From Appearance to Apparition:
communications and consciousness in the cybersphere

Roy Ascott

"The mod does two things...it stops me collapsing the wave function; it disables the parts of the brain that normally do so. But the mod also allows me to manipulate the eigenstates - now that I no longer clumsily, randomly, destroy all but one of them."

"So what should we call it?"

"...neural linear decomposition of the state vector, followed by phase shifting and preferential reinforcement of eigenstates". She laughs. "You're right: we'd better think of something catchier, or the whole thing will end up being grossly misreported."

Greg Egan, *Quarantine*, 1992

Schrödinger's Cat has to be the most celebrated creature in the bestiary of science, and the paradox it proposes is perhaps the most complex in our understanding of consciousness and reality. It describes the problem of measurement at the quantum level of reality, the level of subatomic particles, atoms and molecules.This gruesome thought experiment involves a black box containing a cat and radioactive material positioned so as to trigger the cat's death if the particle decays. The process is quantum mechanical and so the decay can only be predicted in a probabilistic sense.The whole boxed system is described by a wavefunction which involves a combination of the two possible states that the cat can be in: according to quantum theory the cat is both dead and alive. until we observe or measured it, at which point the wavefunction collapses and the cat will be seen to be in either one state or the other. And just as the electron is neither a wave nor a particle until a measurement is made on it, so the cat is neither dead nor alive until we get to take a look at it. We are dealing here with observer-created reality. To look is to have the system jump from a both/and situation to an either/or outcome, the quantum jump producing what is known as the eigenstate. But there is no agreement amongst physicists about precisely where, in the chain of events in this wavefunction collapse, the measurement result is ultimately registered.

Greg Egan places the point of collapse, the point at which reality is created. right in the brain. By proposing a technology which could be inserted in the brain to modify this eigenstate effect, to block it and thereby prevent the collapse of the wave

function. his   scenario gives a post-biological context to the idea that reality is constructed. Egan speaks the language of the coming decade. His 1990's science fiction addresses issues of the neuro-cognitive sciences with the prescience that William Gibson showed towards computer communication developments in the 1980s. And just as Gibson's *Neuromancer* correctly identified cyberspace as an important cultural construct of the late 20th century, so Egan's *Quarantine* identifies the issues likely to preoccupy us at the turn of the millennium. The question of consciousness, the technology of consciousness. the transcendence of consciousness will be the themes of 21st century life. Fundamental to this evolution is the development of a telematic art in the cybersphere, and fundamental to that art are the experiments, concepts, dreams and audacity of artists working today with telecommunications systems and services.

Questions of consciousness and the construction of reality are at the centre of any discussion of the status, role and potential of art in the emerging cyberculture. The fundamental question is this: Can an art which is concerned, as western art has always been, with *appearance*, with the look of things. with surface reality, have any relevance in our systems-based culture in which *apparition*, emergence, transformation are seminal? Can Representation co-exist with Constructivism? It is the overarching concern with appearance and with representation which has hitherto characterised western art and which has made it the servant of ideologies, of both church and state. It is its concern with appearance which has kept it in line with classical science, looking no further into things than their outward forms allow, making of the world a clockwork machine of parts whose movements are regulated by rigid determinism. and seeing Man as little more than a material object. It is the art of appearance which is purveyed in boutiques. galleries. museums and on the pages of chic art magazines. It is International Art . And it is dying. It is dying because it is no longer relevant to a culture which is progressively concerned with the complexity of relationships and subtlety of systems, with the invisible and immaterial. the evolutive and the evanescent, in short. with apparition. Questions of representation no longer interest us. We find no value in representation. just as we find no value in political ideologies. We do not wish to keep up appearances.

