (Laurel 1986:47). This can include music, sound effects, speech and so on.

For a Hybrid ID System, one should consider the vast array of sound effects and foley devices used in radio drama. Though many devices have fallen out of use in the era of digital audio sampling, many are still used in theatre performances due to their reliability, effectiveness and directionality. Since a recorded or sampled sound often does not sound “live” due to the space in which it was recorded, foley devices are still used so that a given effect sounds like it is coming from the mise-en-scène. Since ID works like *Façade* use recorded voices for the character agents, it seems appropriate to use the techniques of radio drama during recording. In addition, by using foley devices and radio drama techniques, one also has the advantage of spinning off ID plays to a radio drama format, whether for broadcast, internet broadcast or i-Pod download.

Other techniques may be used for creating a directional sound that seems to emanate from characters or actions on the screen or projection. The first technique uses binaural sound in the recording and playback of the audio track. While stereo sound is designed for playback over two loudspeakers, binaural sound is designed for use with headphones:

The binaural experience places the listener sonically where the sounds on the recording or broadcast originated, and requires no special equipment of any sort other than the binaural source and a pair of stereo headphones ... Binaural, rather than trying to bring the sounds into your listening room, takes you where the sounds originally occurred. You are aware of sounds 360-degrees around you, not just right & left but forward & back and up & down. (Sunier 2008)

Using binaural sound increases the believability of characters by accurately positioning their voices in the representational space. Since binaural sound allows for 360-degree sound, one could even simulate sounds coming from behind the user, such as a knock at the door. Instead of using traditional stereo technologies, recording with binaural sound allows for an extremely accurate positioning of sound elements in the representational space.

If headphones are not used, two other forms of directional sound could be employed. The first, the *Edge Motion* system from Emo Labs, uses a thin film layered over a digital display to generate sound. The transparent film has small piezo actuators along the sides of the panel that vibrate the film to create sound much in the same way a normal speaker does (Emo Labs 2009). The film does not interfere with the display, but

it does allow sound to appear to emanate from visual elements on the screen. The second technology that could be employed for directional audio is that of hypersonic sound. First developed by Woody Norris at American Technology Corporation, hypersonic sound is the acoustic equivalent of the laser, allowing sound to be focused into a tight beam (ATC 2009). This not only makes a private listening experience possible using loudspeakers, but also allows a high degree of directionality in order to match the visual source with the sound source. Binaural applications are also possible, due to the way the sound is constructed in a narrow column of air in front of the speaker.

Another element which should be considered and rethought is music. In recent games like Maxis's *Spore*, music is generated in real time to match the action on the screen. This generative music is created using a computer, which uses procedures and parameters to generate a unique work of art. In the case of *Spore*, the *Shuffle* music system was designed by Brian Eno, but the system itself is capable of using a finite number of samples to generate a nearly infinite number of computer-generated songs (Carless 2007). In another case of matching generative music to action on the screen, the video game *Rez* used painter Wassily Kandinsky's theories of synesthesia to match the background on the screen and the music being generated by the system to user actions on the screen (Goviolet 2008). Although this is an extreme example, it does illustrate the ability of generative music to create an integrated sensory experience for the user that matches the action and is unique each time the game is played.

By integrating these technologies, a greater degree of immersion can be achieved. Sounds are matched to their visual representations to create a greater realism for the user.

Generative music mirrors the procedural nature of interactive drama itself, using program parameters to create nearly infinite variation. By matching the intensity of musical sequences to the action on the screen, one creates a greater sense of urgency and dramatic effect than is possible by merely using pre-recorded sound.

### **Spectacle**

The final element required in creating a Hybrid ID System is that of spectacle, which is understood in this context to be composed of everything visible in the representation (Laurel 1986:50). This differs somewhat from Aristotle's interpretation of spectacle, which is more akin to our modern notion of "special effects" (Bk. VI, 1450b, 15-20). However, in interactive drama, everything is composed on a computer, meaning everything is a special effect for all intents and purposes. In the hierarchy of material causes, spectacle is the foundational element of interactive drama.

