Premiere Issue

THE MAGAZINE OF ART AND TECHNOLOGY

CyberStage

FALL 1994 $4.50

Brenda Laurel
The TechnoDiva Speaks

VideoCabaret
Still Crazy After All These Years

The Erupting Mind of
Derrick de Kerckhove

McLuhan in the '90s

Howard Rheingold's Virtual Reality

The Future" of TV Ontario

And More!

"There really is serious tectonic activity going on in new media."

BRENDA LAUREL

The Technodiva Speaks

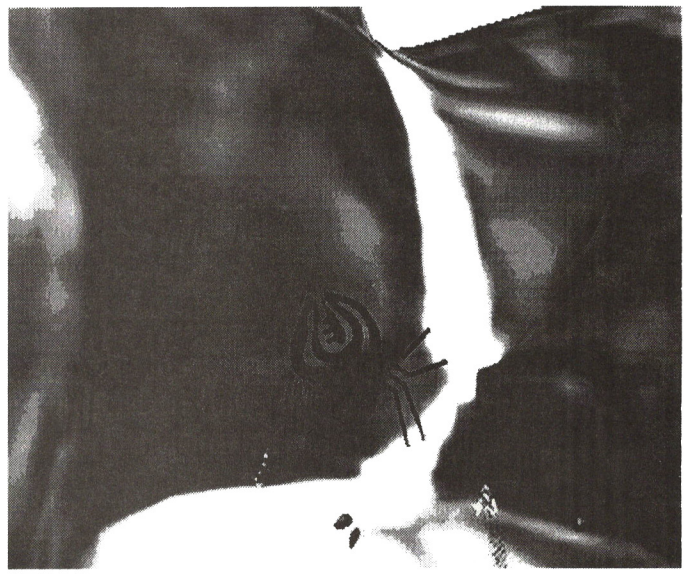
Brenda Laurel is the technodiva of the new electronic age. Part visionary, part rebel, her views on human-computer interaction are some of the most widely-quoted today, and given her ideas it is no surprise that her original background is not in computers, but theatre.

The editor of *The Art of Human-Computer Interface Design* and author of *Computers as Theatre*, she enlightens as much as she enrages. She brings a fresh perspective to the characteristically cold relationship between humans and their machines, and argues for ubiquitousness of technology to the point that it resembles the unity between theatre and audience, where the audience becomes a part of the action, moving towards a single, united goal. Laurel advocates the socialization of technology, the placing of technology in the hands of ordinary people so they can find ways of using it to express themselves. In other words, art.

"Tim Leary put together an eye-opening day for us in L.A."says Laurel. "I coordinate a group at Interval [Research] that studies technology and culture, and I wanted everybody to see what was going on in the world of slash video, because nobody knew. And we went out there, and he had a house full of fifteen-year-olds, mostly girls — mostly fucking girls — who had put together OUTRAGEOUS videos, and who couldn't really tell you how the machine worked, didn't give a shit, just pushed buttons till it came out right. It was real spinal cord stuff, and that's just happening more and more, and it's interesting because as consumer product guys make more and more of these zippy little tools, people find ways to reappropriate them."

In her book *Computers as Theatre*, Laurel argues that new principles of interface and software design can be extracted from theatrical conventions dating back as far as the time of Aristotle. "Throughout this book," she writes, "I have argued not for the personification of the computer, but for its invisibility." By using principles derived from theatre, Laurel believes that it is possible to design representational worlds in computers that leave the feeling of the "interface" behind. In essence, the computer will disappear, leaving only the user (or in Laurel's terms, the "human agent") and the task at hand.

There are at least two reasons, she writes, for considering theatre as a possible foundation for thinking about and designing human-computer experience: "First, there is significant overlap in the fundamental objective of the two domains — that is, representing actions with multiple agents. Second, theatre suggests a basis for a model of human-computer activity that is familiar, comprehensible, and evocative." Laurel observes how principles of theatre can assist designers in creating environments that help bridge the gap between human and machine, where the hard interface seems to vanish and all that is left is the experience itself.