The telecommunications of cyberspace, on the other hand, offer the contemporary artist the means of interaction (both his own and that of the viewing subject) with dynamic systems. with creativity-in-process, with the emergent properties of an art of transformation, growth and change. It is for this reason also that the narratives and technology of Artificial Life are so important to us at this time. Cyberspace is the space of *apparition*, in which the virtual and real not only co-exist, but co-evolve in a cultural complexity . Apparition implies action just as Appearance implies inertia Apparition is about the coming-into-being of new identity, which is often at first, unexpected, surprising, disturbing. If appearance is claimed as the face of reality, of

things- as-they- are, apparition is the emergence of things-as-they-could-be. However, our insight into the ways in which reality is constructed in our consciousness, leaves us in no doubt that the processes of apparition are authentic and that appearance is a fraud. Representation in art was always essentially mendacious, illusory, and counterfeit. The mirror always lies.

More and more artists now take global networks. virtual reality, high speed computing for granted. These technologies are no longer seen as simply tools for art. they now constitute the very environment within which art is developing. Given this increasing familiarity, artistic questions now are not so much concerned with these dataworlds per se but with the interface between them, between us, between our own minds and that larger field of consciousness we call the world.

Whether or not Egan's fictive brain modifier gets to be developed, the fact is that our technologies of perception. cognition, and communication - the interface to the complex computer systems that both mediate our consciousness and construct our reality - are moving closer and closer to the body and into the brain. Just as the keyboard and mouse are being consigned to history, so too will the Head Mounted Display, the DataGlove, even the datasuit soon be consigned to the museum. Conceptually, they already are. We want the systems interface set within our brain. We want the boundaries between "natural" and "artificial" to be as redundant technologically as they are becoming conceptually and spiritually. This is to talk about the post-biological body as interface.

Progressively, we artists want to be creative in cyberspace by controlling computer-mediated systems through biological input sensors and biocontrollers in our own nervous system responding directly to signals from the brain, eye and muscles. However, while the advent of neural interfacing will certainly have enormous consequences for the development of art in the Net. and as much as it fascinates our speculative nature, it is not the most fundamental question at present for artists in the cyberculture. More important to us now is the conceptual implications of the shift taking place in art from appearance to apparition, from object to process. Art. which was previously so concerned with a finite product, a composed and ordered outcome, an aesthetic finality, a resolution or conclusion, reflecting a ready-made reality, is now moving towards a fundamental concern with processes of emergence and of coming-into-being. This raises critical. theoretical, and aesthetic questions which we can no longer avoid . In an important sense the issue is political, it concerns as much the democratisation of meaning as the democratisation of communications, that is to say a shared participation in the creation and ownership of reality.

The revolution in art which prompts these questions lies in the radically new role of

the artist. Instead of creating, expressing, or transmitting *content*, he is now involved in designing *context:* contexts within which the observer or viewer can construct experience and meaning. The skill in this, the insight, sensibility, feeling and intelligence required to design such contexts is no less than that demanded of the artist in classical, orthodox art. But the outcome is radically different. Connectivity, interaction and emergence are now the watchwords of artistic culture. The observer of art is now in the centre of the creative process not at the periphery looking in. Art *is* no longer a *window* onto the world *but* a doorway through *which* the observer is invited to enter into a world of interaction and transformation. The importance of telematic networks, of the inherent connectivity of cyberspace, in all of this, cannot be overestimated. These ubiquitous networks are themselves undergoing significant augmentation with the capacity and speed now available in the so-called 'dark' fibre, as George Gilder explains:

"Fibre comes in threads, as thin as a human hair, as long as the British Isles, fed by lasers as small as a grain of salt and as bright as the sun. A single fibre thread can potentially hold all the telephone calls in the United States at a peak moment of Mother's Day. Fibre is not really a replacement for copper (wires) ...it's a replacement for air. Dark fibre, lit with different colours for different protocols, will deliver one thousand times our present total broadcasting capacity. The recently developed Erbium Doped Amplifier which will send an infinity of messages through glass on wings of light, is the communications engineer's Holy Grail - the dream communications system, capable of communicating over vast distances with huge information capacity."

So, dark fibre, boxed cats and biocontrollers are directly relevant to the development of art in the cyberculture, this domain of apparition in which natural intelligence and artificial life can interact creatively. Whatever the dominant media, whether electronic, optical, or genetic, the art of the cyberculture is generically interactive. This interactive art is characterised by a systems approach to creation, in which interactivity and connectivity are the essential features, such that the behaviour of the system (the artwork, network, product or building) is responsive in important ways to the behaviour of its user (the viewer or consumer). More than simply responsive, it constitutes a structural coupling between everyone and everything within the Net. This kind of work is inherently cybernetic and typically constitutes an open-ended system whose transformative potential enables the user to be actively involved in the evolution of its content, form or structure.