If the intent of interactive drama is to actually create Murray's holodeck, then the creation of a next-generation ID system will have to rely at least in part on holographic elements to construct its mimesis. Foundational work on holovideo was done by Mark Lucente at MIT (1994, 1996, 1997). His electro-holography system combined traditional holographic techniques and computational algorithms to produce realistic images of 3D objects. In holography, the wave front of light being reflected off of an object is paired with a reference beam and recorded as an interference pattern, or series of optical fringes in a medium. To reconstruct a scene, the fringe pattern is illuminated by a beam of light

which reconstructs the original pattern of reflection, effectively recreating a realistic 3D image of the original object. In traditional holography, photographic paper acts as the recording medium for optical fringes; in computer-generated holography, fringes are recorded by a CCD (or Charged-Coupled Device) similar to those found in digital cameras. Fringe patterns may also be rendered digitally, and in this way one can even display objects that do not exist in everyday life. In Lucente's digital system, holograms are reconstructed by shining light through a spatial light modulator (SLM), a device which resembles a clear LCD display upon which the desired fringe pattern is displayed (Lucente et al. 1994:1).

The major limitation in computer generated holography has been the amount of information contained in the hologram. In traditional optical holography this is not a problem, since a static hologram is recorded onto molecules of silver nitrate with a very high (molecular) resolution. When using digital devices one is limited by the display resolution of the SLM, which is much lower, and the addition of full-motion video makes the information throughput much higher. Lucente's group produced several different hardware setups for getting around some of these limitations, but his major contribution was the development of a mathematical model for efficiently calculating fringe patterns on computers. His "diffraction-specific fringe computation" is a compression algorithm that balances computation time and the clear resolution of the image, since it matches the information content of the fringes to the capabilities of the human visual system. It achieves compression ratios of 16:1 and higher, and produces fringe patterns three thousand times faster than conventional methods (Lucente 1996:1530).

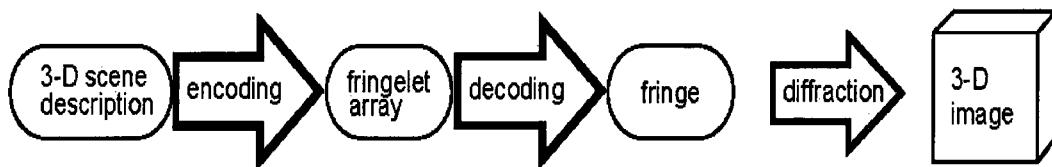


Fig. 6.13 – Encoding and decoding holographic fringes (Lucente 1996)

While Lucente's work represents a major leap forward in producing holographic video, some major limitations still remain in scaling up the system to produce holograms larger than one litre in volume. The first limitation stems from the computational power needed for the generation of moving 3D scenes and their corresponding holographic fringes. Although Lucente's algorithms speed up calculations immensely, more computational power is required if one is going to scale up the size and speed of scenes, as well as their encoding into to holographic fringes. Fortunately, since Lucente's work in the 1990's, video hardware has advanced rapidly. The development of video boards that contain multiple graphics processing units (GPUs) have turned video cards into multi-core computers in their own right. Similarly, the emergence of general-purpose graphics processors (GPGPUs)—chips that can handle tasks usually done by the main computer processor—increases the types of tasks that video cards can do beyond mere graphics rendering. Recently researchers at the University of Antwerp created a desktop supercomputer named FASTRA using four NVIDIA GeForce 9800 GX2 graphics cards—containing eight GPGPUs—that had roughly the same computing power as over three-hundred Intel Core 2 Duo 2.4GHz processors (De Maesschalck 2008). While

FASTRA was designed to perform medical imaging, such a system would be an ideal candidate for generating 3D scenes and/or computing fringe data, at speeds far faster than anything available to Lucente and his group at MIT.

Another approach specific to the computation of fringes involves using very specialized hardware. While FASTRA represents an off-the-shelf solution, the use of optical components for computation would greatly speed up certain calculations required for holovideo. Lenslet Labs' *EnLight* chip, an optically-based digital signal processing engine (ODSPE), is one example of the type of optical technology required. These processors integrate optical elements like SLMs, lenses and photodetectors to perform specialized tasks. Using light for computation rather than electronics means that the speeds of specific computations are increased by a factor of one thousand (Manion 2001). The types of computation that these chips excel at are exactly the types of computations required for computer generated holography. This is not surprising, since both systems rely on the optical properties of materials to produce their effects.