Spider explores the waterfall in Placeholder.

Can this phenomenon really occur in human-computer activity? Laurel seems to think so. She describes an experiment by Loren Carpenter called Cinematrix done at Siggraph '93, an international computer graphics conference and trade show. "Five-thousand people were given paint-stirring sticks," she says, "and on the top of the stick was a card, one side of it reflective green and the other side was reflective red. And at the front of the theatre, there was a camera mounted that took video feeds into a computer that was looking for red and green, and mapping that red and green pixel for pixel onto a huge display at the front of the auditorium. So when people turned their wands they would change the colour of their pixel, but

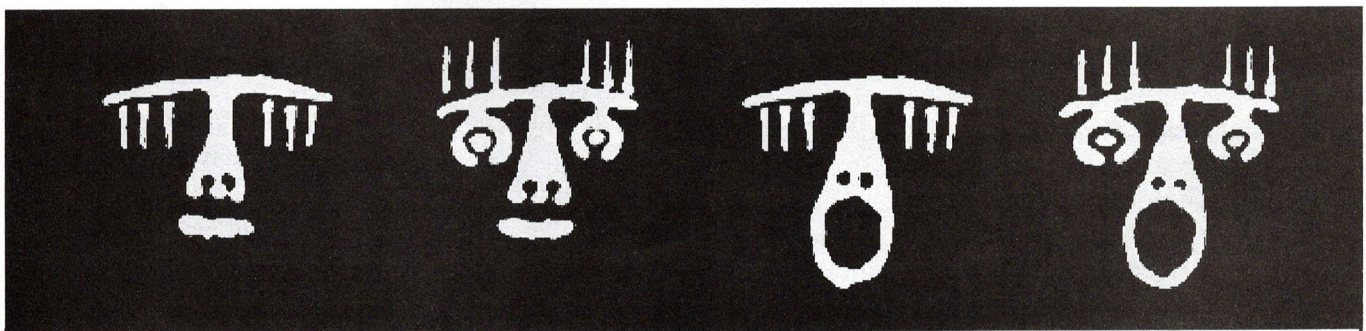
there were five-thousand pixels, so you literally weren't able to find yourself. But what happened was that with that strong visual feedback loop, within five minutes the audience was collectively playing a game of pong by moving a red paddle up and down through a sea of green. It defied any notion of how one might actually go about managing that many people to do a collective activity. By the end of the half-an-hour, the audience was flying a flight simulator."

Laurel's recent tenure at the Banff Centre of Fine Arts gave her and her partner Rachel Strickland an opportunity to experiment with some new techniques in virtual environments. "The piece was called Placeholder," Laurel says. "It was three virtual environments that were taken from the natural environment around Banff, and there's many a long tale about that. I think we broke some new ground. We did some significant experiments with ways of capturing natural environments cinematically and with head-mounted 3-D audio recording devices, and then figuring out how to construct a natural environment with those data instead of synthesized stuff.

"It was in the tradition of landscape painting where you have to make decisions about salients and match techniques to features that you want to emphasize. So we did three different environments in three different ways. We did a whole lot of research in folklore, and these environments were populated by spirit animals — four spirit animals — that sort of looked like petroglyphs. You found yourself in a cave, and a goddess spoke to you about the world and said that you had to move through the world by using the spirals, and that you could merge with the animals if you wanted. They talked to you and told you about themselves. If you stuck your head in one, finally, you put it on, and the other person in the world would see you as Crow, Fish, or something. And your voice would change, and how your vision worked would change, and how you moved around — so if you were Crow and you flapped your arms around you would fly. And then there were the special rocks around called Voiceholders that you could leave auditory graffiti in."

