

CAiiA-STAR Symposium: 'Extreme parameters. New dimensions of interactivity' (11-12 July 2001)

When the Jaguar lies down with the Lamb: speculations on the post-biological culture^[1]



Roy Ascott

Founding Director CAiiA-STAR
roy@caii-a-star.net

Abstract: This presentation investigates the metaphoric contiguity of Silicon Valley and the Amazonian rain forest, in the context of our post-biological culture, and speculates on the role that the rehabilitation of archaic knowledge might play in the advancement of technological art. The Jaguar shaman and Dolly the clone mark out shifting boundaries that define our new epistemology of mind and matter, where particles, neurons, atoms and genes converge as the substrate upon which our mixed realities can be built. Our experience of life on the Net, in cyberspace and on the Web, has already prepared us to reconsider the Western conventions of time and space, the apparent immutability of human identity and the isolation of the discrete mind, and to replace those illusions with a more constructive vision of a collaborative and coherent future. The place of art in all of this, with its ability to move creatively through cultures however distant or exotic, to find new meaning and method in ancient practices and esoteric knowledge, is to compliment the urgent progression of science, and creatively embrace the innovations of technology. Advances in molecular science and ubiquitous telematics define a challenging locus for explorations in interactive art. By employing Dr. Jeremy Narby's model of DNA communication in shamanic practice, the psychoactive domain of plant technology can be productively related to the spiritual ambitions of art in the post-biological world. This study seeks to show how, so to speak, the jaguar might lie down with the lamb.

Whilst the world at large is only just coming to terms with the Net and the computerisation of society, a new media shift is occurring, in which the dry, digital, world of the computer is converging with the wet biological world of living systems producing what can be called *moistmedia*. This new media may become the substrate of 21st century art, as crossovers between telematics, biotechnology and nano-engineering inform the working process of artists, designers, performers and architects. At the same time, our increasingly post-materialist disposition seeks models of mind and ways of being which will increasingly find new meaning in the spiritual traditions and knowledge of cultures previously dismissed as alien or exotic.

The defining aesthetic of this media-shift will be technoetic, that is to say a fusion of what we know and may yet discover about consciousness (*noetikos*) with what we can do and will eventually achieve with technology. It will make consciousness both the subject and object of art. In wise societies *Techné* and *Noetikos* have always been related, and at every level. Art has always been a spiritual exercise no matter what gloss prevailing political attitudes or cultural ideologies have forced upon it.

* This text represents the author's personal research, and does not constitute a prospectus for CAiiA-STAR (Centre for Advanced Inquiry in the Interactive Arts).

Just as globalisation means that not only are we all connected, but that our ideas, institutions, even our own identities are constantly in flux, so too will *moistmedia* bridge the artificial and natural domains, transforming the relationship between consciousness and the material world. We move fast not only across the face of the earth but across the reach of our minds. Our cyberception zooms in on the smallest atomic particle of matter and pans out to scan the whole universe. Through advanced technologies we are evolving a double consciousness which allows us to perceive simultaneously the inward dynamic of things and their outward show. With broadband, 3rd Generation wireless and other telecommunication developments, we shall be evolving a cyberception of multiple consciousness, just as now we are routinely multi-tasking.

Our everyday vision of the world will thus be many layered. Just as in the past, evolution of mind has always involved the evolution of the body, so distributed mind will seek a distributed body. To assist in the embodiment of this connectivity of mind is part of the artist's task, to navigate the fields of consciousness that new material systems will generate, is part of art's prospectus. The crossovers between art, science, technology and mythology will mean that increasingly we live in the context of mixed reality. Mixed Reality is also the rubric of an emergent technology that deals concurrently with the virtual synthesized world, as well as with the real physical world. It creates environments that integrate both real and virtual worlds quite seamlessly.

Despite the persistence in many parts of the world of local wars, ideological oppression and guerrilla struggle, walls and divisions all over the planet are coming down—not only between cultures and countries but also between disciplines and practices in the arts. The role of moistmedia art can become central in envisioning and establishing those creative forms of connectivity between individuals, institutions and regions which might bring both coherence and clarity to their relationships. It can influence attitudes and values, express goals, and serve as the conduit of new ideas about life in the post-biological culture. It can redefine totally what we know as architecture, the design of cities, tools and products. Just as telematic art celebrates the *telenoia* of world-wide connectivity (opposing the paranoia of the old industrial society), so *moistmedia* will provide new systems and structures to the emergent forms of planetary art, redefining the dynamic space of interaction and collaboration between artists of East and West, North and South, indeed of all regions of the world, however remote and hitherto unknown to each other. Poetry will always finally outlast oppression.

