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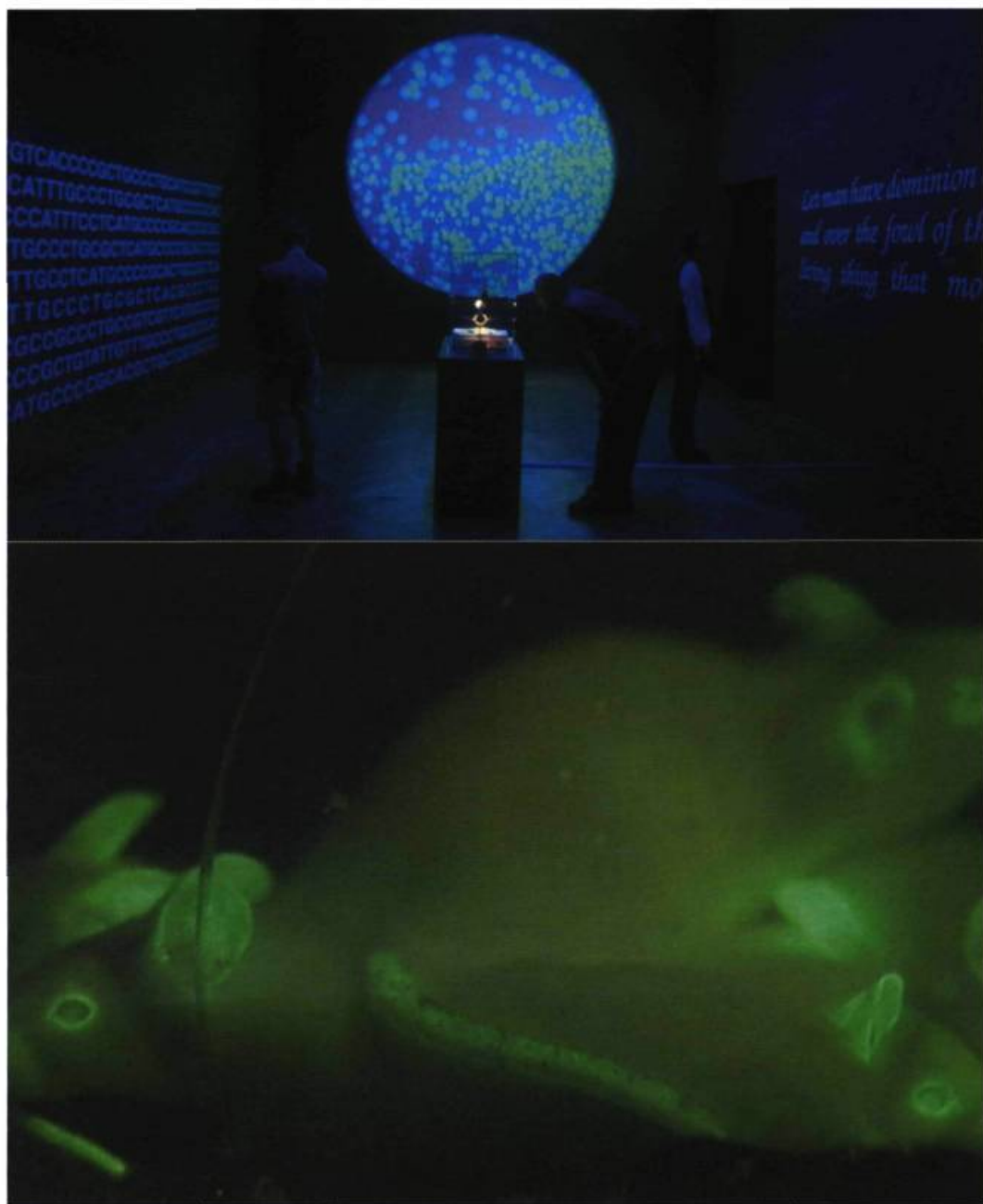
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Eduardo Kac, *The Eighth Day*, 2001 (detail), Transgenic installation with biological robot (biobot), GFP plants, GFP amoebae, GFP fish, GFP mice, audio, video, Internet, Courtesy Institute for Studies in the Arts, Arizona State University, Tempe.

