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navigating the narrative in space: gender and spatiality in virtual worlds

Technology allows us an alternate space within which we can invent unique methods of telling stories, forming identities, and remembering. As a media maker, I value the ability to use digital tools and to work comfortably within computer-generated spaces. I can combine tools, images, and multiple voices to create three-dimensional computer worlds. I am particularly interested in exploring online space in the third dimension to create "navigable narratives." Beyond a hypertext, where digital text is linked to other texts over the Internet, these narratives—self-maneuvered stories—are created in a virtual space along X, Y, and Z planes and woven with both moving and stationary images, spatialized sounds, and coded messengers. Through motion and point of view, text can also be spatialized and sculpted, and the user can both interpret and experience the story differently with each telling, with each performance.

The culture surrounding computer technology, as well as the shape of the technology itself, is infused with imagery, semantics, classification systems, and ordering structures that implicate computer experiences and products from the interior. These structures have great influence, especially in the context of gender study. *Cyberspace* has been described and referred to in a number of ways. Coined in 1986 by William Gibson, the word *cyberspace* comes from the 1948 term *cybernetics*, the root word of which means "piloting" or "governing." The implications of movement and gender in virtual space raise questions about the possibility for using online space in three dimensions to create alternate, spatialized narratives. Guiding questions concern both the act of navigating—or performing—the digital space, as well as the implications of spatial paradigms and how to work with them if they are implicitly engendered through their context, creation, and representation. To understand the construction of virtual bodies and space, it is necessary to examine connections between gender and these sites of manifestation, especially the ways that gendered concepts are embedded in the construction of online worlds. This navigable narrative form offers possibilities to help address—and perhaps overcome—virtual reality's (VR's) political specificity.

Women's Places and Spaces

There have been several attempts by feminists to characterize cyberspace. In their article "The Place of the Letter: An Epistolary Exchange," Angelika Bammer, Minrose Gwin, Cindi Katz, and Elizabeth Meese compare cyberspace to literary space: "The page of a book, like the computer screen, is a frontier through which we enter a nonspace space, the space that isn't 'really' there. It is a safe space, which the actual, material spaces in which many people live is not."[1] The literary metaphor is inadequate here because it does not account for real-world consequences realized in cyberspace. In the one-dimensional space of a book's text, for example, the reader cannot physically interact with the text or "enact" through the text. In cyberspace and in real space, however, actions taking place in networks have very real impacts on human beings through multi-user interaction and even, say, e-commerce. Many people can

1. Angelika Bammer, Minrose Gwin, Cindi Katz, and Elizabeth Meese, "Part 3: The Place of the Letter: An Epistolary Exchange," in *Making Worlds; Gender, Metaphor, and Materiality*, eds. Susan Hardy Aitken, Ann Brigham, Sallie A. Marston, and Penny Waterstone (Tucson: University of Arizona Press, 1998), 187.

lurk and/or interact online, and harassment frequently occurs when users identify themselves as female. A host of other violent acts are discussed or threatened.[2] Thus, the idea of cyberspace as a safe haven for women equal to that of the book has not been realized.[3] In online worlds, sites can be navigated in many directions and orders, breaking the prescripted order and scalable world of the book. These essential differences help define cyberspace apart from literature as a "nonspace space," and also go beyond early forms of electronic hypertext in the multidirectional and multi-user aspects. Elizabeth Grosz has also explored the philosophical and ethical attributes of the space of cyberspace. In her assessment of concepts of space in discourse and their possible relationship to architecture and other "texts," she notes that texts could "be read, used, as modes of effectivity and action which, at their best, scatter thoughts and images into different linkages or new alignments without necessarily destroying their materiality."[4] To apply this line of thinking to cyberspace, one must think of digitally rendered space as distinct from Western conceptions of space as geographic, as gravity-bound.

One cannot seem to avoid using metaphors of space to describe computer activities. Even the term *cyberspace* renders an absolute connection, associating digital experiences with spatial descriptors. And more broadly, in daily life as well as in feminist discourse, there has been an adoption of such spatial metaphors in language.[5] Examples include "working at the margins" at the "site" of one, singular point, and suggesting that "recentering" is a way to critique status quo tropes; these refer to space as a place for strategic and political action. Furthermore, even programming languages suggest spatialization as an operating mode within code. For example, we ask in the Basic language for the computer to "run" (not process); other commands include "goto" and "get" or, in Lingo, "put" or "place" (rather than compute, display, or calculate input). Such descriptions using the language of geography must be carefully considered given linguistic ties to a historic use of geography as a site of male power. Women in the sciences and in the arts investigate space in different ways using categories that may vary from the traditions in their fields. This is problematic in the examination of VR in several ways: first, women haven't historically been privileged to define fields such as geography or architecture; and second, women have not been the primary designers of the computational architecture of virtual spaces.

