Virtual Reality and the Tea Ceremony

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Introduction

The Internet explosion of the 1990s belongs to the more general lust for explosions that characterizes this era. Click, bang, click bang: one screen after another explodes. Like contemporary action films, the computer network enjoys a huge success because of its dynamism. Users identify with the non-linear action where a surprise awaits around every corner. Pictures, video, voice, and animation create a hypermedia whirl that pops up like a kaleidoscopic circus. The World Wide Web brims with adventure, high impact, and a sensory bombardment not unlike the worlds of Indiana Jones or *Total Recall*. But while action films reach back to linear narrative akin to Homeric story-telling, today's information tools have the look and feel of something new. The earlier linear modes of perception are broken by random-access action laced with information.

Soon enough, however, even the veteran net surfer grows tired of speed thrills and choppy surfaces. The tide is already turning toward information design with greater depth, sense of place, and the quiet grace of painting and literature. As the look and feel of the new media finds its own niche in cultural life, designers will want to expand information systems to include virtual worlds that draw on the soothing, contemplative aspects of pre-digital media. Technological thrills will cloy until we can inject some of the meditative profundity of the Victorian novel or the landscapes of Corot into the Internet.

This essay is a thought experiment to prepare for the not-too-distant future when hardware and software will make possible such scenarios.

The meditative tools of the linear past offer a contrasting resource for hypermedia. This was the argument I made in *Electric Language*,[1] a book that contrasted the word processor on which it was written with the former methods of writing on typewriters and with pen on paper. By understanding the contrasting powers of media, I argued, we can produce a richer complementary unity. In the present essay, I want to project onto the Internet a sensibility and style that contrasts sharply with the love of explosion. Instead of explosions, I want to advance for the Internet the grace and minimal spaces of Zen.

Zen was imported to the United States as Zen Buddhism from Japan in the early twentieth century, originally a Chinese spiritual development known as Ch'an Buddhism. Zen arose when Indian gurus arrived in sixth-century B.C. China to teach their religion in northern Asia. Over time, the indigenous Chinese Taoists reshaped Buddhism to their tastes, making it more practical and down to earth in their eyes. Zen currently enjoys a fashionable respect in Western culture. Bookstores in shopping-malls carry volumes on the Zen of programming, the Zen of negotiating, and the Zen of motorcycle maintenance. Business managers read about Zen management, and the Samurai they imagine live only in Hollywood. Most of our popular Zen has been adapted to fit Western values and remains a fantasy Zen. Cultures adapt what they adopt.

Westerners often see explosions in Zen. The explosion of "instant enlightenment" does run through Zen literature, but Westerners often mistake the flash of *satori* for instant coffee: you spoon out some ideas, add a little water, and stir to arrive

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[1] Michael Heim, *Electric Language: A Philosophical Study of Word Processing* (New Haven, Connecticut: Yale University Press, 1987).

at enlightenment. What often goes unmentioned are the long hours of patient practice that prepare the shock of immediate understanding. After all, Zen practice requires daily physical exertion. Many of us who teach Tai Chi Chuan in the West have come to appreciate how slanted the Western psyche is toward mental rather than physical understanding. The understanding of the body is left largely to athletes. In the West, even Zen has been treated as a figment of the mind, as a tricky belief system or lifestyle. Alan Watts and Aldous Huxley popularized a head Zen that belonged more to hippie drug experiments or Asian cultural studies than to actual physical, sensuous body discipline. Going beyond the easy references of shopping-mall Zen means that we encounter a sensitivity that continues to escape our dominant sensibility. Cultures grow deeper by adapting themselves to what they adopt.

In exploring the Zen of the Internet, we must learn to think sensuously and physically. We must become aware of autonomic physical activities like breathing and body balance. We must notice our posture, our finger movements, and the way our eyes move in their sockets. We must begin thinking of computer work as a somatic process with psychic overtones. As more activities move into virtual worlds, the computer interface becomes as important a place in our culture as those earlier sacred places that housed a shrine, a temple, an altar. The computer is a place for self-transformation. We need to look carefully at what transpires in us as we enter virtual worlds.

At this stage, the Zen of the Internet alerts us to our practices. Since most of our practices tend to be outwardly directed, we need to jog our awareness by looking carefully at practices for awakening the inward senses. Our thought experiment can help jog our awareness as we try to import an alien and contrasting sensibility. The contrast I have in mind comes from the ceremonial gentleness of the Japanese tea ritual. This sharp contrast to the cult of explosion is an alien form — as alien to

contemporary Japan as to the West. Precisely this alien quality is what begs us to import the tea ceremony into Internet culture. The Internet calls for design projects that translate the depth, refined rhythm, and the strong sense of place achieved by the Way of Tea.[2]

Landscapes for Virtual Communities

Some people fear the Internet as a form of cultural and intellectual strip mining. The Internet is indeed dynamite. It delivers high-speed access to the wealth of cultural life independent of geography, and it is free of the physical distances that once supported intellectual privacy. With intense interest, we watch today's Internet as it adds a new dimension to world culture. A computer system has emerged that forever changes our communications. And because it is based on computer software, this system will increasingly break ever new ground in computer-generated realism. Video and audio depiction plus interactive communication lead to a whole range of shared experiences. And these experiences already cut across national and cultural boundaries. The World Wide Web provides the first fully global participatory technology. It is not based on the broadcasting model of one-way communication. Instead, it brings a network model of individuals who create nodes of shared meaning in geographically remote, virtual communities.

