The Dimensional Internet

The optimism generated for computer-constructed, three-dimensional Internet spaces in the closing moments of the last millennium may now, half a generation later, seem naïve. When the 3D Web standard VRML has been pronounced dead more often than painting in New Media circles; when there is not a pre-installed ubiquitous plug-in standard for easy viewing; when making work in this arena is always problematic in terms of stability and delivery; then why do artists continue to be drawn to it? What spaces still exist for independent and experimental art projects when most online 3D Internet content has been developed under the commercial auspices of massive multi-user games such as EverQuest and Lineage?

In May 2003, lab3d, a symposium and exhibition curated by Kathy Rae Huffman and surveying the world of the dimensional Internet and the landscape of computer games was held at Cornerhouse, Manchester, UK. 3D works by John Klima (USA), Feng Mengbo (China), Michael Pinsky (UK), Melinda Rackham (Australia), Anthony Rowe of SquidSoup (UK), and Tamiko Thiel (Germany/Japan) were installed throughout the gallery. Additionally, over 20 works from the international juried Web3DArt2003 exhibition -- including projects by Simon Biggs (UK), Steve Guynup (USA), Roya Jakoby (Germany/USA/UK), Patrick Keller (Switzerland), Adam Nash (Australia), and Grégoire Zabé (France), were shown on monitors simultaneously at Cornerhouse, the ICA London, Folly in Lancaster, and the Experimental Art Foundation, Australia. Accompanied by a series of workshops and seminars, lab3d provided perhaps the most comprehensive overview of this diverse and intriguing arena to date.

Yet another dimension was added to this wide-ranging investigation in June 2003, when the online forum -empyre- hosted in-depth discussions of the issues raised by these shows with

Web3D -empyre- lab3d

I know that I have become a traveler in a realm which will be ultimately bounded only by human imagination, a world without any of the usual limits of geography, growth, carrying capacity, density or ownership. In this magic theatre, there's no gravity, no Second Law of Thermodynamics, indeed, no laws at all beyond those imposed by computer processing speed... and given the accelerating capacity of that constraint, this universe will probably expand faster than the one I'm used to.

Welcome to Virtual Reality.
(John Perry Barlow, *Being in Nothingness*, 1990)

Inframonde - a participative landscape
Régis Albignac [landscape designer], François Lemarchand [php programmer], Grégoire Zabé [web3D artist]
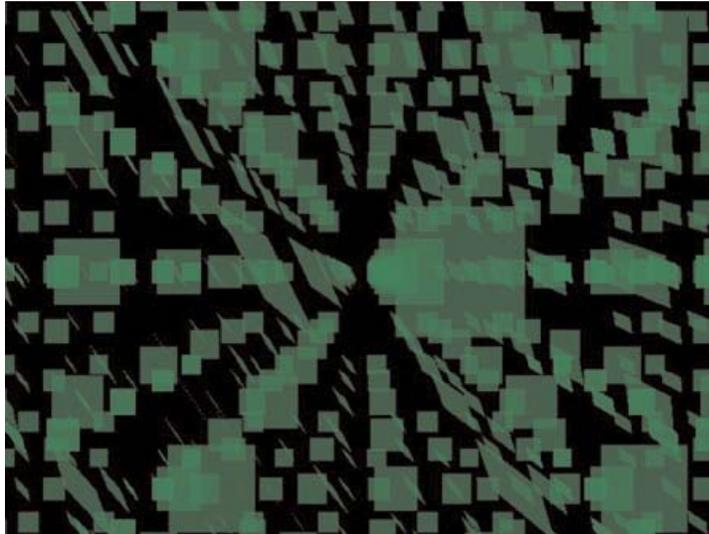
Melinda Rackham

artists from both lab3d and Web3DArt2003. Members of -empyre-'s lively online community added many insightful contributions to the debate. The conversation dissected issues including the nature and renderings of 3D space; the relation of 3D games to 3D art; the creation of narratives within virtual environments; the cultural specificity of 3D art; and the aura of the 3D art object. Collectively, -empyre- explored virtual environments as reactive organisms or 'artificial life' forms, wandering into the aesthetics of single- and multi-user worlds and the difficult, though not insurmountable, issues of showing and funding 3D interactive, networked artworks in a gallery and museum system that is traditionally set up to show less physically interactive art forms. Following are some sample slices from the topics discussed.