But this discussion is not solely about metaphor. It is about the implications of spatialized thinking, both positive and negative, in virtual terms of the subject. In a sense, users of cyberspace have bought into the "spatialized" scenario, complete with its imperialist overtones, by using "frontier" framework when "colonizing" popular virtual worlds. Online spaces such as *Alphaworld* (**www.activeworlds.com**) are examples of the colonization of cyberspace while highlighting and re-inscribing suburban values. Inside *Alphaworld*, one builds a virtual house, gets an address, chooses a color for the lawn, and acquires a mailbox as the worlds are gridded and parceled out to users in a system reminiscent of activities during a nineteenth-century land rush. Geographer Geraldine Pratt notes that in articulating a feminist sense of self and self-location, the often-used metaphors of geography can convey "areas of closure." She cautions that "the very static aspect of geographic metaphors, which

2. I wish to clarify that the rhetoric surrounding Internet violence and women is potentially damaging to women's efforts in cyberspace, as the rhetoric itself can act as a tool for terrorization of women in technology. For more studies of online violence, see Julian Dibbel, "A Rape in Cyberspace," in *Internet Dreams*, ed. March Stefik (Cambridge, Mass.: MIT Press, 1996), 293–315; Stephanie Brail, "The Price of Admission: Harassment and Free Speech in the Wild, Wild West," in *Wired Women: Gender and New Realities in Cyberspace*, ed. Lynn Cherney and Elizabeth Reba Weise (Seattle: Seal Press, 1996), 141–57; and Maggie Canon, "Life in the Big City (Internet Concerns)," *MacUser*, May 1995, 17(1).
3. Linda McDowell, in her article," Spatializing Feminism: Geographic Perspectives" in *BodySpaces*, ed. Nancy Duncan (New York: Routledge, 1996), concludes her discussion of feminist spatial practices by calling into question separatist movements and asking for the validation of multiple truths, not universalist tropes, as the closest constitution to truth we can have (42).
4. Elizabeth Grosz, *Space, Time, and Perversion* (New York: Routledge, 1995), 126.
5. For in-depth arguments concerning metaphors, see George Lackoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980).

under some circumstances have rendered them politically ineffective, can also lead to both misreadings of and failures in feminist attempts to express decolonized feminist consciousness and politics."[6] Because of the metaphoric connection between geography and static representation that does not fit a feminist desire for political change, one must be cautious—or at least alert—to adopt spatialized metaphor for materiality in descriptions or depictions of virtual "space." Like images of the American West, cyberspace is imagined as wild, untamed, virgin, needing mastery and a manifest destiny to guide it. In U.S. discourse, space is identified as female with all the attendant ideologies of subjugation. Cyberspace, through its representation in popular cyberfiction by authors such as William Gibson and Neil Stephenson, is likewise unearthed as female—albeit a Theweleitian female.[7] Many writers have critically examined these cyberpunk works for their representation of the "feminine" within technology. Gibson's seminal 1984 cyberpunk novel *Neuromancer* describes virtual space as "the matrix," an uncontainable, feminized digital frontier and global information network (matrix, from the Latin "womb"). In Gibson's fiction, cowboy hackers "jack in" to the feminized and potentially emasculating matrix—a matrix that is comparably categorized as is "nature"—traditionally feminine.[8] *Neuromancer*'s main cowboy hacker, Case, experiences something akin to orgasm. "Please, he prayed, now—. . . Disk beginning to rotate, faster, becoming a sphere of paler gray. Expanding—And flowed, flowered for him, fluid neon origami trick, the unfolding of his distanceless home, his country, transparent 3-D chessboard extending to infinity. . . . And somewhere he was laughing . . . tears of release streaking down his face."[9] Likewise, Neil Stephenson's 1992 novel *Snow Crash* espouses the idea of cyberspace as an unruly, oozing place with its own rules; the "uncontrolled and implicit danger of contamination to the cyberhero or pirate" is equated with an explicitly "settled" and feminized "matrix."[10] *Snow Crash* protagonist Hiro equates jacking into cyberspace with heterosexual sex. Thus the mythos of cyberspace as a place begins by being depicted as a permeable, "feminine place" that must be categorized, controlled, and conquered.