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[2] The ideas expressed here about the Way of Tea first arose at an intercultural workshop held in Kansai Science City in April, 1996. Just outside Kyoto, the International Institute for Advanced Studies hosts workshops for neighboring Japanese companies like Sony and Panasonic. The workshops create "fishing expeditions" to capture new ideas that may or may not apply directly to industry. At the April 1996 workshop on "Virtual Reality and Intercultural Design," I introduced the merger of the tea ceremony (*cha-no-yu*) with Internet design. I wish to acknowledge the input of colleagues at that workshop, especially the Zen master, Ryosuke Ohashi, who teaches philosophy at Kyoto's Technical University. Professor Ohashi brought many insights to the three days of discussion, and I cannot easily separate his ideas from my basic thesis. A graduate student at the Art Center College of Design in Pasadena, Muneharu Yoshida, also presented at the workshop, and his images illustrate this essay.

But we must not be too quick to apply the word "community" to the groups that gather via interactive communications. The very term "electronic community" is problematic because it masks the ephemeral, even alienating features of everything electronic. I say "ephemeral and alienating" because I have in mind a contrast with community as the world religions built it over centuries. The "*communitas*" created around the medieval monasteries, for example, insisted on geographical stability and long-term living arrangements that have nothing of the ephemeral, remote telepresence of electronically formed communities. The notions we have of community still depend, by and large, on a pre-technological sensibility where human relations develop over time and through geographical proximity. We need to proceed cautiously to supplement primary communities rather than replace them with virtual communities.

One of demands, then, on our evolving sense of community is to think out ways in which we can translate communal traditions into the electronic environment. While an electronic environment does not offer the stability and proximity of traditional communities, we can still learn more about what constitutes an environment if we try to translate traditional communal experiences onto the Internet. Just as we learn more about our own language when we learn to translate it into a foreign tongue, so too we learn more about how to shape electronic environments when we build traditional communal experiences onto Internet sites. We must keep in mind, too, that the Internet exists in the mid-1990s at an early stage of development. What we call "virtual reality" on the Internet remains a far cry from the fully immersive environments that already exist in experimental form outside the small bandwidth of today's Internet.

At the moment, the Internet receives its shape largely from previous media. Metaphors from earlier media typically help us

understand new modes of communication, and as the Internet gates open to commercial markets, broadcasting professionals have landed on the Internet in large numbers. Broadcasting, because of its one-way approach to communication, has created an artistic bazaar that effectively bars viewers from participating in the creation and cultivation of atmosphere. Yet even while the broadcasting model extends to the Internet, the very tools themselves are changing the way advertisers think about delivering their messages. Internet communities, as they appear in seed, depend on the interactive creation of spatial atmosphere. People virtualize information, for example, through the spatial metaphors they apply to the World Wide Web. The Web exists in "cyberspace"; people create their "home pages" on the Web; a business establishes its "web site"; and so on to "virtual cities" and "virtual campuses." The language is a language of place, location, spatiality.

The language of space is not just so much gassy metaphor. It suggests the basis of the new kinds of community. Through these spatial metaphors, we are seeking to inhabit electronic environments. They are metaphors of dwelling, of inhabiting, of making cyberspace a place of our own. Of course, computer designers since Douglas Engelbart and Steve Jobs have learned that physical metaphors — from windows to scrolling to spreadsheets — play a central role in adapting computing machinery to human ergonomics. But such physical metaphors cease to be mere metaphors when we actually spend much of our time "out there," associating with electronic "neighbors" and cultivated email friends. Pragmatically speaking, the computer environment becomes a place where we live and work, play and invest. A home or communal dwelling can have a place for broadcast messages, but the habitation is not a product of broadcasting. We may have a television or radio at home, but we restrict it to its place within our living space. So too, our cyberspace may have a place for broadcasting as long as broadcasting knows its place.

The question then becomes, how can we learn to *inhabit* cyberspace as a space of atmospheric depth? Furthermore, how can we build spaces that protect highly prized cultural values? One value, for instance, is nature, which seems excluded from electronic space. How can we, for instance, preserve a respect for the natural world when we inhabit computer space?