TRAVERSES

EDUARDO KAC L'ÈRE BIOTECH. LA VIE AUGMENTÉE

Depuis près de vingt ans, Eduardo Kac explore les frontières entre l'homme, l'animal et le robot. Reconnu internationalement pour ses installations interactives sur Internet et pour ses réalisations en bio art, il est l'un des pionniers de l'art des télécommunications dans les années 1980. En 1986, il développe un art de la téléprésence, puis en 1994 un art biotélématique et en 1998, un art transgénique. Son travail* traite de questions qui s'étendent de la *mythopoetic* d'expériences *on line*, avec *Uirapuru*, aux impacts culturels des biotechnologies avec *Genesis*; du changement de la condition de la mémoire dans l'ère

digitale, avec *Time Capsule*, à la responsabilité collective distribuée avec *Teleporting an Unknown State*; de la notion problématique de l'exotisme comme *Rara Avis*, à la création de la vie et à l'évolution avec *GFP Bunny*. Ainsi, dans un travail de visionnaire, il explore la fluidité des positions des sujets dans le monde post-numérique en provoquant des débats éthiques et politiques. C'est ainsi qu'à la fin du XX^e siècle, il choqua le monde avec son *art transgénique* en présentant un lapin modifié génétiquement, qu'il prénomma Alba. Passionné qu'il est par la communication et les phénomènes d'hybridité, cette entrevue s'est déroulée de façon hybride et polyglotte.



Portrait d'Eduardo Kac.

C. P. : Dès que l'on prononce votre nom en public on reçoit en réplique : « Ah ! le lapin fluo ! ». Que pensez-vous de cette association ou de cette identification spontanée et réductrice ? Alba n'est en fait qu'une partie d'une de vos nombreuses œuvres.

E. K. : On the one hand, it is good to have an artwork through which the general public recognizes an artist. On the other, as you pointed out, there's always the risk that this may be the only work the general public will remember. In my case, since I have more than 20 years of artistic work behind me and hopefully at least another 30 ahead of me, there's a lot of room for the public perception to change and incorporate several other works.

C. P. : Pensez-vous que c'est le fait que vous ayez utilisé un lapin (animal inoffensif et attendrissant) plutôt qu'une sauterelle, par exemple, qui explique l'ampleur de la réaction, bousculant les affects et les valeurs éthiques du public ? Auriez-vous trouvé ainsi le moyen par excellence pour atteindre les objectifs communicationnels du projet GFP Bunny ?

E. K. : My original intention was precisely to work with a large mammal. Not an insect. Not a fish or a bird. A mammal. This is because we are mammals and this new being would then be closer to us, prompting visual, intellectual and emotional responses based on this very fact. Yes, the rabbit is perfect for the project, as it allows me to create the ambiguity and the tension between the cuddly bunny and the allegedly "monstrous" transgenic being.

C. P. : Votre parcours est assez complexe car vous utilisez allègrement la robotique, soit l'intelligence artificielle, autant que le biotechnologique, soit des interventions transgéniques sur le vivant, le tout dans une dimension symbolique. Comment s'opèrent ces passages ?

E. K. : The key issue I have been addressing in my work for about 20 years is communication. My work investigates the question of communication not as the transmission of information from one point to another, but as a vital force. My work explores communication as a shared space in which meaning can be negotiated. In my work I create social spheres in which dialogical interaction can emerge.

C. P. : Comment fonctionne *Genesis*, cette œuvre pour laquelle on a utilisé un code d'ADN inventé à partir d'une phrase de la Bible ?

E. K. : In *Genesis* the real, living bacteria are mutated on the Internet, by anyone, from any location. From Montréal, you can change the word of God in the bacteria located in Japan or Brazil. In the context of the work, the ability to change the sentence is a symbolic gesture: It means that we do not accept its meaning in the form we inherited it and that new meanings emerge as we seek to change it. Employing the smallest gesture of the online world – the click – participants can modify the genetic makeup of an organism located in a remote gallery. This unique circumstance makes evident, on the one hand, the impending ease with which genetic engineering trickles down into the most ordinary level of experience. On the other, it highlights the paradoxical condition of the non expert in the age of biotechnology. 'To click or not to click' is not only an ethical decision, but also a symbolic one. If the participant does not click, he allows the Biblical sentence to remain intact, preserving its meaning of dominion. If he clicks, he changes the sentence and its meaning, but does not know what new versions might emerge. In either case, the participant faces an ethical dilemma and is implicated in the process.

C. P. : Dans l'œuvre *The Eighth Day*, un « biobot » (robot biologique), capable de retransmettre les effets de bioluminescence à l'œil nu circule. Comment avez-vous pu réaliser cela ?