Representations of cyberspace are tied not only to the field of geography through metaphor; images of spatialized computer worlds are also tied to the scientific in ways deeper than the common usage of imagery, especially 3-D graphics construction, would suggest. Three-dimensional images are useful for a variety of purposes. They can be used to model difficult scientific principles, such as chemical bonding or the workings of jet propulsion; they can be used as "proof" in legal cases (e.g., modeling a car accident to prove that the engineering of a road is misaligned), or provide "proof of concept" in architecture. 3-D modelers do more than just create shapes, however; when making 3-D work, animators must give matter, mass, and gravity aspects to objects and to worlds, thereby creating an overwhelming sense of creative control and power over the objects being created. To model a virtual body, like an avatar from *OnLive! Traveler* (**www.onlive.com/prod/trav/about.html**), for example, or characters like Aya Brea from the *Parasite Eve* action game, the intent is not merely to create a "real"; rather, it is to create a hyperreal.[11] Graphics in three dimensions are read as providing objectivity and omniscience: the all-seeing eye of the reader. The establishment of cyberspace as a place, then, is crucial

6. Geraldine Pratt, "Geographic Metaphors in Feminist Theory," in *Making Worlds*, 13.
7. Klaus Theweleit in his *Male Fantasies* (1987–89) analyzes the fantasies and practices among men in Weimar Germany who helped establish Nazism. Their identity was based on an ambivalent relationship with women and the fear of women. In fact, to these men the battlefield itself became a sexual landscape more desirable than a woman's body, and the imagery used to portray the battlefield, the enemy, and space as female could be brought to play in studies of classic cyberpunk, where writers use references to woman for the frontier of cyberspace.
8. Sharon Stockton, "The Self Regained: Cyberpunk's Retreat to the Imperium," *Contemporary Literature* 36, no. 4 (Winter 1995): par. 15.
9. William Gibson, *Neuromancer* (New York: Ace, 1984), 52.
10. Stockton, par. 15.
11. *Parasite Eve* (Costa Mesa, Calif.: Square Electronic Arts, 1998), CD-ROM.

Zoe Beloff and the Wooster Group. The spaces in *WhereWhere ThereThereWhere*, 1998.

to understanding the position of the 3-D space modeler and animator, for control of a place gives makers of these worlds a sense of control and transcendence.

The ideal layout of most 3-D software packages and virtual world-making software reinforces this reading. Most packages generally have three or four views available at any given time. Most have top, side, front, and perspective views; some allow a grid view mode, a "joints only" mode, and even an x-ray mode of viewing models while constructing and animating. Arguably, this construction could suggest that the use of multiple views, in fact, through the simultaneity and variety of perspectives, seems to invoke omniscience rather than multiplicity.

Navigating and Performing

This discussion of place and space is tied to the navigation within the space and the way in which a user relates to that space. First, I will show that navigation itself is a performance of the space; and second, I will argue that performance in virtual space has gender implications that have the danger of enmeshing users into "conventional" gendered subject positions.

How does the user of virtual space, especially the 3-D space of a game or an online experience, become a subject? Users navigate. They move, sometimes using a dashboard-style control panel to zoom themselves in and around a space, sometimes clicking on objects and causing spatialized animations to occur. The more users maneuver in online spaces, the more they see that the experience of navigating a 3-D world is distinct to computer interaction. Early visionaries of cyberspace spoke at length about control: control over the body, over thought, over representation of the wildest of fantasies. The architect Marcos Novak wanted cyberspace to fulfill fictive fantasies while having absolute control of the experience. He writes that the merging of cyberspace and the body compose an "embodied fiction," and that we are fascinated with cyberspace precisely because it is "the promise of control over the world by the power of the will."[12] This controlled fantasy approach, adopted by most popular games (look to the godlike role players adopt in the Sim-series) reduced the potential of early cyberspace experiments, from which we may now just be recovering.[13] One of the most exciting possibilities of cyberspace is the uncontrolled, the live, the networked and multiple, and the dynamic and fleeting. For these potentials to manifest there must evolve a place for

12. Marcos Novak, "Liquid Architecture in Cyberspace," in *Cyberspace: First Steps*, ed. Michael Benedikt (Cambridge, Mass.: MIT Press, 1994), 224.

13. Here I reference software published by Electronic Arts (EA) such as *SimLife*, the *SimCity* series, *SimAnt*, *SimFarm*, etc.

stories and worlds that are not centered on an ideology based on control. Perhaps we should create designs that give users control in an uncontrolled world as a way to break that paradigm.