Both issues of dwelling space and the place of nature arise when we think about how to virtualize the traditional Japanese tea ceremony, which is known in Japan as <u>sadô</u> or <u>cha-no-yu</u>. Obviously, I am speaking here not of creating the actual Japanese tea ceremony online, but of applying the *idea* of the tea ceremony to computer space. In this sense, I write about the <u>katachi</u> or outside form of the tea ceremony, and not about its <u>uchi</u> or inside contents. I am interested more in the thought experiment than in the actual performance of the tea ceremony.

The tea ceremony may seem at first glance an inappropriate model for applied technology. The tea ceremony cultivates the sights and sounds of nature, of running streams and falling leaves, and of the feel of rocks and the scent of flowers. Many people view technology as an opponent of this infinitely sensuous nature, and they have good reasons for seeing this opposition. For one, the metal-and-plastic ambiance of current technology lacks nature's profoundly sensuous appeal. Since its birth in the Enlightenment, modern science has treated nature as an antagonist, or at least as an outside object for skeptical inquiry and human exploitation. A stream of recent books have criticized modern science and technology for creating the distance between humans and nature that has led to the crisis of planetary ecology. The ecological movement began as a critique of misapplied technology. So how shall we talk of the tea ceremony if we are at what Bill McKibben has described as "the end of nature"?

> Our comforting sense of the permanence of our
> natural world — our confidence that it will
> change gradually and imperceptibly, if at all — is
> the result of a subtly warped perspective.
> Changes in our world which can affect us can
> happen in our lifetime — not just changes like
> wars but bigger and more sweeping events.
> Without recognizing it, we have already stepped
> over the threshold of such a change I believe
> that we are at the end of nature. [3]

The evidence for this end of nature, to which McKibben and
other environmentalists refer, ranges from acid rain to holes in
the ozone layer, from genetic engineering to ecologically
induced shifts in weather patterns, from the depletion of fossil
fuels to the rise of the oceans. McKibben points to simple fact:
the air around us — "even where it's clean, and smells like
spring, and is filled with birds — is significantly changed. We
have substantially altered the earth's atmosphere."[4]

Why the Tea Ceremony?

Oddly enough, the tea ceremony may be precisely the right
remedy for a sick planet at the end of nature. The tea ceremony
is a technology for affirming nature, a ceremony that employs
highly artificial means to return humans to a deeper intimacy
with nature. Paradoxically, the traditional tea ceremony applies
a refined control of human perception in order to free
perception so it can once again appreciate the natural
environment. Nature, in other words, needs to be
rediscovered. "Original nature" has become covered with dust
and dirt. *Cha-no-yu* is a set of techniques for removing the dust

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[3] " The End of Nature," in *The New Yorker* magazine, September 11, 1989, p. 47.

[4] Ibid.

and for cleaning the dirt that overlays perception. In this sense, the tea ceremony functions as an interface, a window, between daily human business and the experience of fresh, spontaneous nature.

While many things can and are being done to reverse the damage to the natural environment, the environmental crisis goes deeper than politics and cleanup efforts. Modern philosophy, since Descartes and the rationalists, has configured human perceptions so that we modern people pay less and less attention to the spontaneous aspects of nature and more and more attention to the universal, controllable aspects of nature. Behind the physical damage to the environment lies a tunnel-like vision that narrows human perceptions. The repair of the natural environment cannot happen fully until the human being perceives the world differently. Ecology must have a foundation in *ecosophy*, in a wisdom about natural cycles and spontaneous movement. "Ecosophy" is the wisdom (*sophia*) about dwelling (*eco* or *oikos*). Ecology of the physical world must have a basis in personal ecology.

As a teacher of Tai Chi Chuan, I find this change of perception the most important yet most difficult change we can make. Disciplines like Tai Chi and the tea ceremony seem demanding to us moderns because our technological control over the environment often makes us passive spectators and consumers — fulfilling the promises offered by technological consumerism. Yet the reactivation of our primal physical awareness can indeed heal our incapacity for sheer pleasure and physical delight in our surroundings. It is not by accident that the Tai Chi player stretches, relaxes, and opens the energy pores of the body in the outdoors under the trees. Through the subtle backdoor of unconscious, peripheral awareness, we must find rituals to reconnect ourselves to a relaxed perception of natural surroundings. Only the revival of our relaxed spontaneous perceptions can nourish an ecosophy that forms

the basis of a long-range planetary ecology. If ecology becomes the way we link ourselves to the outer world, we must find a parallel ecosophy within.

Ryosuke Ohashi makes a similar point when he defines Japanese aesthetics as " pruning."[5] Pruning is a reduction that leads to fuller and more harmonious growth. Pruning captures the essence of a process of growth when that growth mediates humans with nature. The tea ceremony also operates by pruning human perceptions. By reducing the natural interaction we have with things, the tea ceremony enhances and concentrates natural interaction.