Science fiction such as Egan's is not alone in positing scenarios in which human consciousness is seen as the instrument for creating reality. Outstanding amongst philosophers *from* the *point* of *view* of *cyberculture* *is* Paul Watzlawick *whose* contributions to Radical Constructivism can be seen as directly relevant to the

interactive art aesthetic. Radical Constructivism is as incompatible with traditional thinking as interactive art is with traditional art. As early as 1973 the cybernetician and biomathematician Heinz von Foerster gave his classic lecture *On Constructing a Reality* showing how the environment, as we perceive it, is our invention, describing the neurophysiological mechanisms of these perceptions and the ethical and aesthetic implications of these constructs.

What both the art and technologies of cyberculture are able to show is that there is a radical shift in our perceived relationship with reality, where the emphasis has moved from appearance to apparition. that is from the outward and visible look of things to the inward and emergent processes of becoming. In this culture. neither the precise state of art nor its cultural status can be fixed or defined: it is in a constant state of transformation. This is not a state of transition between two known and fixed definitions or destinations, rather is it transformation itself as a defining characteristic. as intrinsic to the identity of interactive art as the composed and finite object was to its classical predecessor. interactive art is art in a state of endless becoming. It is art-in-flux. This is so at present both in stand-alone systems, whether hypermedia or multi-media in format, as much as in the Internet with its global multiplicity of inputs and outputs.

A culture concerned with appearances bases itself on certainties. a definitive description of reality. Uniformity of dogma, uniformity of outlook and goals. cultural continuity and consensus, semiotic stability, these are its distinguishing features. Within this larger frame. aesthetic changes, when they occur are merely cosmetic, the basic conformity to an approved model of reality remains. There have been paradigm shifts in art just as in science , but it could be argued that the canon of Western art has maintained a much longer consistency and continuity than science. since numerous scientific revolutions have come and gone while art's preoccupation with appearance. with the surface image, with ready-made reality, has held for millennia.

In contrast, a culture concerned with apparition bases itself on the construction of reality, through shared perceptions, dreams and desires, through communication, and on the hybridisation of media and the *celebration* of semiotic instability. The shift in art towards apparition and construction as its primary concerns is a paradigmatic shift. We now realise that an art dedicated to appearance. simply gives the lie to whatever is the case, since the retinal gaze can penetrate very little of the material state and almost nothing of the spiritual state of things. The surface of the world hides more than it discloses. Science in the 20th century has been based largely on what is invisible to human retinal vision since it has always attempted to comprehend the forces and fields, and relationships underlying "our" visual world. In the earlier art of the 20th century this also to some extent was true: Kandinsky,

Duchamp and Pollock, distinguish themselves, in their radically different ways, by their attempts to reveal the invisible, and construct their separate realities. Of these, it was Pollock whose intimations of connectivity brought to modern painting the great commanding images of a networked world, in the the swirling, circulating, linking. confluences of line and colour. It was Pollock who first brought the tight-framed picture window of painting off the gallery wall and onto the surface of the earth, marking out an arena for action and interactivity, and thereby laying the groundwork for those holistic ways of viewing. imaging and constructing, an entirely new *attitude* towards art and aesthetics, of which we in our digital space are the principal heirs and benefactors.