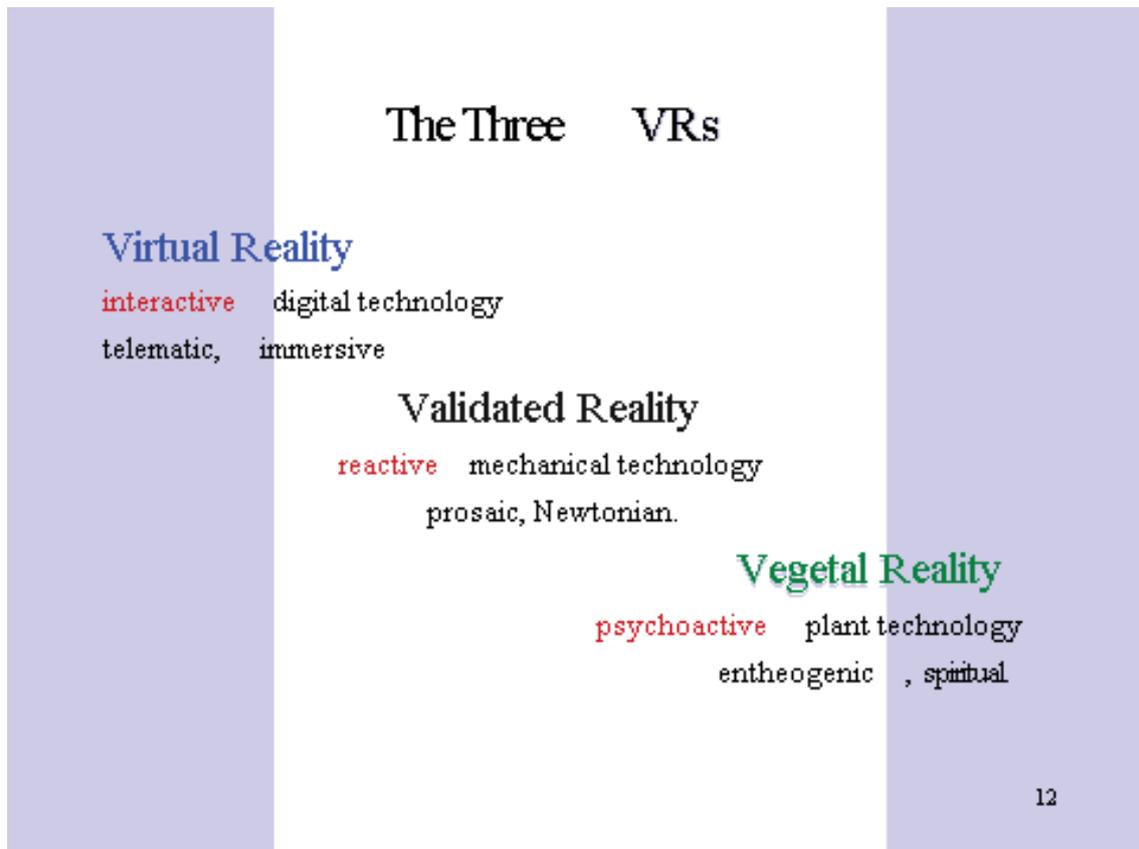
Moistmedia is set to create a whole new post-biological universe, quite unlike the world as legislated on high in its authorised version with its apparently immutable laws. Let me extend the metaphor by likening the creation of this new universe to that of the first cosmic Big Bang, named to reflect the combination of Bits Atoms Neurons and Genes which together, in all sorts of relationships, will provide the substrate—the moistmedia—upon which our art and architecture, systems and services, will be based. It too heralds an expanding universe, full of complexity and contradictions, equally rich in evolutionary potential, but hopefully assisted by the speed and subtlety that advanced technology can bring.