The challenge to ecosophy, however, increases with the advent of cyberspace. As cyberspace grows, nature seems even more to recede. The electronic absorption of large portions of life — what some call the "virtualization" or dematerialization of life — corroborates the notion of nature's disappearance. The end of nature in human perception would seem to culminate with the fully immersive technology of virtual reality, where we don a helmet that isolates us from the primary world. So it is even more important for us to consider how that same technology can contribute to a transformation of our nature perception rather than replace our perceptions. The age-old wisdom of the *I Ching* suggests that any extreme condition, when pushed to its limit, initiates the reversal into into its opposite condition. The virtual reality that hosts the tea ceremony may well be the pivot point.

The paradoxical use of technology to transform perceptions distorted by technology are inherent to the traditional tea ceremony. Entering the tea room, we go indoors in order to better perceive the outdoors. We remove ourselves from the

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[5] Personal conversation in Kyoto, April 1996. Professor Ryosuke Ohashi is writing a new aesthetics (in Japanese) which considers "pruning" to be the essence of the human relationship to technology.

many things in the world in order to see more clearly the flowers, the scroll, and the colors of the tea bowl. We crawl silently through the entrance of the tea hut and pay attention to the sound of boiling water so we can later hear the waterfalls and the singing of the sparrow. Our perceptions emerge within a larger structure that I call the "psychic framework."

The end-of-nature shift that McKibben writes about is not a change in physical substances or ecological systems — nor even a change in the terrestrial atmosphere. The change he refers to is a shift in the psychic framework by which we view the world. By that I mean the way humans feel when, say, a change in an ecological system alters their background experience and affects their sensibilities, the affective attitude we have toward the world, as much as the world itself. As beings in the world, we inhabit the world as participants; not merely as spectators scientifically observing and then calculating for advantage or disadvantage. The framework of our participation in the world has a look and feel to it, not merely a scientific description. When the world changes ecologically, so does the psychic framework in which we work and love, play and observe.

The Psychic Framework of Tea

Nature as a "psychic framework" appears in the description of the Japanese tea ceremony in D. T. Suzuki's lovely book for English-speaking readers, *Zen and Japanese Culture*.[6] Describing the tea ceremony, Suzuki points beyond physical facts to the atmosphere in which gestures, objects, and surroundings cohere:

> The tea-drinking that is known as *cha-no-yu* in Japanese and as "tea ceremony" or "tea cult" in

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[6] Daisetz T. Suzuki, *Zen and Japanese Culture*, (New York: Princeton University Press, Bollingen Series, 1959).

the West is not just drinking tea, but involves all the activities leading to it, all the utensils used in it, the entire atmosphere surrounding the procedure, and, last of all, what is really the most important phase, the frame of mind or spirit which mysteriously grows out of the combination of all these factors.

The tea-drinking, therefore, is not just drinking tea, but it is the art of cultivating what might be called "psychosphere," or the psychic atmosphere, or the inner field of consciousness. We may say that it is generated within oneself, while sitting in a small semi-dark room with a low ceiling, irregularly constructed, from the handling the tea bowl, which is crudely formed but eloquent with the personality of the maker, and from listening to the sound of boiling water in the iron kettle over a charcoal fire.[7]

What Suzuki describes as a "psychosphere," "psychic atmosphere," or "inner field of consciousness" is what I mean by a psychic framework. The psychic framework of the tea ceremony is a field of awareness, but it cannot be separated from the technology of utensils, architecture, and decor that affects the participants' state of mind. We should not think of psychic framework as "consciousness" if by consciousness we mean a private subjective state that peers from within to confront a separate world of alien objects. A psychic framework sets the tone that a field of awareness has when it seamlessly flows with a set of furnishings, tools, and physical movements.

The tea ceremony is a technology designed to recapture a lost

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[7] *Ibid.*, pp. 295-6

nature. Artificial and formalized in its every movement and gesture, the tea ceremony removes excess in order to exalt the simple clarity of being. Its highly stylized cultivation aims at a certain kind of experience. Only through the artificial does one regain a lost sense of open harmony with the natural. Our daily struggle for survival pulls us away from experiencing pure, spontaneous nature. The tea ceremony requires a person first to go indoors in order to restore a sense of nature outdoors.

We must regard cyberspace technology as a technological practice. Entering cyberspace is like entering the space of the tea ceremony. The more a cyberspace is a virtual reality in the strict sense — using immersion techniques like projection displays or head-mounted displays, and using full 3D stereoscopy — the more it shapes a psychic framework. How does this technology configure a distinct psychic framework? How can we make the design of the virtual reality interface function so that we become wise in our use of nature?