The view that one of theatre's functions is as a communication medium is certainly not a new one. Indeed, the original purpose of the theatrical-like rituals of early man was to communicate to the gods. Paul Heckel, in his book *Elements of Friendly Software Design*, notes that inventions which were intended primarily as communication media evolved into artforms over time. Software development, he says, is a newcomer as a communications medium. The idea of the computer being an artistic device is alien to many people, but if Heckel's theory holds true it will not be long before we hold the computer to be as valid an artistic device as the theatre itself. Of course, this evolution is happening already, with designers using the computer in many other artistic forms, such as film, theatre, dance, and visual art.

It seems we are more ready to accept theatre as an artform than the computer because of the different points they are at in their respective evolution. But



When a voiceholder was empty, its eyes and mouth were closed and it was dark. When a person touched an empty voiceholder, its eyes would open and it would light up from the inside (rather like a jack-o-lantern) and a voice (emanating from the voiceholder) would say "I'm listening." If a person spoke when a voiceholder was in that state, their speech would be recorded. When the voiceholder became "full" (ie. ran out of space in the sound file it was creating) the inner light flickered and then when out rather like a guttering candle, the eyes would close and the mouth would open to indicate that it was ready to speak. If a person touched a voiceholder in this state, it would open its eyes, light up and play the contents, then it would "go to sleep" again.

both art and technology can be used as instruments for human expression. As Laurel puts it, "I believe, like Terrence McKenna does, that the human spirit extrudes technology as an expression of itself, that technology is no different from art in that sense, and that we have to take this seriously and pay attention to it. The reason I'm interested in VR (virtual reality) is that VR is by definition some place where there's no interface — my body, I move my arm, I turn my head, I focus my eyes, that's it. That's how it ought to be. So what if that were true? What could it be like? What it means is that we get to make our fantasies palpable and shareable in ways that they haven't been before. And that's been the relentless pursuit of our species, since we invented cave painting, and language, and dance, that's been what we've tried to do. There's gotta be a payoff."

What it [VR] means is that we get to make our fantasies palpable and shareable in ways that they haven't been before. And that's been the relentless pursuit of our species.

It is becoming apparent that the direction of interface design is evolving into a more theatrical, interactive approach. Laurel puts it this way: "I think that the general impatience with interface has been growing, and we've seen such a huge leap in the mass market penetration of computers that it's just clear that people won't put up living with some kind of dweeb ghetto to work with them. In the last three years — and I don't know the actual numbers — but the penetration of computers into the home has gone over the top, like big time, and with the computer components that are involved in everything from cable television to the more sophisticated two-way stuff, it's just clear that people aren't going to put up with the 'Windows look-alike' even."