This Big Bang implies a transition to a much more complex level of human identity, forcing us to look deeply at what is it to live at the edge of the Net, half in cyberspace and half in a world increasingly nano-engineered from the bottom up. In this universe the old classical concept of nature is seen as a set of metaphors which have outlived their usefulness; a representation of reality, whether poetic or prosaic, which has lost its appeal to our sensibility. In this transition, the Roslin Institute's lamb called Dolly and Eduardo Kac's Alba will likely inform the nursery tales of a new generation, along with more and more creatures emerging from the moistmedia substrate: Steve Grand's *Lucy*, the orang-utan, for example, or Robokoneko, Starlab's kitten. We should consider too the robots of Ulrike Gabriel whose behaviour is governed by the mental states of those watching their performance. Whether through artificial neural networks, genetic engineering or other applications of molecular biology, the bridges to a post-biological society being opened up and artists are contributing to its definition.

We are looking at a culture in which intelligence is spilling out of our brains to fill every nook and cranny of the world, every environment, every tool, every product. But just as we are using new technology to investigate matter and its relationship to mind, so I believe we shall increasingly

use an old technology to navigate consciousness and effect a transcendence of the material state. This ancient technology, used by shamans for millennia, is the technology of plants, used both in the context of healing and of dreaming. That is, bringing wholeness to an individual or a social group, and dreaming the possibilities for an individual or for a social group. It is thus concerned with diagnosis, repair and construction; the acquisition of knowledge and the creation of knowledge.

These functions, whether on the plane of pragmatism or poetry, are those identified equally with our modern computer-mediated technologies. And like computer-mediated perception and cognition, plant entheogens alter our consciousness, our understanding and viewing of the world and ourselves. Both technologies, technological and pharmacological, provide fields of awareness which are usually at odds with our everyday, so-called common sense reality. One way to consider the space of our consciousness, or its state at any given point, is to triangulate the mind between three poles, what I refer to as the Three VRs: Virtual Reality, Validated Reality and Vegetal Reality.



I am looking at a culture in which our capacity for cyberception allows us to move effortlessly without encumbrance across a phenomenological continuum. By Virtual Reality I am referring to much more than a singular technology. Apart from Mixed Reality which combines real and virtual events into a seamless whole, and Augmented Reality which allows the viewer to see simultaneously both the internal dynamics and the external features of an object of study, as for example in surgery, VR encompasses a whole ontology of telepresence, of sensory immersion, and immaterial connectivity, which affords the VR changes the way we view ourselves, the manner of our comportment, and environments we wish to inhabit.

Validated Reality, our daily experience, is familiar to us all. It is the orthodox universe of causal "common sense", the way we are taught at school to view the world, a consensual reality established early in our lives by the constant repetition of its axioms. Validated Reality finds it hard to accept the world views of quantum physics, eastern mysticism, or the many conflicting

models of consciousness generated by contemporary scientists, across a wide range of disciplines, in their attempts to bridge the explanatory gap that prevents our understanding of this ultimate mystery. Those whose minds have been conditioned to accept Validated Reality as the only reality balk at the implications of nano-technology, and have great difficulty in coming to terms with genetic modelling and the scope of biotechnics in redefining Nature. In short, Validated Reality is authorised reality, whose narrow confines delimit the sense of what we are or what we could be. Nevertheless it controls the co-ordinates of our daily life, dictates the protocols of our behaviour, and provides an illusion of coherence in a contingent universe. It has been Validated Reality, which has created Nature as an array of objects set in Euclidean space, rather than a dynamic network of processes and relationships.

Vegetal Reality, the third axis of reality following the Big Bang, is quite unfamiliar to Western praxis, despite the extensive researches of Richard Evans Schultes, Professor of Ethnobotany at Harvard, for example, or the proselytising of the late Terence McKenna. Vegetal Reality can be understood in the context of technoetics, as the transformation of consciousness by plant technology. In this case, the plant technology involved supports a canon of practice and insight which is archaic in its human application, known to us principally through the work of shamans, largely visionary and often operating in a context of healing which is distant in the extreme from the Validated Reality of western medicine. However, frequently during the past century we have seen how the shaman's knowledge of plants has been appropriated, and synthesised by the pharmaceutical industry. This ancient knowledge provides us with some of the more spectacular products of modern medicine.