Here is where contemporary interface design goes beyond the so-called "human factors" research. Human-factors research scratches the surface only. It asks minimal questions about interactivity. It works with elementary surveys about the way humans use computers. It does not study the psychic atmosphere produced by virtual worlds. When the immersive feature of virtual reality creates a world where the user becomes a participant, then we can no longer rely on behavioral psychology to convey what is happening. A world brings the full context of existential involvement, not a single procedure narrowly restricted to the use of tools. A world is an ontological totality, not a sequence of machine-human interactions.

By looking at the psychic framework of a virtual world, we can begin to give content to the terms people already use to express their spatial intuitions of cyberspace. As I mentioned earlier, the vocabulary of cyberspace already makes abundant

reference to spatial intuition. This intuition of space is not weakly metaphorical, but it expresses intuition in the Kantian sense of *Anschauung*, that is, the basic ways we perceive and understand the empirical world. The "empirical" originally refers to the sensations we receive in experience. The way we move through information space, as architects well know, affects our feelings about being in that space. We already see on the Internet a large range of elementary spaces, although the Internet today lacks the immersion required by virtual reality technology in the strong sense of the term. As an intercultural testing ground, though, the Internet with its 3D spatial metaphors offers opportunities for translating aesthetic spatial experiences, like the tea ceremony. Current 3D simulations on the Internet's World Wide Web offer dynamic spaces that are gradually evolving with the introduction of VRML (Virtual Reality Modeling Language). Translating the tea ceremony to cyberspace can prepare us to think about the challenges of interface design that lie ahead.

Four Features of the Tea Ceremony

The tea ceremony is a technology for restoring the original abode, the original abode where the psyche feels comfortable with itself as a participant in the natural world. The original abode is where the world and the psyche interact harmoniously. Taoists referred to the original abode as the "face before you were born," where the energy embryo abides in the womb of the mother. In this case, the mother is Mother Earth. The human being breathes the energy of the heavens and conducts that energy into the support strength of the earth. The human being stands between heaven and earth, though most often it is distracted by the ten thousand things that claim attention in worldly life. To recover the stance of the full human being, a reconfiguration is required. *Sadô*, as the tea culture is known in Japan, reconfigures the psychic

framework of nature. It resets the human being into the natural posture, into the natural attitude. It restores the original abode.

The four features of the traditional tea ceremony correspond to the design issues of virtual environments. They relate, each in a different way, to the psychic framework that heals the breach between humans and nature. Those features are: *Wa* (harmony), *Kei* (respect), *Sei* (purity), and *Jaku* (serenity).

Wa, "harmony," means that a world must cohere. The pieces of the world must constitute parts of a whole. A world can only exist as what the German language calls a "*Zusammenhang*": things must "hang together." Aesthetically, this holism means a unified atmosphere. The tools of the tea ceremony might share a seasonal motif that deepens the sense of time and place. Autumn may appear in the floors, in the scrolls, and in the colors chosen for the tea cups. This feature of the tea ceremony appears in current interface design where the designer uses semiotic repetition to establish a sense of place. In general, the current Web is a wild collage without a clear semiotic system. Some young designers are trying to deepen the sense of place, of being somewhere, by repeating colors, images, and interactive buttons in such a way as to create a consistent sense of place. The places they create convey an internal harmony, though not necessarily a harmony with nature.

To create a sense of place, some Web sites use consistent border markings to establish semiotic harmony throughout the many rooms of the online space. "Harmony" is drawn from the Latin *ars*, "to fit." The fit that artists strive for today is to make everything in a world come together in such a way as to make that world stand out as a unique whole. The most basic ground of the world is an open space for participation. Worlds offer space for habitation, and the participants cooperate in maintaining the ground of that world. Most often, Internet

sites appear to be "one thing after another," without stasis or rest. By creating harmonious worlds, even jazzy worlds, the artist shapes an electronic abode, a place to dwell, perhaps even a space we can eventually inhabit.

Kei, "respect," refers to acknowledging the presence of other people or the sacredness of the materials we use. Computer communication establishes respect in a peculiar way. Computers isolate us as individual users at the same time that computers connect us in a network. Networks interweave human memories and make it possible to interweave our thoughts increasingly on a daily basis without regard to physical distance. Time barriers drop. Yet this is also where the danger lies. As time barriers fall away, the instant connection we have threatens to wear away respect. Respect seems to require distance. If we lose a sense of our distance from one another — our interior distances, the vastness of our spiritual landscapes — then we risk losing respect. Perhaps the avatars of virtual worlds, those surrogate personae of simulation, will help preserve the distance needed for mutual respect. While computers create an intimacy that connects mind to mind, they can also hide us from one another. Ideally, a virtual world would allow us intimacy with distance, much like the tea ceremony. The tea master Rikyu admonishes tea practitioners not to try to synchronize their feelings with those of their guests unless the harmony occurs spontaneously. [8] Without distance, true intimacy cannot arise.