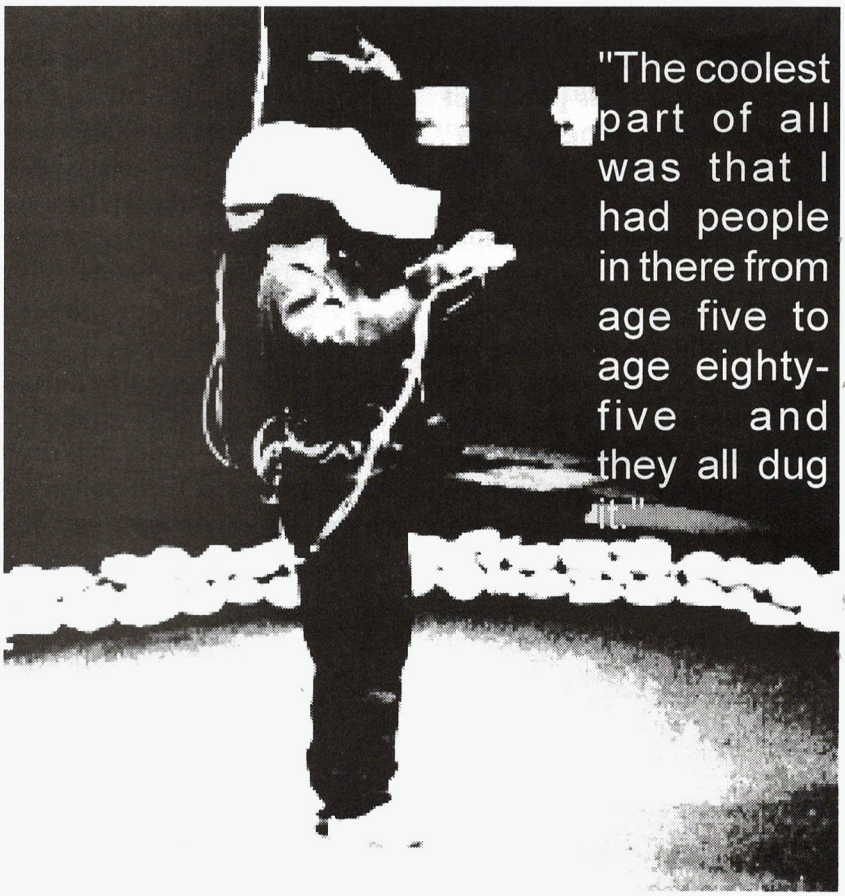
There are other examples of this movement. Text-based interfaces are becoming increasingly unpopular when there is no greater visual stimulus associated with it. Books like Douglas Coupland's *Generation X*, written for the highly-visual twenty-somethings, contain "help-screens" in the margin which define terms in the narrative which may be unfamiliar to some. On-line research catalogues are now beginning to include multimedia visual representations of the items to which they relate. New interfaces in computer-mediated communication, such as e-mail, give a person's on-line persona a graphical representation, as in the ImagiNation Network, a commercial entertainment network similar to CompuServe with the exception that text-based interfaces are replaced with graphical agents which add a more visual context to the activities. An increasing number of video and arcade games present the virtual-character in a first-person point of view, alluding to the direction of development in virtual reality.

What is the artist's role in all this? As Don Norman states in his preface to *Computers as Theatre*, "Today, the technology is provided by the technologists. It is, therefore, no wonder that most new devices, including computers and their software applications emphasize technology over all else." If technology is to evolve from a medium to an artform, artists must become more involved in its development.

Are artists becoming more involved? According to Laurel they are, "... [but] not enough. It's sort of hard when it does happen, because there's a lot of lip service that goes on. And it's still the case that the arts are seen as a cosmetic enhancement to the elegant programs that are formulated by our much-wiser brethren in the engineering trade. It is not the case that artists are taken seriously in the mainstream business of inventing serious shit that people intend to sell and make money on, except [in] games, and even then it's only a certain [type of artist] who gets to dabble in that."

Laurel's own approach to human-computer interaction is one example of how the arts can take a larger role in it, but there are more. When artists experiment with a new medium to see what it can do, they inevitably make creations which can be shared with others. It is at this point that the medium becomes art. Cur-

rently, many artists, like most of society, are intimidated by technology. But as Myron Krueger observes in *Artificial Reality II*, this was not always the case; historically, artists were the first to embrace new technology since they could use it to communicate to the greater society. Laurel gives examples: "The invention of periaktoi, the megaphone masks that were worn in the Greek theatre that amplified voice, and the *deus ex machina* stuff. Certainly, Italian Renaissance stage machinery was big science. I mean, photography was science, film was science. So that's not news, that's kind of always been true. It seems to me that the really exciting shit that happens in art [is that] when somebody invents a new style, like cubism, it's at least informed by the scientific discourse of the day. In the case of Impressionism there was discourse around how the eye worked, that led to all the experiments in pixelation in French painting, for instance. So if you look at art history you can see that that's [true]."