metaphysics and technicalities

"It's the metaphysical space that offers the possibility of new perspective." Canadian writer Jim Andrews opened the discussion with his observation that being able to see things from more than one perspective or from a point of view outside oneself was the attraction of 3D. This metaphysical space created in VRML artworks like my project *Empyrean* -- a micro- and macro-, soft-bodied multi-user cosmos -- is concerned with poetics and conceptual content rather than with imitation of real world spaces. Grégoire Zabé, an artist and designer who often works with telepresence thematics reminded us that we are all involved in the "art of illusion." However, even though the technology that artists use to make 3D art worlds may be advancing quickly, issues of navigation, interaction, and presentation can still prove to be tricky. An issue encountered by many online viewers of 3D work was that of the accessibility of plug-ins and

the challenge presented by the lack of standards in 3D online spaces. Currently UK-based Roya Jakoby finds "all these requirements for viewing very irritating and annoying. I personally prefer work that is

Memory Forest form *Memory Plains Returning* Adam Nash 2003

accessible for the broader public and simple in its technical and ideological requirements. Where would all those 3D sculptures and landscapes take me if I could visit them all?"

Although some of the artists use Flash, Shockwave3D, or a game

patibility, while Contact is slightly faster and allows for more flexibility in multi-user sites. Cosmoplayer, the preferred plug-in for many years, is no longer being developed after it was bought by Computer

Associates International. Furthermore, CAI agreed with Metacreations to not open-source the code, which was a blow to the entire 3D community.

Keeping work conceptually complex but technically simple seemed to be a way to overcome imposed incom-

"It's the metaphysical space that offers the possibility of new perspective." -Jim Andrews

engine, most still employ VRML. It is an international standard (ISO), which ensures that the technology is non-proprietary and freely available. Long-time Web3D community member Steve Guynup, who describes himself as a "blue collar" developer, provided an overview of the battle between major software companies over standards and plug-ins. Currently, there are only two actively supported VRML plug-ins -- Parallel Graphics' Cortona and Blaxxuns' Contact. The plug-ins are not completely interchangeable: Cortona has Macintosh com-

patibilities. Most artists aim for relatively low polygon counts to enable modem-using home audiences to experience 3D work with some fluidity. Others, like John Klima, whose networked software *Earth* -- a geo-spatial visualization system -- also has a Web-based component, has found that "native Java allows the widest possible compatibility and needs no plug-in whatsoever. In the end, compromising visual quality and performance for broad accessibility made the most sense for Web distribution."

Programmer and composer Adam Nash, who utilizes multi-user 3D space as a live performance medium, believes that Web3D artists need to develop an appropriate vocabulary to identify the qualities that set Web3D apart from 2D technologies, rather than adopting one based on cinematic precedents: "The verb 'seeing' is inadequate. Perhaps 'experiencing' is more appropriate." Tamiko Thiel, co-author of *Beyond Manzanar* -- a metaphorical landscape that is based on one of the internment camps built to incarcerate Japanese Americans during World War II and explores scape-goating of ethnic populations in times of crisis -- agrees that "experiential virtual environments" is a good term to distinguish these non-competitive works from games such as *Myst*. However, she adds that one needs to distinguish between "full physical / perceptual immersion, where you can't see anything else; perceptual / kinaesthetic engagement, where you can see the rest of the environment but the virtual image still affects your kinaesthetic senses;

and a compelling artwork that holds your attention."