Sei, or "purity," appears in the tea ceremony's austere minimalism. No wasted motion, no excess of any kind, always restraint. From the material point of view, it would be hard to think of any space more empty, more minimal than cyberspace. Some cyberspace software designers, like William Bricken of the

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[8] Found in Rikyu's writings in *Nanbo Roku* as cited in Leonard Koren's excellent little book, *Wabi-Sabi for Artists, Designers, Poets & Philosophers* (Berkeley, California: Stone Bridge Press, 1994), p. 82.

Human Interface Technology Lab at the University of Washington, conceive cyberspace as a Buddhist void, as *sunyata*. The emptiness of electronic systems offers an opportunity for pure creativity. The creative rush drives thousands of artists and would-be artists who now manifest their personal home pages on the Internet. Most of these creations show little restraint, as they arise from the call of open spaces that beckon the spirit in millions of people. For the designer, the purity of cyberspace may come with the territory, but purity does not last long. Cyberspace is rapidly filling with junk and junk mail. Advertisers litter the void. What we can learn from the tea ceremony is the discipline of restraint. We need to reflect the essential loneliness of cyberspace in the electronic environments we create.

Jaku, or "serenity," shares purity's fragility. Purity quickly drowns in clutter. Likewise, the initial serenity of cyberspace, its loneliness and focus, soon scatters with the noise of millions of messages. Cyberspace, especially in its newly found role as a source of commercial contacts, risks becoming a bedlam. Concentration and focus will be impossible if cyberspace becomes a circus. To the enjoy the circus, you will have to forget your purposes and go along for the ride. The serenity of vast cyberspace has been broken by the shouts of advertisers and the barkers who try to lure new customers. Perhaps the purpose of "knowbots," tiny programs with customized intelligence, is to keep down the noise. Knowbots can filter out distractions and remove the shouts of advertisers. The Internet already offers programs like *Fast Forward*, which invisibly remove advertising banners before they appear in the Netscape web browser.

But advertising is not the only obstacle to *Jaku*. As I pointed out in *Electric Language*, the language system on computers is an essentially linked language.[9] Hypertext reading shows the linked nature of digital writing. The loneliness of the

cyberspace void should not obscure the fact that computing solitude is essentially a social solitude. What we see on the computer screen may seem as intimate as the thoughts in our head, yet the onscreen vision links to millions of other computers, or—even if protected by firewalls—any screen may be recovered and viewed by thousands of anonymous others. Computer text is essentially linked text. When we write email, we may feel as though we are writing in a serene, private bubble, but in fact we might as well be shouting our message from the rooftop. Cyberspace offers no total privacy. Where there is no total privacy, there is no complete serenity.

Each of the four characteristics of the tea ceremony have a cyberspace correlate. These correlates appear to be metaphoric analogies between the virtues of the tea ceremony and the atmosphere of cyberspace, and they establish possible links between the two. What I am suggesting is that we apply the inspired qualities of the tea ceremony to our efforts to deepen computer-generated environments. Where we have a loose link or analogy today, we can have a rich experience tomorrow. Interface designers struggling to shape a sense of place on the Internet can lead this process of enrichment. Such a struggle will not be easy, however, as the analogy between cyberspace and the tea ceremony faces many challenges.

Challenge of the Tea Ceremony

Foremost among the challenges is the simple fact that cyberspace is dynamite. It is inherently dynamic and explosive. Online communication accelerates the tempo of life. The faster our interpersonal communications, the faster will be all our other social interactions. As the cliché affirms, the very rate of change continues to change. Just look at someone browsing the World Wide Web, and see how the screens flash past, one

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[9] *Electric Language,* pp. 160-64.

after another. The television remote control has become the daily mode of reading. Reading is no longer contemplative but has become thoroughly dynamic. The dynamics of hypertext enter the user's psyche and alter the felt sense of world. The world we feel is undergoing an ontological shift, a reconfiguration of the cultural tectonic plates that support all our other activities. Change the way we organize and access knowledge, and you eventually change the world under our feet. The world that is emerging from hypertext appears to be a "hyper" world in the sense that psychiatrists and health-care workers use the term: agitated, upset, pathologically nervous.

Cyberspace brings with it a pathology that I have called "Alternate World Syndrome." *AWS* breaks the harmony between the biological body and the cyberbody. The experiences in the virtual world bring the body out of sync with the ecology of planetary experiences. *AWD* (Alternate World Disorder) represents an illness of lifestyle.[10] I discovered these while researching the simulator sickness that appears in many virtual-reality systems. The military have done extensive research on simulator sickness, and much of that research points to serious problems ahead for a culture that frequently uses virtual reality. The high-speed dynamics and aggressive tempo of cyberspace brings with it a disharmony between the earth-rooted biological self and the digitally trained mind. The person is split between personal experience based on computer life and personal experience based on felt bodily awareness. The more we move into virtual worlds, the thinner becomes the umbilical cord that ties us to the earth.