At a fundamental level, how the user is able to interact with a virtual space constructs how that space is perceived. Most computer storyworlds offer an interface for the user that is the graphically based representation for the user's options or tools. For example, Cosmo Player is a plug-in for viewing VRML. The interface is the site for control or is the way to communicate desires such as speed, direction, and type of movement during navigation. Often, consciously or unconsciously on the part of the designer, the interface takes the form of a control panel or a kind of dashboard. There are many implications in using a dashboard model as a vehicle for exploring a space. First of all, a dashboard-style graphic implies usefulness, information, status, and point-to-point interaction; an end and a goal are instantly implied. In other words, linear interaction with a reward is fostered, rather than nonlinear, circular, or interrupted interaction. The former are often perceived as "gendered" male with regard to their interaction styles because of the graphic style, the iconography associated with rows of controls, and an information design that manifests assumptions about navigation in real-space terms. Interface dashboards connote performance assessment in the way physical vehicles' dashboards communicate speed, fuel levels, and potential system problems. These types of tools imply absolute power over the experience. A single user/participant must enter and interact in the world through this predetermined interface, which assumes a singular "driver" viewpoint. By creating a uniform interface that presents a storyworld from the first person, a single "subject location" is formed; participants in the story see the world from their point of view and are therefore constructed as a unified, individual subject. Via the interface, users can believe they have an omniscient relationship to the game world, when in fact this is not true. The designers and creators determine the amount of user-knowledge and participation in the experience. In this model, then, the storyteller/performer/storyworld exist on one side, the audience/viewer/participant on the other. This binary opposition, however, oversimplifies and limits the construction of the participant's role in the space; movement can act as the link between the two. Telling a story through movement when the user is the originator of that movement has tremendous possibilities for repositioning the subject. Through movement, the story and the subject are blended together and transposed. Creating a story via movement could be equated with Gilles Deleuze's phantasm. Deleuze describes the phantasm as: "What appears in the phantasm is the movement by which the ego opens itself to the surface and liberates the a-cosmic, impersonal, and pre-individual singularities which it had imprisoned. It literally releases them like spores and bursts as it gets unburdened."[14] This can be interpreted to include ideas such as point of view and the personal to the spatial: "the phantasm covers the distance between psychic systems with ease, going from consciousness to the unconscious and vice versa . . . from the inner to the outer and conversely, as if it itself belonged to a surface dominating and articulating both the unconscious and the conscious, or to a line connecting and arranging the inner and the outer over two sides."[15]

14. Gilles Deleuze, *The Logic of Sense*, trans. Mark Lester (New York: Columbia University Press, 1990), 213.
15. Ibid., 217.

This motion between the ego to the surface, between the "interiority of the expressor (l'exprimant) and the exteriority of the expressed," the inner to the outer, teller/told, storyteller/listener relationship offers a gap, a space for potential unity, in which new ways of identification in narrative, especially for feminists working toward different ways of spectatorship and participation, can develop, and which would allow for identification among disenfranchised groups.[16]

Judith Butler has argued in her book *Gender Trouble* that in examining the implications of agency, instead of an imaginary "doer behind the deed," we should incorporate ideas of performance into action, to assume that a "doer" is constructed "in and through the deed."[17] This indicates that movement through action is a performance that creates a subject position. A rift is exposed in the gap between doing and the doer, allowing for more open forms of art involving movement or navigation. Beyond earlier text-based forms of interaction, where digital text is linked to other texts over the Internet, these narratives—self-navigated stories—are actually created in a virtual space along X, Y, and Z planes, integrated with images and sounds, both moving and stationary. In effect, those who used to be "listeners" are not simply an audience any longer; they are, through their movement, creating the stage. Point of view is multiple, the body is nonexistent: the result is a complex subject relationship unique to digital media.