Nash also addressed the problematic avatar-as-human idea and proposed that the abstract qualities of immersive spaces can be used as part of a performance experience. The multi-user version of his *Memory Plains Returning* was performed during lab3d, with both an online audience and a physically present audience in Folly and Cornerhouse Gallery. The avatars, composed of different sections of the piece, were "conducted" in a highly structured performance to *become* the space, visually and sonically. Nash doesn't "believe in the myth of 'suspension of disbelief,'" thus including the audience in the performance. As Nash explains, this allows him to "thoroughly inves-

which is as satisfying as a live performance in any other medium."

the art and aura of 3D

Roya Jakoby, who aims to create virtual art objects -- such as *Rise + Shine* -- that express themselves without making use of stereotypical allegorical references or multi-layered narratives, asks, "How can digital artists tell stories without words? Should they? Is it possible?"

As Steve Guynup, author of the romantic *Crystal Cabinet* points out, "we negotiate time with the user... Much of what we do to define space is really to affect time." The mere movement through space in itself creates a narrative, and artists as space builders completely con-

---

> # "How can digital artists tell stories without words? Should they? Is it possible?"-Roya Jakoby

---

tigate the medium's properties and create a performance, unique to it,

trol time and space in the initial creation of their world. Thiel agrees that artists "choreograph" the user's experience: "we set up structures of space and embellish them with constraints and lures in order to shape the possible experience that the user can have in that virtual space." Setting up dramatic structures is a common strategy to encourage user engagement.

Commenting on the artist's and the viewer's influence on time, Grégoire Zabé argues that, in a certain way, both authors and spectators are "modelling" time, or sharing time in a relationship axis between creator and user that is unique to Web3D: "The dimension of a shared and delocalized space is an important part of Web3D for me. We can access and act on it at any time / everywhere we can find a computer and a connection. The spectator can perturb the space, make variances, and leave a trace of pres-
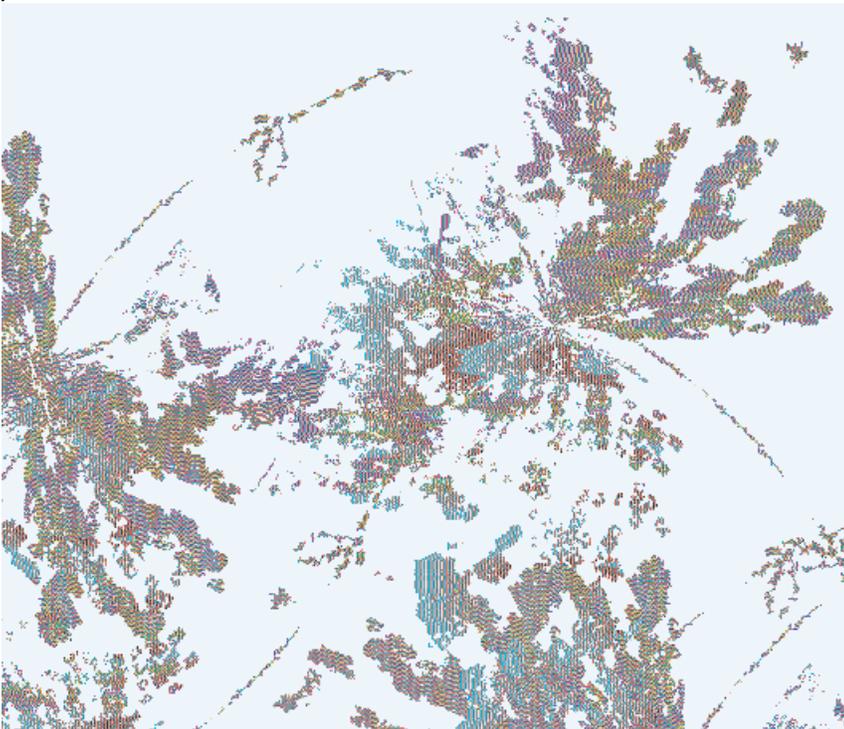
Rise + Shine
Roya Jakoby