The artist currently faces the challenge of creating electronic habitats for humans to dwell in cyberspace. Traditional design

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[10] More about *AWS* and *AWD* appears in my book *Virtual Realism* (New York: Oxford University Press, 1997), but also in an article in the Summer 1996 issue of *Mediamatic* magazine, Volume 8, #4, pp. 76-81. The first references to *AWS* appeared in my book *The Metaphysics of Virtual Reality* (New York: Oxford University Press, 1993), chapter 9.

fields largely emphasize the art of composing static surfaces. Balance, focal point, and contrast are usually understood in static ways, from a steady, single point of view. Now, electronic design confronts artists with a dynamic, interactive, high-speed electronic environment. Traditional design skills need serious revision as transitions assume a more important role than static surfaces. Designers must ask: How does it feel to go from one screen to another? What is the atmospheric link that connects one flashing screen to another? How does a series of linked screens express the underlying knowledge base? Traditional design principles need revision in the face of a new medium. Film and video offer some clues, but interactivity still remains a challenge.

Even among filmmakers we see great caution about the dynamism of future media. In his film *Until the End of the World*, director Wim Wenders shows a population plagued by video disease. Eyes, minds, and hearts have become weary with continual exposure to powerful images that tap into and stimulate every aspect of the human psyche. Worn down by the pace of flickering images, the video-crazed protagonist of Wenders's film becomes literally blind. He seeks healing for his video disease by traveling to Japan and undergoing a Zen therapy treatment not unlike the tea ceremony. The therapy is reminiscent of what Taoists called "the sealing of the five senses." The Taoists believed that overuse of the senses, especially the eyes (the most yang-powered organs in the energy, or *chi*, body), depletes the powers of vision. The internal energies need occasional " sealing off" or closure by turning within to heal the senses and restore their power. Higher stages of meditation require that the senses be sealed so that the spirit (*shen*) can draw on the energy drained out of the senses by their daily use. I see the Wenders film as a parable about interface design in the age of virtual reality: We need the tea ceremony to heal the Western split between the body and the mind, between the overused, electronically stimulated

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sensibility and the earth-centered, serene poise of our natural good health. The tea ceremony can inspire, I think, such a crucial balance.

In this spirit, Muneharu Yoshida has developed a multimedia online tea ceremony. Using Macromedia *Director* and Adobe *Photoshop,* he built a *Shockwave* application that invites the online browser to contemplate the contrast between the traditional tea room and the space of electronic habitation. Some of the images from Yoshida's tea ceremony suggest we "take off our shoes." The images beg us to reflect on our body amnesia and the possible co-existence of cyberspace and the tea ceremony. The flat 2D photos warn of the end of non-interactive representation, while the photorealism imposes the demands of texture, richness, and multi-sensory immersion.

Reflections at Ryoan-Ji Garden

I conclude with some comments on the famous Rock Garden at Ryoan-Ji Temple in Kyoto, which has come to stand for the Zen esthetic.[11] The Zen rock garden is a cousin to the tea ceremony and it was inspired by the same Zen culture that produced *sadô*. The Ryoan-Ji Garden reveals other aspects of the tea ceremony relevant to virtual reality.
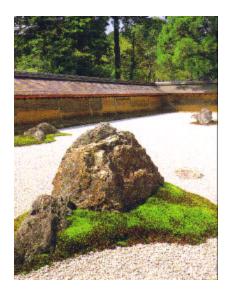
Every garden, since the Garden of Eden, has been artificial, a creation. But of all gardens in the world, there is none whose artificiality is more pronounced than that of Ryoan-Ji. Indeed, one might be tempted to call it not a garden at all but a piece of abstract art, or the abstract essence of a garden. It is more the pure idea of garden than any actual, messy garden. It is a product of elimination and pruning. While evoking the texture of water by means of raked white sand, and forested islands by

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[11] Again, I want to acknowledge the help of the Zen adapt Professor Ryosuke Ohashi, who generously shared with me his own reflections based on years of meditation in the Ryoan-Ji rock garden.

fifteen dark, moss-covered rocks sunk into the sand, the Garden stands as an artificial abstraction from the surrounding park of Ryoan-Ji Temple with its abundant trees, bushes, and lagoons. The garden walls create an atmosphere of isolation that allows the inner to be highly stylized while still preserving a look beyond the walls at the trees and mountains surrounding the park.