The final piece to the holovideo system is the technology used to display the resulting hologram. In most digital holographic systems, the fringe pattern is replicated on a spatial light modulator and a beam of laser light is shot through it, reproducing an image of the original object. This is an analogue of a traditional transmission hologram, which uses a transparent medium backlit by laser light. Reflection holograms, by contrast, produce virtual images on the same side as the viewer by reflecting light off of the hologram surface. What is required is a phased-array optical device, or something

similar, which can control the phase of light waves transmitting or reflecting from a two-dimensional surface.

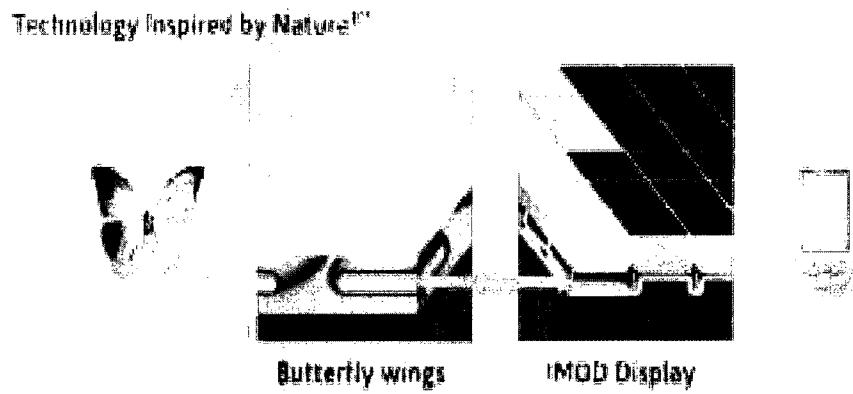


Fig. 6.14 – *I-mod* interferometric display (Iridigm/Qualcomm 2000)

While true phased-array optical devices are still a long way off, requiring sophisticated nanotechnology to be fully effective, there is one major candidate for an interim solution theoretically able to produce holovideo. Iridigm Display Corporation, now a division of Qualcomm named Mirasol, invented their interferometric modulator (*I-mod*) in 2000 as a display technology for handheld devices. A micro-electro-mechanical device, the I-mod uses tiny paired mirrors to modulate light incident on the surface of the display. The position of the mirrors causes an interference pattern that can correspond with the colours red, green, blue and black. The display utilizes the same properties of interference that produce colours seen on the iridescent wings of butterflies or oil in a puddle. The *I-mod* pixels measure thirty by forty microns and resolutions of 1000 dots per inch are possible (Economist 117). The usefulness of such a technology

for holovideo is its ability to produce reconfigurable, very high-resolution interference patterns, in the manner of a reflection hologram or phased-array optical device. The I-mod is an ideal replacement for SLMs in the reproduction of holographic images, since they allow greater resolution, larger displays, and make use of reflected light to produce holograms.

If one is willing to reduce the resolution of the holographic images in favor of display size, one could theoretically use roll-to-roll print processes to fabricate I-mod displays *en masse*. Roll-to-roll technology has already been used to produce sheets of solar cells, electronics and displays by companies like Nanosolar, General Electric and Cambridge Display Technology. Although current roll-to-roll technologies would not be able to produce the same resolution as *I-mod* devices made in the lab, they would allow for the fast and inexpensive production of LCD-resolution displays of enormous size. In essence, the application of roll-to-roll manufacturing to interferometric displays like the I-mod allows one to produce what is effectively *holographic wallpaper*.

Such a technology would allow one to create an immersive space very similar to Murray's holodeck, capable of real-time interaction. Combined with the technologies outlined above, we have a brief outline of what a next generation, Hybrid ID System might look like. Building on the work of Laurel, Murray, Mateus and Stern, all of the elements exist to create a system that seemed like science fiction only a short while ago. Only once we build it will we know what it is truly like to act inside of a representation.

Interactive drama presents unique challenges in the creation of plots and characters that are quite unlike IF. The need to balance user agency with a structured plot

and believable characters makes ID significantly different from other media like video games and novels. Several systems have been built to achieve varying types of interactive storytelling, from Proppian narratives, to emergent stories, to full blown dramas. Mateus and Stern's *Façade* represents the state of the art in interactive drama, achieving believable characters and a gradually intensifying plot through the use of expressive AI and narrative intelligence. What is left to us now is to build on their work and create a hybrid system that combines the existing strengths of theatrical performance with the tools for creating digital, immersive environments. Only then will we be able to create a Hybrid ID System truly deserving of the name "interactive drama."