But how does one get to experience such a position? The answer is performance and navigation. Performance here has two connotations: performance as movement, going through spatialized worlds online, and performance as gender-specific roles, as gender informs any navigational performance. Performance as movement implies the manner in which a process is carried out. Performativity suggests doing according to prescribed ritual; it can also mean, "to give a rendition of." So performance as "a rendition" through movement seems appropriate because, first, it adds the element of experience that a piece of visual or auditory nature provides at each viewing event; and, second, because it changes from viewer to viewer, from time to time, because the narrative is constructed in an entirely different way for each performance through the variations in navigation. Jean-François Lyotard focused upon the event and upon "performativity" as a working principle of knowledge—that a figure could claim its own descriptive space no more or no less "universal" than any other. He wrote, "No single instance of narrative can exert a claim to dominate narratives standing beyond it."[18]

Gender in online spaces is in question precisely because of the relationship between the body of the user and the virtual body of the experience; the move is away from the body of the enactor and much more toward identification and manipulation of the body of the digital characters or onscreen images. The body has been *the* important site for feminist analysis and performance study. By breaking away from the idea of natural sex, and male and female sexed bodies, we can follow Butler's lead and consider gender as enacted, as multiple and fluid. The same distinctions could be extended to cyberspace: in cyberspace there is nothing that is not constructed and performed. The body is physically separate, and spatialized objects would not exist without navigation. As we move about a virtual space, our avatars or

16. Ibid., 214.
17. Judith Butler, *Gender Trouble* (London: Routledge, 1990), 142.
18. Jean-François Lyotard, cited in Bill Readings, *Introducing Lyotard: Art and Politics* (London: Routledge, 1991), 69.

our perspectives become sites for performativity when we are using them in spatialized interactive texts.[19] If we can reveal the processes by which gender is produced—partly through the concept of performativity and partly through the technological apparatus used to create the work and its embedded ideologies—then we may also be able to reveal the processes through which ideas about space and their tie to gender are produced. As a result, we should be able to mobilize the binary categories of both gender and spatiality and bring them to a new area of functionality. Through a conscious awareness of gender and space issues, computer-generated worlds will change significantly in functionality, control/navigation metaphors, and aesthetically. One could compare this process of reinvention to the act of "folding." Folding is a way to birth the three-dimensional from the two-dimensional. By folding one over another —these "planar" concepts of gender and geography—a third meaning is produced. It is important to use several tropes to come near to an understanding of computer-generated worlds, as they are multiple, fragmented, and always in flux. In her 1998 study of performance spaces and critical practices, Mary Russo claims that the power of performance "resides in the excesses or gaps between meaning and utterance" in acts or displays.[20] These possibilities help to open up the subject position found in other forms of electronic storytelling, and indeed in other media forms. This challenge to the digital teller/told or storyteller/listener relationship offers a fissure at which new ways of identification in storytelling, especially for women and disadvantaged or disenfranchised groups, can develop. While virtual space may inscribe gender norms, performance through navigation may be the way to challenge or subvert these norms. Could it be that the performance of space will become the site for a feminist use of the Internet, computer culture, and specifically, of virtual space? Luce Irigaray notes that, "any theory of the subject has always been appropriated by the 'masculine,'"[21] but this may change with the openings of the subject position offered by performance and the critique of state-of-the-art processes. Perhaps exploring online worlds can center on receptivity rather than on control of the experience and thus avoid such appropriation. For users, especially female participants, the shattering or opening up of the position of receiver—of the subject position—offers a situation in which alternative ways of seeing, hearing, listening, and understanding can develop.

Projects

Several projects have used online spaces and notions of performance and should be considered in the discussion of performance and feminist discussions of space. Four in particular should be singled out for their effectiveness and integration of performance aspects: the 2-D performance in The Palace (**www.thepalace.com**) of the Samuel Beckett play *Waiting for Godot*, by Adriene Jenik and Lisa Brenneis; artweb.net's 3-D VRML sponsored performance area *adrift* (**www.turbulence.org/adrift/archive.html**), featuring live performances created by Helen Thorington, Marek Walczak, and Jesse Gilbert; Zoe Beloff and the Wooster Group's CD-ROM *WhereWhereThereThereWhere*; and my own work, the 3-D VRML performance [*the perpetual bed*]. All four works use to some extent the idea of spatialized performance, were created by teams headed by or involving women, and involve a play with the audience/performer relationship.

19. Sue-Ellen Case notes that Eve Kosofsky Sedgwick would extend performativity to "coming out, for work around AIDS and for the self-labeled, transversely but urgently representational placarded body of demonstration;" see Case, Performing Lesbian in the Space of Technology, Part 1," *Theatre Journal* 47, no. 1 (March 1995): 18.
20. Mary Russo, "Reflections on Upward Mobility: Performance Spaces, Critical Practice, and the Spectacle of Flight," in *Making Worlds*, 295.
21. Luce Irigaray, *The Speculum of the Other Woman* (Ithaca: Cornell University Press, 1985), 133.