On first seeing Ryoan-Ji, one is tempted to interpret it as a symbol or an abstraction of a garden. Yet the material elements, which Ryoan-Ji reduces to a minimum, should not be taken to " symbolize" anything at all, for the mountains in the garden are indeed rocks, and the watery sand is in principle an ocean, and the green growth on the rocks are miniature trees. This perception is especially true as it grows in the viewer who spends a couple hours sitting within the restricted walls of the rock garden. Though minimal, these things are what they are in the same sense that William Blake's "world in a grain of sand" suggests that the world is built of earth and the earth is actually sand. The proportionate reduction of the world can compress it to a small size and make matter into a matter of relativity. "Pruning" or "trimming" happen in a radical way in this rock garden. By trimming back everything but the essentials, this garden allows us to contemplate the great earth and its oceans.

Moreover, Ryoan-Ji brings us to contemplate our own place as inhabitants of the great earth and its oceans. The garden at Ryoan-Ji presents the paradox of abode. Abode or inhabitable place becomes the puzzle of abiding as we sit on the wooden boards within the monastery walls. You do not "understand" the rock garden by stopping to look at it once. Rather, you encounter in it your own impatience as you feel the drive to go elsewhere, to turn from the stark, uncompromising scene, to be elsewhere. Our sense of presence and of being present wavers and fluctuates, and the garden confronts us brutally with our

own fluctuations. We do not easily gain access to the garden as a place to dwell. It repels us again and again, until we face our impatience and finally give up the effort to fit the garden into our preconceived categories (How many stones are there? What's the best point from which to view it?). Ryoan-Ji is clearly a place for practice in the German sense of *Übung* (disciplined, repeated contemplation). The garden forces us, if we take its challenge, to gain a deeper understanding of what it means to inhabit a world.

Inhabiting a world implies more than one superficial look, more than a glance from a single perspective. As we gaze on Ryoan-Ji, we are repeatedly drawn to organize its stones perceptually from many different angles. Each time our eyes catch a pattern in the clusters of asymmetrical rocks, we notice that even the slightest shift of position gives us another very different pattern to view from another vantage point. After many such experiences, we gradually realize that the garden is nothing other than a sequential presentation of a variety of viewpoints. All the perceived patterns viewed together — taken as an infinite number of slices — constitute the total garden. The implied perspectivism of the garden brings out the relativity of each viewpoint. The sequence of viewpoints can never be ordered once and for all for any finite viewer. The movement of human physiology guarantees random access and infinite variety. The world of the garden, its totality, exists only through simultaneous perspectives. The garden exists in the imagined totality of the multiple gardens glimpsed by an infinite number of sense perceptions. The garden exists only as

the hidden oneness that eludes direct sensuous perception.

The optics of sensuous perception, so crucial for research in virtual reality and computer-generated telepresence, grow in importance as we contemplate the rock garden. No photograph, no picture can possibly convey the 3D optical experience of Ryoan-Ji. By confronting us with the bare essentials of patterned landscape, the garden makes us painfully aware of our physical orientation in space and shows us how critical that orientation is for our visual field. Virtual reality systems — especially the immersive type of VR with full head-mounted display — work by coordinating the body's orientation in space with the visual display of computer-generated graphics. We turn the head slightly to the left, the Polhemus position-tracker sends feedback to the computer which then updates the visual eye-display to show the scene from the perspective we now occupy. Precisely that connection between bodily and visual orientation constitutes an essential feature of virtual-reality telepresence. The unique aesthetic of Ryoan-Ji draws attention to this perspective-based, orientation-centered ecology of human presence. Our sense of reality is stimulated by Ryoan-Ji in such a way that we can better understand the challenge posed by telepresence. The harmony of bodily orientation and sensory perception belongs to our fundamental ontological experience.

Through patient practice, through long being present in the garden as an abode of contemplation, the rocks at Ryoan-Ji

begin to move. The asymmetrical position of the stone clusters — from any number of seats at the garden's edge — sets the patterns in perceptual motion. The eye senses a play among the forms. This play belongs to the reality of the stones but also to the psychic atmosphere of the perceiver of the stones. They move in patterns as a play of the relaxed gaze that surrenders to the garden, to the place as an abode for dwelling. This intense breakthrough is a deepening of place, of being more fully present, of being present with alertness but without an ego will. It is a breakthrough to the harmony of perceiver and perceived.

In coming decades, we will build virtual realities in cyberspace. To create true places in cyberspace — places where we can dwell — we must soften the aggressive drive of our perceptual apparatus. No amount of willful visualization techniques can harmonize the perceived and the perceiver. The human sense of presence requires paradox as well as technical ingenuity. Even the best illusion remains always an illusion until we forget ourselves in the play of perception. Real telepresence requires a deep harmony of the active viewer and the virtual abode. No cheap tricks can achieve such harmony. Only long experiments by artists, who patiently apply wise traditions, can bring about the still point of presence. Perhaps, the still point of presence, enhanced by electronics, may one day become omnipresence. Then the Zen of the garden and the virtual worlds we inhabit will cease to be two different things. Then, all space and time will fold into a harmonious play of perception, and cyberspace will be our rock garden.

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