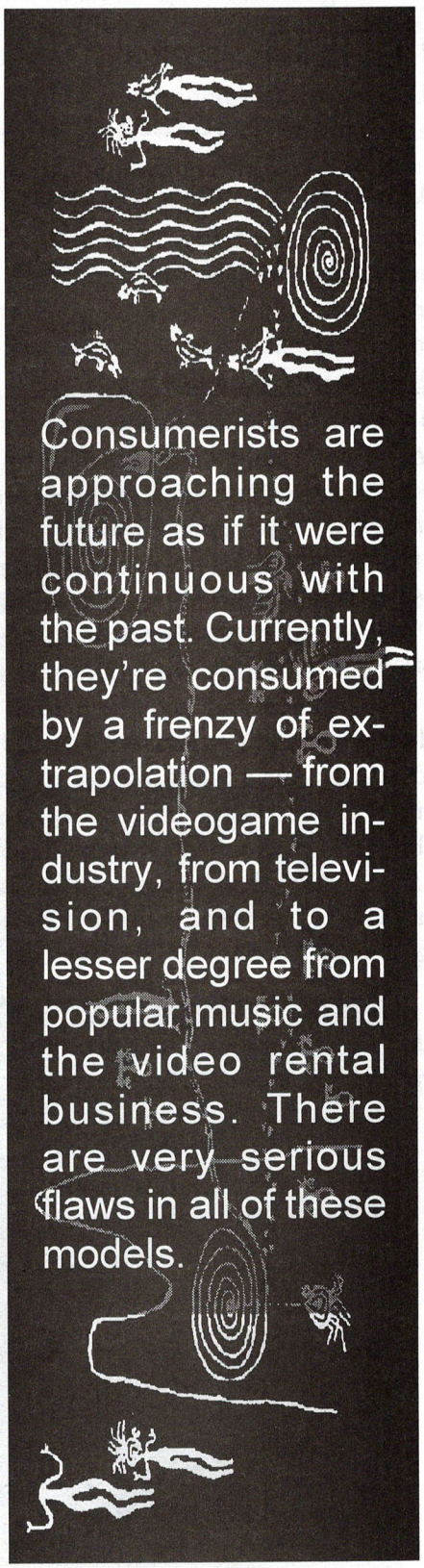
Krueger also asserts that in the twentieth century the scientific and artistic communities grew farther apart as science progressed at an unprecedented rate; an artist could not keep up without becoming a scientist himself. A polarization between the two communities resulted. Indeed, the only artists at the time who worked with technology were the emerging performance artists who came primarily from France in the early part of the twentieth century, but their work was often marginalized due to their absurdist content; still, it can be said that the work of today's technology-artists has roots in this performance art. Part of the appeal that both Krueger and Laurel make is to encourage today's artistic community to get involved again, to actively participate in the development of new technologies. Only then will new media become new art. Laurel writes in *Computers as Theatre*:

"Artistry and structure are interdependent; both must be present if beauty is to be the result. Perhaps more important in the stage of the evolution of computer-based media is the fact that artistic sensibility must drive the notion of desired experience from which the design of technological components must be derived."

Many artists who embrace technology are beginning to realize that this expression of beauty involves a balance between the glitz that the hardware can provide and the message that is being expressed. Laurel makes this point: "I'm beginning to believe more and more strongly that it's really about what art has always been about, namely figuring out how to elegantly create spaces of the right shape and size that invite the imagination to do something that feels good, as opposed to packing people's heads full of stimulation. And we've been through that sort of TV stage of computer games, and now we're trying to figure out what comes next and then we're getting down to business. It's really kind of neat, I think."