2-D Virtual Performance The 3rd Annual Digital Storytelling Festival in Crested Butte, Colorado, in September 1997 was the site for the virtual performance of Samuel Beckett's play, *Waiting for Godot*. The play was compressed, adapted, and performed by Adriene Jenik and Lisa Brenneis, with Johathon Delacour as "The Boy." The players used the online world of The Palace, an online image-based chat room, as a public theater space. The text appeared in little cartoon word bubbles overhead and was simultaneously "read" by the text-to-speech engine on the Macintosh computer; thus, speaking characters from multiple sites were able to perform together for a live audience. Because it was live, it was also possible (and encouraged) for hecklers to enter the virtual performance area and interact with the very odd characters in the play. Much of the space (stage?) for the play was represented as a piece of graphic art: a 2-D representation of a rather sparse, dead field. The graphic was created in perspective, however, so characters could move toward the lower part of the screen to appear "downstage." Story and narrative are performed in "desktop theater" through "a logic of gestures and positions" inside a 4 x 6–inch graphic room.[22] Each room was a networked space, with access granted to a maximum of sixteen participants at any particular time.

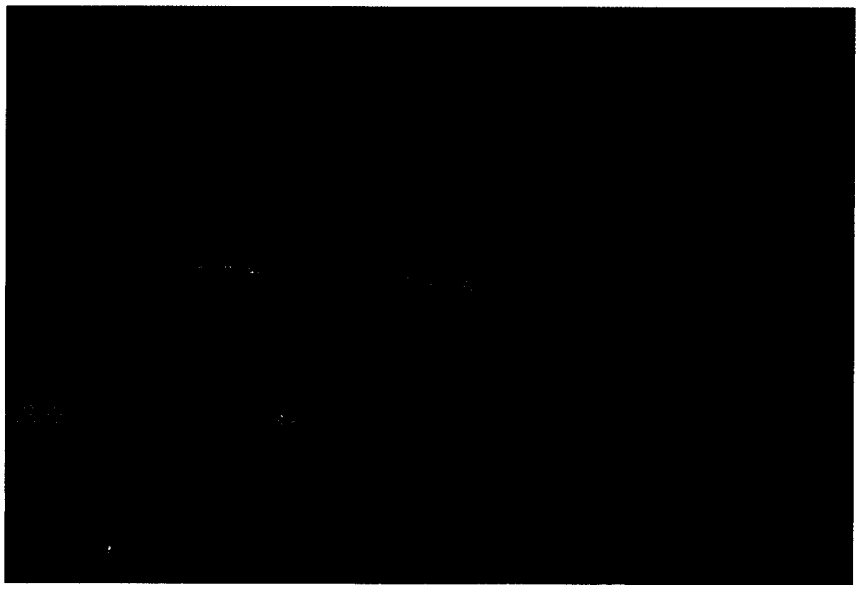
The *Godot* performance was riveting in part because the script was well matched to the mechanical-sounding text-to-speech converter. It did not bring many outside users to interact at length (the play still moved forward without much change induced by the hecklers) and did not keep any evidence of visitors in the space—users could not change or leave things behind in the space except a fleeting comment. The space was flat, not dimensional, so the "theatrical" style performance was more metaphoric than actual: while the space was laid out in perspective, the user's default avatar never changed size, so spatial cues from the environment were not reflected in the character bodies. Since the Storytelling Festival performance, Jenik and Brenneis have expanded and developed their performance repertoire by writing custom scripts and adding intricate networked acting to the works. The performances are now frequented by passers-by and various other hecklers. Audience-bound computers increase participation accordingly, lending an "Internet street theater" feeling to the work. There has been a notable emphasis for the passers-by to change avatar bodies and rooms, and these conscious or unconscious performers frequently manipulate or move avatars around on-screen, popping them in and out of the performance.

At first glance, the performances seem to have too heavy a reliance on text to be included in an analysis of the virtual space itself as a site of meaning. But looking closely, the performance's flat spaces are still navigated by characters. Avatars are positioned over flat bar stools, and characters shy away from one another or chase each other across the space. While the performances are confined to a flat, small space, there is a significance to the space that suggests it provides meaning beyond that of the flat graphics and mechanical voices.

22. Adriene Jenik and Lisa Brenneis, abstract to the 1999 performance "Santaman's Harvest" (**www.lcc.gatech.edu/events/dac99/artparty.html#santaman**).