What has all this to do with the central concern of our symposium today? Is not the lore of plants rather more gnomish and occult than genomic and transparent? Aren't matters genetic best left to scientists in their labs rather than medicine men in their forests? In any case, who can master the formulaic intricacies of genome-speak? Well in fact, this is at the centre of my thinking on genes. In my opinion shamanic culture has everything to do with these matters—with DNA, genetic communication, and molecular manipulation. Although we know little neurologically about how entheogens, the psychoactive ingredients of the shaman's plants, work on the human organism, there is nothing mysterious or magical about their efficacy. In this respect it is worth referring at this point to the research of Jeremy Narby, embodied in the book *Cosmic Serpent: DNA and the Origins of Knowledge* which relates shamanic knowledge to a kind of shared genetic matrix.

Narby suggests is that the shaman is, in some way, communicating with his own DNA, and this is where his informative visions originate. We have to remember that we do not know why most of our DNA is there. After all a mere 3% accounts for the whole diversity of life. Narby thinks the shamans information comes from the mysterious junk DNA, the 97% we don't account for. He also points out that it is known that DNA in one cell exchanges signals with the DNA in other cells. He suggests that, once someone taps into their own DNA, it can then communicate across organisms, across species—even across the boundary between animal and plant—and that the totality of all the DNA in the world forms a kind of matrix. This transmission of signals between DNA in separate cells is effected by the emission of photons, the signals are in the form of light, and at a wavelength visible to humans. The DNA in one cell transmits and receives signals from DNA in other cells. This is done by emitting photons—biophotons—that is, they actually exchange signals in the form of light, at a wavelength that is visible to humans.

Narby's working hypothesis is that shamans can take their consciousness down to the molecular level and gain access to information related to DNA, which in their terms are "animate essences" or "spirits." He writes: "Here they see double helixes, twisted ladders, and chromosome shapes. In this way shamanic cultures have known for millennia that the vital principle is the same for all living beings and is shaped like two entwined serpents (or a vine, a rope, a ladder...). DNA is the source of their botanical and medicinal knowledge, which can be attained only in defocalized and "nonrational" states of consciousness, though its results are empirically verifiable. The myths of these cultures are filled with biological imagery. And the shamans' metaphoric explanations correspond quite precisely to the descriptions that biologists are starting to provide".

Before we dismiss critically these ideas as "merely metaphorical" ie not real genetic or biological science we should remember perhaps that the war of interpretation in quantum physics was won with metaphor by Neils Bohr and his Copenhagen School, as Mara Beller of the Hebrew University of Jerusalem has shown in her recent book *Quantum Dialogue; the making of a revolution*. Just as she argues for dialogical discourse rather than paradigmatic dogma within science, so I think we should attempt to build a dialogic discourse between western science and native bodies of knowledge. The ethnobotanical studies of the late Edward Schultes of Harvard has opened the way to this.

In the early 1980s, Narby points out, it was shown that the cells of all living beings emit photons at a rate of up to approximately 100 units per second and per square centimeter of surface area, with DNA as the source of this photon emission. The wavelength at which DNA emits these photons corresponds exactly to the narrow band of visible light. Yet this did not constitute proof that the light emitted by DNA, an ultra-weak signal, was what shamans saw in their visions. However, the signal is highly coherent, and a coherent source of light, like a laser, gives the sensation of bright colors, a luminescence, and an impression of holographic depth. It could well be then that DNA's highly coherent photon emission accounted for the luminescence of hallucinatory images, as well as their three-dimensional, or holographic, aspect.

On the basis of this connection, Narby conceived of a neurological mechanism for his hypothesis. The molecules of nicotine or dimethyltryptamine, contained in ayahuasca activate their respective receptors, which set off a cascade of electrochemical reactions inside the neurons, leading to the stimulation of DNA and, more particularly, to its emission of visible waves, which shamans perceive as "hallucinations." There, he concluded, is the source of knowledge: DNA, living in water and emitting photons, like an aquatic dragon spitting fire.

I think it is worth reciting this account of Narby's work because it amplifies the intuition that there is much to be gained in both biological sciences and the arts from research which seeks correspondences and collaborations between the two technologies of machines and plants, within the *natrifical* space of the Three VRs, virtual, validated and vegetal. In this new knowledge terrain, the planet shrinks to make the Brazilian rain forest contiguous with Silicon Valley, where the jaguar lies down with the lamb .

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