Laurel's own model for human-computer activity typifies the contribution that art can make to tech-

nology. But what are some of the challenges that artists face in this new age? Ultimately they will face some kind of struggle between their desire to practise their craft and the pressures of a consumerist society to produce something commercially packageable. This is the new dividing line, as Laurel sees it. "New lines are being drawn; in the present day it will certainly become apparent — if it's not already — [that it] is no longer between the artist and the technologist or the artist and the scientist. It's now the artist and the scientist and the technologist on one side, and the industrialist consumerist marketeer-entrepreneur on the other. Consumerists are approaching the future as if it were continuous with the past. Currently, they're consumed by a frenzy of extrapolation —from the videogame industry, from television, and to a lesser degree from popular music and the video rental business. There are very serious flaws in all of these models. None of them has anything to do with content that is authored by a person for another person — that's what the telephone has done so well; in 80 years you never heard the telephone company worrying about where its content was coming from. The videogame boys think that content is made by them for a particular segment of young males, and their whole industry is coagulated around that goal with its testosterone-poisoned worldview. From design all the way to retail, it's tight as a drum.



"The television people still think that they, too, have a privileged voice. I remember watching the Viacom/MTV people try to 'manage' an Electronic Cafe link between the cafe in Santa Monica and Viacom in New York. There was some insipid Vee-Jay trying to act like a switcher, trying to focus our attention and produce the thing like it was a broadcast. Poor fucker just couldn't get it through his head that there was a great big two-way channel open *all that time* and what it was about was two live communities having remote presence with each other, not some TV weenies shoving the whole experience into their little funnel and showing whatever they thought was interesting at the other end.

"Both artists and techno-net-heads get that

"It's no accident that we've extruded means by which to contact one other without the mediation of broadcast gatekeepers, that we've blown apart a paradigm for communication that's existed as long as anybody can remember."

what's afoot in our culture is a need to revitalize the idea of community, to find new ways for people to construct and transmit messages and experiences with personal meaning and relevance to one another. This is a completely different idea. It will triumph, but we will have to watch the old order galumph around the stage awhile longer, making their grand statements about convergence and acquiring each other until their adrenalin's exhausted. It will be just as hard as ever, for a while, for an artist to do anything but special effects and commercials, until this act in the consumerist melodrama is over." Laurel adds that "disempowering artists is not a particularly good commercial strategy as long as they're doing the flavour of art that suits you, that you can make money on. But, if you make tools to work for those guys who are doing the nice groovy TV commercials, then the tools are out there, you know, the Pandora's Box is opened — people get access."

Laurel is obviously not pessimistic about the future of art or human-computer interaction, because she believes that the reason that such things as virtual reality and the Internet were invented is to give us the tools we need to claim our humanity back. "I believe that's entirely what it's about," she says, "we are saving ourselves. This is a last-ditch deal, here. Tim Leary sees it one way, Terrence McKenna sees it

Spider and fish roam around a voiceholder

another, and they are good people to triangulate with. Tim says that when we can screen each other's minds — when I can see your mind and you can see mine in some way — that some group consciousness will emerge. Now, before you laugh at that, remember those red and green sticks. Terrence says that the course of human evolution is really the story of humanity trying to turn itself inside out, to exteriorize the mind. He believes the world is all text, and he means that in a metaphorical way. But no matter which religion you subscribe to, the fact is that we are making this stuff to try and save ourselves.

"We're a collective organism now. Our species, as a species not as a collective of individuals — although individuals wiggle the species like the tail wagging the dog — holds its own destiny in its own hands. It's no longer up to any one person. We've all got to get on some new beam here pretty quick. It's no accident that we've extruded means by which to contact one other without the mediation of broadcast gatekeepers, that we've blown apart a paradigm for communication that's existed as long as anybody can remember. And that we have invented this smart companion for ourselves that can do a whole lotta shit. And we're doing it for a reason, it's because we're hitting a wall with all the old patriarchal ways of being in the world — with the Old Testament idea of dominating nature, with the idea of commercial interests owning and controlling our stories and our dreams, with the idea of consumerism that says it's okay to sell you anything I can make you want. This shit is all wrong, and it's going to kill us. And if we can't talk to each other directly about it and feel it in our collective spinal cord, we're gonners. It can't go the way it's gone before, and that's why we made the Internet, and that's why we made virtual reality. And that's why we can't stop at information superhighways or interactive TV, why we've gotta go do the next thing."