3-D Virtual Performance The performance *adrift* in 1998 was a networked collaboration between three different environments: text, sound, and 3-D VRML. Created by Helen Thorington, Marek Walczak, and Jesse Gilbert, *adrift*

was performed at a specified time and date—a performance event specifically designed for the Internet.[23] Their system passed information in real time between the three specific sites where each artist was composing and out to the Web for the audience to receive. One artist generated a variety of texts and sounds, another manipulated the 3-D VRML world of the piece, and the third composed sound with a mix of live and prerecorded audio. Collaged images and texts, spoken word, and soundscapes inside a 3-D space were created and performed during the show. *adrift* had an abstract nature, with text fragments and animations drifting in and out. The piece was beautiful, with complex soundtracks and interesting poems centering the world. Taking between from two to five minutes to load, the performances were technologically complicated. (Turbulence.org keeps a recorded version of the performances on the website, and the archives are an exact replay of the performance). The performances had much scripted navigational animation, and variance existed in other elements of the world. The pace, slow and graceful, and the textures, thick and multidimensional, are perfectly formed. Users did not navigate by themselves; rather, the piece was constructed for them live by the creators who were changing the worlds and adding sound, text, and image. This work called into question the tension between the live and the pre-scripted or pre-rendered, and offered an interaction metaphor which played in the space "in-between."



Mary Flanagan. Scene from [*the perpetual bed*], 1998–99.

Navigable Narratives Navigable narratives are an evolutionary next step to the performances described above. They rely on navigation to construct the story; therefore, a new story is found with each telling by searching and piecing together stories and creating one's own links. For an example of navigable narratives, consider a 1998–99 Internet piece of my own and a 1998 CD-ROM work by Zoe Beloff and the Wooster Group entitled *WhereWhereThereThereWhere*.

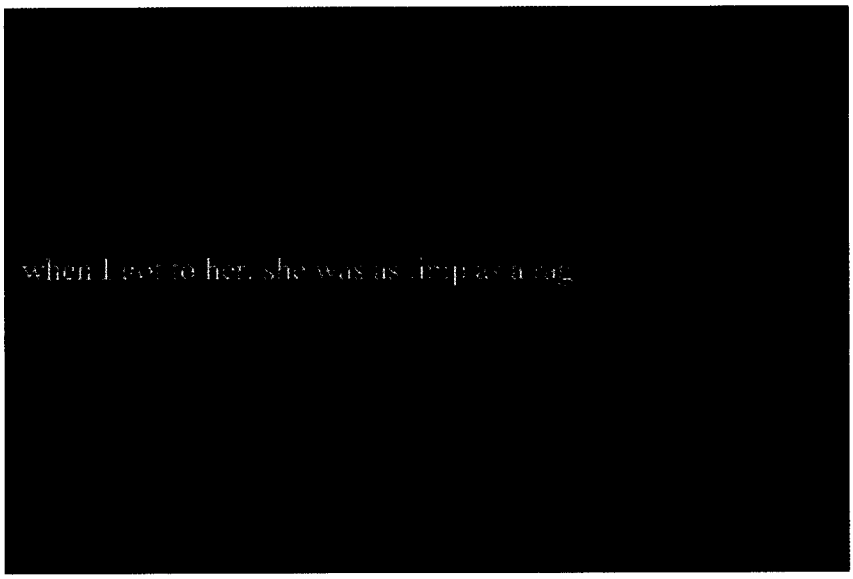
Inspired by the Gertrude Stein play *Doctor Faustus Lights the Lights*, the latter piece is a work in which Beloff and company have investigated performance and virtual space in the digital realm. Beloff's interest in early cinematic technologies led to the production of her first interactive film on CD-ROM, BEYOND, and *WWTTW*, her second CD (with website edition) was produced in collaboration with the Wooster Group.

WWTTW begins with an electronics diagram. Clicking on any particular part of the diagram brings the user to inset scenes that look like small film clips but which are, in fact, Quicktime VR panoramic environments that include movies inside them. Using both mouse and keyboard controls, the

23. To see *adrift's* archives, see **www.turbulence.org/Adrift/archive.html**

user is left to explore each of the environments while text fragments and sentences are created forwards and backwards above the active image area.

During their interaction with *WWTTW*, users will at times encounter a person relating to an object in what looks like a video inside the industrial panoramic setting. Users can zoom into the "once untouchable" space of the video, examine and explore it, and pan past toward other spatial elements. Rather than privileging the movement of the video, the work privileges the movement of the viewer/participant, reminding us that the user's agency has primacy; that is, the user participates in defining the work by interacting with its existing content.



Mary Flanagan. Sculpted text from [*the perpetual bed*], 1998–99.