ence / absence in the work." I proposed "that the relationship between 3D time and space, and components like sound and color have some fundamental overlaps, not existing in separate axes or dimensions but intertwining in the continuum of 3D space. Consequently, users are never free, they may have myriad choices but in computer-constructed space -- in fact, in all space -- all one can suggest is a finitude. Within the structure of the VRML language itself, there is a geographic limit, a time limit, a processor limit, a pitch limit. The author sets gravity, collision, sensors and triggers, anchors, horizons, and controls what the user sees at a time, so one sets the physics and also the emotions of the world."

But perhaps there is no need to define these relations so strongly. As Alan Sondheim philosophically muses (with regard to sound), "This would, of course, depend on the definition of 'sound.' There are arguments that tone or color, for example, depend on perception. Certainly, there are vibrations, but sound might be of another color." Zabé, refreshed after a hike in Vosgian mountains in eastern France, raises another variable concept that may occur when one experiences Web3D, which is "to become captive (in French that word is a synonym of fascinated) of the strong 'aura' of screens." I couldn't help wondering, "just how do you define aura, the invisible thing outside the skin of a human or object? Is it a material property? Is it a vibrational effect? Or an electrical charge? Is it associated with commodity value, e.g. the aura of wealth? I believe electronic works have all of these. They do generate their own charge, rhythm, glow, hype, uniqueness, value. The users are also uniquely generating a vibration or rhythm within them. Every user's keystroke or mouse rhythm is like a digital signature."

Simon Biggs, whose work *Babel* uses the Dewey Decimal System as a mapping and navigation technique for the Internet itself, reminds us that "aura is projected onto the object by the viewer, not the other way around; a bit like those early theories, which had light and vision emanating from the eye, contrasting with current theories, which have external light sources emanating light, which is then reflected off the object of vision to the eye." Jakoby counters that a large part of museum and gallery culture is founded on the exhibition of objects that were taken away from the various imperial colonies, which originally had spiritual (cultural) meaning or aura attached to them. "It is an emotional, somewhat transcendent quality inherent in a being, an object, a piece of art (no matter what medium). Some people also refer to it as the energy (of something) or charisma."

Biggs retorts, "the aura is an article of faith, as these things often are. As Derrida points out, any text is only completely written when it has been read. Interpretation is half the

writing process." This prompted me to pose the question, "are 3D environments only alive when a user is in them? Do they have inherent qualities and fixed meanings, or are they like an elemental particle that can fit many different combinations? Do they become like a recessive gene when sitting on the server waiting for human presence to activate them? Is it the passivity of the space (or the potential of the

"Games represent, firstly, the highest level of technical sophistication within this medium… Secondly, there are the navigation and interaction paradigm that games introduce… Thirdly, there are the AI and behavioral algorithms advanced and developed by the gaming industry that seem to crop up in artwork all the time… Fourth, if the general understanding would be that a computer's sole purpose is for getting useful work done, there would be no possible hope that the computer could ever be perceived of as an artistic medium… Fifth, very occasionally, some darn good narrative unfolds within a game world… Narrative is, or can be, a form of art."
-John Klima

void) waiting for (hu)man to give it life?"

Writer Sue Thomas suggests that other things besides humans can act within the 3D environment -- "nonhuman things, data-things, manifestations" -- and proposes that, if flesh objects have electromagnetic fields, then perhaps the virtual object's 'aura' is the data 'thing.' Regina Célia Pinto adds poetically, "wouldn't this be just the definition of virtuality, the power of becoming?" Sondheim disagrees, stating that 3D environments are not alive: "Human interaction does give them life for that matter, the way rollerblades 'come to life' when someone is out skating. It's a mat-

ter of function and reception." He sees no delineation between the body and technology -- "We're prosthetic from the origin itself. Culture and language are already prostheses."