But until the effects of cyberculture were felt, until the radical implications for art of the new technologies had begun to be recognised and adopted, those artists whose practice. complicitly or unthinkingly, upheld the old orders of perception and knowledge. aided and abetted by the de facto controllers of representation and consciousness, the curators. critics, historians and dealers, resisted the radicalism of these pioneers. The great shame of American scholarship is that Pollock has never been properly appreciated or understood, nor, as Tim Hilton has noted in reviewing the current. disastrous Royal Academy Exhibition *American Art in the 20th. Century* , has he ever been given a serious full scale retrospective. nor a fully sympatheic book. "America wishes him to be a dead movie-star rather than an artist." And yet Pollock first created the *aesthetic* possibility, in a sense the historical permission, for our own radical constructivism in the cybersphere to come into being. Because, at base. working with networks. is a matter of attitude before it is anything to do with machines. Telematic art is conceptually driven not technologically led. The fundamental concepts of art as action, interaction with the art-in-process, the artwork as arena. art as transformation. change, flux and flow, these are in origin Pollock's -with the acknowledged provenance of course of navaho and the visual culture of native america. If thre is any link whatsoever between the art of cyberculture and the art of the pre-telematic era, it llies in the painting of Pollock. The link is one of sensibility not style. of attitude not form.

The collapse of the New York School, the market rise of resurgent German expressionism, the despairing flounderings of post-modernist solipsism, the dismal return to nineteenth century academicism, figuration and narrative. the whole miserable confusion. demoralisation and splintering of art at the fag end of this century is evidence of the major paradigm shift which we are undergoing. Nothing is spared in the process: galleries become redundant, museums have to be rethought and redesigned, academies have to be abandoned and reconstituted,the patronage. placement and perpetuity of art are all to be reconsidered.

In our present understanding of the world. nothing is sufficiently stable for us to wish

to give a permanent form to its representation. Nor do we wish it to be. We are on that evolutionary spiral which has returned us to a more Taoist desire for flux and flow, for change and transformation. No eternal verities present themselves as worthy of consecration in manuscripts or monuments. We want now an art which *constructs* new realities, not one which represents a world preordained, finite and ready-made. We want now an art which is instrumental rather than illustrative, explicatory or expressive. Rather than to simply embellish the world and add to its ornamentation, the artist of the cyberculture wishes to engage in its renewal and reconstruction.

Above all we do not need any longer, hovering like vultures at the periphery of the old order of art, the cultural theorists, critics and academics who winge and wince at technology, who wag endlessly their disapproving and despairing fingers at the daring perceptions and dazzling innovations of science. Cultural theory was little more than ideological determinism dressed up in pretentious rhetoric, all show and no action, ideally suited in these latter years to preside over the demise of the old order of art, the art of appearance.

Art in the cybersphere is emerging out of the fusion of communications and computers, virtual space and real space, nature and artificial life, which constitutes a new universe of space and time. This new network environment is extending our sensorium and providing new metaphysical dimensions to human consciousness and culture . Along the way, new modalities of knowledge and the means of their distribution are being tested and extended. Cyberspace cannot remain innocent, it is a matrix of human values, it carries a psychic charge. In the cyberculture, to construct art is to construct reality, the networks of cyberspace underpinning our desire to amplify human cooperation and interaction in the constructive process.

3231 words

NOTE Simultaneously with the FISEA conference, the Spanish version of this text will be published in Madrid in the first issue of the new journal INTERMEDIA, Nuevas Tecnologías, Creación, Cultura, edited by Orlando Carreño.

BIOGRAPHICAL NOTE

Roy Ascott has initiated many global telecommunications projects since 1980 when, with an NEA award, he created *Terminal Art* one of the first artists' international computer conferencing projects. He created *La Plissure du Texte*, a planetary fairy-tale, involving "distributed authorship" through electronic networks for Electra 1983 in Paris. He was International Commissioner (Art, Technology, Informatics) for the Venice Biennale in 1986, for which he organised *Planetary Network* and *Laboratory Ubiqua*. His multi-media installation *Aspects of Gaia* was presented at the 1989 Ars Electronica Festival in Linz. He is founding member of the Interactive Art jury of the Prix Ars Electronica and consultant to the new Ars Electronica Center . In 1991, as a protest against the invasion of Iraq, he proposed *Texts, Bombs and Videotape*. The networking project, *Telenoia*, was at V2 in s'Hertogenbosch, Holland in 1992. He lectures and publishes widely in Europe and North America. He directs the Centre for Advanced Inquiry in the Interactive Arts (CAIIA), at Newport School of Art and Design, Gwent College.Wales.