## **Conclusion:**

### **Contributions, Implications and Future Directions**

Throughout the course of this thesis, I have attempted to show how the intersection of theatrical practice and the use of technologies facilitate the production of new spaces and a renewed understanding of existing ones. As well, I have tried to show how emerging forms of Digital Performance differ from one another: in their positioning of the audience as an active participant; in their thematic concerns; and in the types of affordances or opportunities they enable as media-specific events. By proposing this type of taxonomy, I hope to provide future scholars with a snapshot of work going on in the early twenty-first century, but more importantly, I hope this study serves to open up the field of Theatre Studies to new methods of theoretical analysis, different forms of practical experimentation, and opportunities for collaborative research with those in other disciplines.

Chapter One outlined a short history of theatrical space and showed how theatre has moved from ritual spaces, to purpose-built spaces, to being intermingled with everyday life. Part of the shift from traditional spaces to theatre-in-the-streets to theatre-outside-of-theatres involves changing perceptions of what constitutes theatre and performance, and how art relates to everyday life. In general, the more theatrical our lives seem, and the more surrounded we are by various forms of representational media, the more aspects of performance move into the everyday world outside of theatre buildings.

The move towards more pervasive forms of performance is, I feel, necessary if theatre is to engage with a public numbed by a continuous influx of media and who have largely abandoned theatre for more interactive forms of entertainment. As theatre practitioners we increasingly must provide an experience—as opposed to typical theatrical performance—that breaks down the walls between audience and actor, and which facilitates an emergent process of the co-production of meaning. In order to reinvigorate the theatre, we must first reinvigorate our audiences, by giving them the kinds of interaction and thought provoking experiences they have come to expect from an entertainment culture. Metaphors of performance and performativity are everywhere, yet theatre itself has been relegated to specific buildings, specific objects of study and specific audiences. The last reinvigoration of the discipline, by way of anthropology and sociology in the 1960s and 1970s, helped us to *see* performance everywhere. With the incorporation of media studies and new technologies, performance can actually *be* everywhere.

Chapter One also examined the intersections in disciplinary issues between theatre and technology. In theatre, there is an increasing interest in intermediality after a détente between the ontology of liveness and theories of mediation. This increased interest in theatre and technology has been a long time coming, finally overturning theatre's uneasy (disciplinary) relationship with new technologies since the beginning of film. By reframing theatre as a hypermedium that uses several technologies to create its mise-en-scène, we can begin to look at forms of Digital Performance that have been previously marginalized by theatrical discourse, or exiled to studies of new media. In

proposing a taxonomy of Digital Performance that juxtaposes Traditional Theatre with Digital Theatre, Locative Media, Interactive Drama and VR, I have attempted to sketch the boundaries of both existing practices and those that are still emerging. Although this taxonomy may yet be incomplete, it improves on previous performance taxonomies by situating practices in a broad framework, with the intent of understanding their various theoretical underpinnings, the technologies involved, and their thematic or artistic aims.

It is my hope that by presenting this taxonomy, the discipline of Theatre Studies can begin to classify, think about and discuss a range of performances that have heretofore been ignored, and begin to adopt a more interdisciplinary, intermedial approach to studying such works. It is also my hope that conventional theatre companies and practitioners can draw upon this work to produce shows that are literally “outside of the box,” incorporating these practices into their theatre seasons and thereby exposing their work to new audiences.

Chapter Two examined the work of Robert Lepage and the ways in which his *Blue Dragon*, as a work of Digital Theatre, operates to create a space of intermediality by bringing various media, times and places to the stage. This chapter outlined a framework for the analysis of intermedial artworks, by looking at the work on the stage through the operations of (1) its functions as a hypermedium or metamedium that reminds us of its media specificity and ability to incorporate other media; (2) the intermediality of different medial forms on the stage that contextually remark on each other through their juxtaposition; (3) the remediation of styles and techniques from other media to the theatrical form; (4) the media literacy and reception on the part of the audience, based on

their familiarity with particular media or technologies; and (5) the thematic medium, which works as a trope or touchstone throughout the work to make a metaphorical or symbolic statement. It is my hope that this framework will be useful to other scholars as works of Digital Theatre like Lepage's become more commonplace, and the incorporation of high technology into the *mise-en-scène* becomes the norm rather than the exception.