3D games and 3D art

John Klima, who has been obsessed with 3D graphics ever since he attempted to code a 3D maze on a TRS-80 with 4k RAM and failed miserably, explores the notion of games as being central to a discussion of new media art in general, and 3D art specifically: "Games represent, firstly, the highest level of technical sophistication within this medium… Secondly, there are the navigation and interaction paradigms that games introduce… Thirdly, there are the AI and behavioral algorithms advanced and developed by the gaming industry that seem to crop up in artwork all the time… Fourth, if the general understanding would be that a computer's sole purpose is for getting useful work done, there would be no possible hope that the computer could ever be perceived of as an artistic medium… Fifth, very occasionally, some darn good narrative unfolds within a game world… Narrative is, or can be, a form of art."

Game designer Tom Betts agrees that the games industry is a victim of all the evils of commercial exploits but points out that this also applies to most other forms of entertainment, and introduces a pivotal dilemma: "Games often provide a high level of interactivity but have poor conceptual content. Interactive art usually presents more abstract and complex concepts but has terrible interfaces / interaction." I admitted that "Personally, not being a dedicated gamer, I am perturbed that the gaming and film industries, which are becoming increasingly

intertwined, place an unconscious expectation of structure into the minds of onto users of 3D art, akin to the adrenaline- and hormone-driven action and porn movies. So when you get to a piece of 3D net art, you may feel let down before you even engage with it. The expected adrenaline hit isn't there, the addictive primate body chemistry peaks and troughs are absent. Viewers demand a lot from 3D art by comparing it to other media, never valuing it for its intrinsic qualities. The 72dpi aesthetic is beautiful, as is the lagged polygony and uncertainty of 3D worlds. 3D artists should stop trying to mimic other forms, accept the parameters of 3D art and work with the subtleties."

Writer and *Diablo* mistress geniwate states that she likes games and likes art but "in different contexts and different moods. I reckon that the sorts of experiences we seek from games and art are rather different; I think it is slightly misleading to try to put the two on the same experiential continuum." And in the same vein, artist and developer Lloyd Sharpe wonders, "why is there a need to look only to the 'larger / wider / bigger' audience when developing these works? Is it actually important to engage the same audience that is somehow engaged by the spectacle that is 3D kill fests?

[or maybe just tetris?]"

As Simon Biggs points out, "the values that underlie the whole [game industry] ensure that anything of value is crushed, and all you are left with is the pornographic exploitation of the 'user'... and 'user' is a good word, as the makers of this stuff are no different from the drug dealers who are looking to develop new 'user' markets (in fact, I have a lot more time for drugs than for contemporary media culture). The main gland I am interested in is the brain... not the adrenal or testes." Betts responds, "To me, the best art reflects the culture it exists within, not just the output of a brain. A brain doesn't function like a suspended entity divorced from the body, it's a reflexive system within the body. Art should be about more than just the life of the mind." To which Nash replied, "I don't think I've ever played a game that made me think. Art makes a person think."

Developer Jon Cates believes that being "enmeshed in digital cultures locates us in / on this terrain and among various aspects, such as game -> art -> video -> theory practices, commerces + histories. In terms of the expectations of the markets, we should not forget to call attention to the constraints of the local, regional, national + global art-