Similarly, performance and the idea of spatialized narratives can be explored through my own Web-based project, [*the perpetual bed*]. It is an online, virtual VRML world situated in the world of my grandmother's dreamstate, in which users can interact with one other within a navigable, abstract narrative. This piece is about my ninety-one-year-old grandmother's experiences when critically ill and hospitalized. She could barely feed herself, but she could talk and drift in and out of sleep. She had terrible, fantastic, and funny dreams while ill, and the dreams acted out in the space of her room, a space that lost its taupe walls and hospital-huge doors to expand into a wake-dream world. In her less lucid moments, I could see Grandma staring off and silently wording things in this wake-dream state. These were interactions between the waking and dreaming world.

Grandma told me stories about people who kept coming up to her bed, in which case she would give these visitors chocolate chip cookies as they went on their way. These visitors consisted of nurses, strangers, and even the deceased, and I translated this experience into a scene in the [*the perpetual bed*]. It became clear that, in her supine state, my grandmother was interacting with a dream space. Her experience struck me as more than a nonlinear narrative; instead, it was a spatial experience that took place around my grandmother's bed at the time of her illness. My grandmother's interaction with her timeless dream space became the subject of [*the perpetual bed*] as I began to explore the issues of her illness through movement in a virtual space environment.

Beloff/Wooster Group's piece and [*the perpetual bed*] are hybrids between linear forms such as film and video, traditional oral storytelling, dance, installation, and animation. I call this type of story a "navigable narrative" because it takes the viewer literally into the story's space. The worlds use performativity as a general operating strategy. It is an activity that allows the operation of impro-

visatory experimentation based on the perceived needs and desires of a situation. I call it navigable because it also spatializes the smaller metanarratives in the story, giving no one particular tract or story an inherent authority or truth. It is fluid and changes each time it is traveled. Through unhinging the static point of view, these pieces are a fluctuating series of objects set in a changeable, scalable world.[24] Both of these pieces rely on the movement of the user/viewer to encounter transparent yet tangible beings, memories, and places. The story unfolds by a guest or performer moving through a story, to "happen" upon a scene and find their own meaning and leave traces behind: a spatialized, 3-D palimpsest.

Creating this kind of work is a process. All of the performances explored may be considered to have been works-in-progress, both in terms of the "live" or exploratory nature of the work and because the area of exploration is so new and changeable. Progress in the area of navigable narratives is slow by artists because of the sheer amount of technical expertise and effort it takes to construct complex, spatialized narrative worlds. Navigable narratives are one venue that reflect these shifting subjectivities and that destabilize the historic use of spatial metaphors. Such narratives also rework predetermined concepts of navigation and narrative as linear and bound to historic models.

Multi-user or single-user, these artists create from the temporal and motion imaging elements of film and video, the accessibility of the Internet, the user-centered narrative form of interactive art, and elements of choreography and performance. What results is perhaps something akin to Kathy Ferguson's "mobile subjectivities," an unstable subjectivity in progress, in flux, and "interpolated by diverse and sometimes contradictory subject positions."[25] Virtual space offers makers and theorists an opportunity to expand concepts of performance, geography, and representation. Steven Holtzman comes close to describing this ideal in digital terms in his book *Digital Mosaics: The Aesthetics of Cyberspace*: "The best of nonlinear media will create an experience that reveals a new logic. We will be immersed in the texture of a nonlinear sequence that's as compelling as going from A to A. As we freely explore, links push us from world to world in a narrative-audio-image-photo-video-essay. Sparse text merges with images that reflect the emotional worlds of the words."[26]

It may be that the complex subject/object relationship exemplified by the navigable narrative will become the site for a feminist use of the Internet, narrative, computer culture, and specifically, virtual space. We should look to the junctions between surfaces as fissures of possibility for exploring subjects and objects for women's narrative practices. J. K. Gibson Graham notes that new interactive works are a kind of "babble emanating from this discursive space . . . a political process without end, and without a (unified collective) subject."[27] This work, which takes part in this babble, engages with the process and with the always-negotiated place of "the other" in cyberspace.

24. This is true in the case of the Web version of *WWTTW* and [*the perpetual bed*] VRML world; the CD-ROM world is not as expandable.
25. Pratt, 15.
26. Steven Holtzman, *Digital Mosaics: The Aesthetics of Cyberspace* (New York: Simon & Schuster, 1997).
27. J. K. Gibson-Graham, "Postmodern Feminist Social Research," in *BodySpaces*, 242.

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