Chapter Three looked at the work of *[murmur]* as an example of locative media more generally, and proposed that their work illustrates the performativity of space that occurs when audience members interact with spaces or annotate them over time. This concept of spatial performativity, a small footnote in de Certeau, is expanded here through the use of Austin, Butler and Derrida to show how the iterativity of actions or speech acts contribute to the meaning of places in the urban environment. This idea suggests that changes in the environment (whether material or perceptual) do not occur over night, but rather are the result of small changes which affect the constitution of places as cultural imaginaries. *[murmur]*'s work in and of itself is vitally important to understanding the ways in which we can reinvigorate neighborhoods and communities by collaboratively sharing the histories, social uses and various meanings of places. Similarly, their work illustrates the historical contingency and ever-changing nature of the built environment by performing a kind of "spatial archeology," revealing historical layers and stories that otherwise would have been invisible or lost over time. Their work suggests the power of locative media to create spaces and places that have a density of meaning, constructed and performed by the people who live there.

In a much broader sense, I think that *[murmur]* best exemplifies one of the central preoccupations of this dissertation as a whole, which is the power of the performative to transform our environment or radically change our perceptions of it. Combining technology and performance brings a whole new set of affordances into play, since one is no longer confined to a theatre building or a specific arrangement of actors and audiences. The spaces that open up as a result of these affordances are largely determined by the sensory modalities and media-specific practices that certain technologies emphasize (or de-emphasize). When one considers technology, space and performance together, as a system that produces meaning, one begins to realize that the performativity of space does not just entail iterative changes to place-identity, but iterative changes in the ways we use technology and the ways we think about performance.

Chapter Four dealt with Radix Theatre's *Swedish Play* and the ability of Invisible Theatre, Site-Specific Art and FM radio technology to create an acoustic unconscious of a place—in this case an IKEA store in British Columbia. Combining live actors with an audience playing the role of casual shoppers, Radix's work illustrates how technology and performance can be combined to re-write existing spaces or reveal their underlying ideological implications. The concept of the acoustic unconscious, like that of Benjamin's optical unconscious, allows us to perceive things that would have remained hidden if not for the use of a technology that extends and changes our sensory perceptions. For Radix, this means using the techniques of radio drama to create an acoustic mise-en-scène that travels with the viewer, causing her to anchor what she is

hearing to what she sees in her immediate environment. In this way, the burden of producing meaning is placed squarely on the audience, who interpret the space and the work of art as they see fit. Radix's use of radio drama to construct an acoustic unconscious is an important and innovative tactic, particularly when one considers the expanding role of personal audio in everyday life. By using these techniques, one can perform interventions in public places that reveal the psychology, sociology and ideologies that surround us every day, defamiliarizing them through the production of a unique auditory experience.

Chapter Five examined the field of Interactive Fiction and its contribution to the production of spaces of exploration in the early era of home computing. Games like *Adventure*, which positioned the user as a second-person interactor within the virtual space of the computer, contributed to an understanding of the representations produced by computers and computer networks as a cyberspace which required exploration, understanding, problem solving and mapping. Interactive Fiction, with its branching narratives and text-based interactions, situated the user as the co-writer of a particular kind of script, by performing actions within the frame of a representation. As a kind of exploration machine or epistemological engine, IF works by channeling our compulsions to predict, explore, internalize, model and act on what we seen.

IF works have much to tell us about our own processes of reading and cognition on computers, since they are some of the first works that entice us to explore a world created by programmers. Only by internalizing that world and matching the *fabula* and *syuzhet* do we discover all of the spaces of the game and gain an understanding of the

intent of its creator. Part of my intent in this chapter is to highlight the connections between the diverse fields of computing, theatre, narratology and spatial theory; it is my belief that these fields have a great deal to gain from one another through the collaborative creation of virtual worlds. Similarly, by highlighting the historical role of IF as an epistemological engine and narrative-based game, my aim is to foreground what has been lost through the marginalization of text-based adventures in favour of hyper-realistic action-driven games. As a non-linear, spatially-oriented art form, my analysis of tools for creating IF is intended to provide an overview of systems for authors and to suggest that such tools may be useful for scripting other spatially-oriented works outside of the domain of IF. In this chapter I also suggested some future directions for IF, including its integration with technologies such as multitouch and tactile computing, locative media, and technologies like *WordsEye*, which is able to transform textual descriptions into 3D worlds and objects. Hopefully these ideas and suggestions will stimulate a renewed interest in IF and allow it to be combined with new technologies in unique and creative ways.