Crystal Cabinet
Steve Guynup
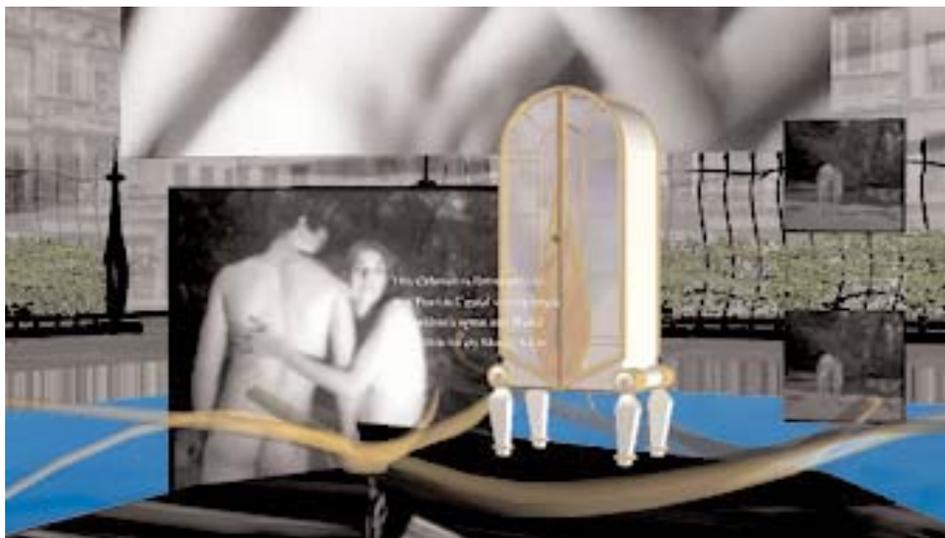
markets and the ways in which these constraints function to determine the qualities of the work produced." In other words, we are operating in a meta-narrative and can no longer completely disentangle art from games.

more

The 2D space available here unfortunately only permits a window into the vibrant and prolific -empyre- debates. Other threads not covered here include the dynamic exchange on Cartesian space and the nature of technologically produced dimensionality itself, which unfolded in response to Simon Biggs' statement that he wished to "escape the cultural hegemony of Western notions of space… and move away from the Western dualism that conventional 3D visualization systems are founded on." Another timely dialogue between Kathy Huffman, Patrick Keller, Patrick Lichty, Taylor Nuttall, Melentie Pandilovsky, and Brett Stalbaum was concerned with situating 3D art in the museum and gallery.

The full texts of the forum, from which all quotes in this article are drawn, can be accessed online in the -empyre- archives for June 2003 and will be additionally archived for posterity in the Rose Goldsen Archive of New Media Art at Cornell University. For a more comprehensive and detailed version, a freeware Reader with texts form both the offline lab3d symposium and the online forum -- co-edited by Taylor Nuttall and myself and co-produced by Cornerhouse and Folly -- will be available later in 2003 for web download or from participating organizations.

lab3d uniquely brought together the often virtual platform of multi-user 3D game environments and the social spaces of 3D worlds, with the majority of the works being simulta-

neously accessed both online and in the gallery space. Utilizing multi-user 3D artworks and multi-user communication channels opened up multi-dimensional real-time dialogues involving both a local and global audience. Together, the show, symposiums, online forum, and reader represent the work, issues, and debates of a strong, networked 3D community and extend the practice, presentation, and language of 3D art.

References:

-empyre- :
http://www.subtle.net/empyre
lab3d:
http://www.cornerhouse.org/exhibitioninfo.asp?ID=54
Web3D2003:
http://www.Web3Dart.org/n,250008,1.html
lab3d Reader:
http://www.subtle.net/empyre/reader

Artists:

Simon Biggs: *Babel*
<http://www.babel.uk.et/>
Steve Guynup: *The Crystal Cabinet*
<http://www.pd.org/~thatguy/crystal>
Roya Jakoby: *Rise + Shine*
<http://www.girlfish.net/motions/shine.html>
John Klima: *Earth* <http://www.cityarts.com/earth/>
Feng Membo: *Q4U*
http://www.mengbo.com
Michael Pinsky: *In Transit*
<http://www.michaelpinsky.com>
Adam Nash:
Memory Plains Returning
<http://www.yamanakanash.net/3dmusic/mprintro.html>
Melinda Rackham: *Empyrean*
<http://www.subtle.net/empyrean>
Anthony Rowe: *altzero5*
<http://www.altzero.com>
Tamiko Thiel: *Beyond Manzanar*
<http://mission.base.com/manzanar>
Grégoire Zabé: *Inframonde*
<http://www.inframonde.net>

John Klima
Earth