Chapter Six expanded on the topic of interactive storytelling by discussing IF's successor, Interactive Drama. This chapter explored the foundations of Interactive Drama from Laurel and Murray, particularly the difficulties in creating a form that has strong user agency and a unified, structure plot. Using Kücklich's model, I attempted to show where Interactive Drama fits relative to other media, given its open-endedness, interactivity and narrativity. Although imperfect, I find Kücklich's model quite valuable

in comparing narrative media, and hopefully its inclusion here will spur others to use and refine it as a tool for analysis.

Chapter Six also looked at the ways in which various systems have tried to balance user agency and storytelling, either through generative processes or those which are emergent from character interactions. I see Mateus and Stern's *Façade* as the cutting edge of Interactive Drama software, and admire their inclusion of concepts like dramatic beats and Aristotelian plot structure into their system. Part of my contention in this chapter is that traditional representational forms like theatre and narrative, as well as critical tools like narratology and semiotics, can significantly inform the processes of designing and analyzing realistic simulations. Games are a relatively new medium, but the tools of dramatic and literary analysis have been built up and used for decades or more. The knowledge exists, but too often disciplinary boundaries prevent access to it, or worse still, any awareness of it.

This chapter looked at the relationship between expressive AI and narrative intelligence and how these concepts act in concert to produce believable spaces of representation and agency. The chapter concludes with a discussion of recent technologies that might contribute to a next-generation Hybrid ID System that incorporates the best of both worlds from the fields of performance and computing. I contend that such a system would move us much closer to Murray's imagined "holodeck" and towards a system able to mirror the semiotic density and complexity of Traditional Theatre. My hope is that some or all of these suggestions might be incorporated into a future system, thereby melding the expertise of existing actors, playwrights, theatre

designers and sound artists with the abilities of programmers and game designers. I feel that this is a collaborative effort that is long overdue, and a necessary one if the field of ID is to move forward.

In future work, I hope to explore the role of the audience in greater detail, particularly their individual, phenomenological responses to these works and how they manage the split in attention between space, performance and technology. I also would like to expand on some of the categories outlined here. Due to limitations of time and space, I did not look at forms like Machinima, where users perform characters and scenes in existing virtual worlds, or Flash Mobs, where everyday people converge on a location to perform a modern version of a Happening. I may also explore the emerging use of VR technologies on the stage itself, which, although rare, poses interesting questions of embodiment and intermediability that are distinct from those posed by Digital Theatre. Given the opportunity, I would also hope to implement some of the suggestions for IF and ID into a practical project that would integrate real-world interactions with occurrences on (and beyond) the screen.

In all of the forms of Digital Performance examined here, I have tried to outline the ways in which audience positioning and production of new kinds of spaces change the ways we produce meaning. In most of these cases, the works occur outside of theatres, necessitating the use of various framing devices to situate the audience and give them various forms of agency over the outcome of the performance. If these forms show us anything, it is that the spaces that are around us (whether real, virtual, or some combination of the two) are rich with meanings that have previously been invisible or

gone unnoticed. These forms of performance allow us to map them, annotate them, compare them and integrate them into our everyday life and understanding. If we as subjects are transformed by the environments we encounter through a process of their internalization, then it becomes vitally important to understand the spaces in which we exist and interact as subjects. This becomes vitally important when we begin producing spaces, whether through our performative interaction with them, or through their creation in the digital realm. The kinds of spaces we want becomes a question of what kind of subjects we want to be; the active experiences we create eventually, iteratively, have some degree of material effect, as well as generating a particular perceptual orientation towards the world.

Peter Handke, whom I mentioned early on in this thesis, asserted that he hoped artists in his own time would “go on performing until reality too becomes one single performance area” (10). If anything, this thesis show that we are almost at the point where performance can, and often does, happen anywhere at any time. While we may have some nostalgia for a time when representations were safely confined to the walls of traditional theatre buildings, theatrical productions increasingly wander outside of the walls of traditional spaces to explore the real world or create new virtual ones. We should not look on this development with suspicion, but rather realize that these works reaffirm the power of narrative in structuring our experience and the world we live in. If a sense of meaning was lost historically, due to the atomization of reality and the instrumental rationalism that attended it, then perhaps it is time to put meaning back where it belongs—in the world itself and the space we inhabit. Only then can we realize

that the structures we have built around us are not just reified, material objects, but rather part of the dynamic processes of spatial production, ongoing processes that are both historically contingent and distinctly narrative.

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