E. K. : *The Eighth Day* piece brings together living transgenic life forms and a biological robot (biobot) in an environment enclosed under a clear four-foot diameter Plexiglas dome, thus making visible what it would be like if these creatures would in fact coexist in the world at large. As the viewer walks into the gallery, she first sees a blue, glowing semisphere against a dark background. This semisphere is the four-foot dome, aglow with its internal blue light. She also hears the recurring sounds of water washing ashore. This evokes the image of the Earth as seen from space. The water sounds both function as a metaphor for life on Earth (reinforced by the spherical blue image) and resonate with the video of moving water projected on the floor. In order to see *The Eighth Day* the viewer is invited to "walk on water". All of the transgenic creatures in *The Eighth Day* are created with a gene that produces green fluorescent protein (GFP). As before with *Genesis* and *GFP Bunny*, all creatures in *The Eighth Day* (plants, amoebae, fish and mice) glow under blue light. A biobot, as I have defined it, is a robot with an active biological element within its body which is responsible for aspects of its behaviour. The biobot created for *The Eighth Day* has a colony of GFP amoebae that function as its cerebellum. When amoebae divide or move in a particular direction, the biobot exhibits dynamic behavior inside the enclosed

environment. The biobot also functions as the avatar of web participants inside the environment. Independent of the movement of the biobot, web participants are able to see through its eye.

C. P. : *Frank Popper dit de votre œuvre qu'elle s'inscrit dans un champ qui va de la mythopoïétique de l'expérience on-line à l'impact culturel de la biotechnologie. Vous avez par ailleurs expérimenté le concept d'holopoésie, qui a donné lieu à des interventions poétiques de types visuels, c'est-à-dire holographiques. La poésie semble occuper une place importante dans votre œuvre. Comment peut-on concilier poésie et science comme vous le faites ?*

E. K. : It is true. Poetry has an important place in my work. My background is in literature and I have always been interested in experimental poetry. What truly interests me is verbal experimentation that can take into account the visual, acoustic and semantic aspects of words and letters. With holopoetry I took poetry off the printed page and projected it immaterially onto space, changing in time according to the kinesthetic act of reading. It is a project that can't be reduced to any other medium. I don't see myself reconciling science and poetry. I see myself as simply writing with the tools and media of my time in order to develop a new poetic idiom that can only be realized through these media. The ancient scribes wrote with papyrus. Apollinaire used the typographic cliché. Cummings used a typewriter. I use holography, digital media, the Internet and biomedica.

C. P. : *Toute votre œuvre est basée sur le principe de la communication et sur ses diverses formes de manifestation sociale. L'art est en ce sens un moyen privilégié qui se permet de repousser les limites de la censure. Pensez-vous que l'esthétisation de la forme et du sens des langages plastiques, qui a nui à l'impact social des œuvres du passé, celles-ci étant reléguées à l'état de chefs d'œuvre, aurait conduit les artistes à manipuler le réel (les œuvres interactives sur le web), la vie (Alba), la chair de notre chair (ADN) pour mieux communiquer?*

E. K. : I have a philosophical interest in exploring the phenomenon of communication in its myriad forms, from pushing the limits of standard modes of communication to interspecies dialogue, from non semiological communication to the invention of new codes and sign systems and beyond. In my case, what drives me is not the belief that communication can be improved, because this implies greater clarity or persuasion, for example, ideas that dramatically limit what one understands by communication. My point is not to improve communication, but to probe the



Eduardo Kac, *Free Alba I (Folha de São Paulo)*, 2001.
Color photograph mounted on aluminum with Plexiglas, 36 x 46.5 inches (91,5 X 118 cm).
Courtesy Julia Friedman Gallery.

multiple implications of both the idea of communication (what does this really mean?) and the phenomenon or experience of communication (with oneself, with another human, with nonhumans, with machines, and so on). I'm also interested in investigating "communication" as a vital force, that is, as a fundamental aspect of biological life – as in communication between cells, bacteria, amoeba, and other life forms.

C. P. : *Cependant, contrairement aux productions actuelles, qui évacuent les intérêts formels liés au plaisir visuel que procurait l'esthétique traditionnelle, plusieurs de vos œuvres donnent à voir plus que l'expérience elle-même, plus que l'événement, soit des dispositifs habilement et artistiquement – sinon poétiquement – travaillés, qui provoquent un plaisir esthétique non négligeable.*

E. K. : I have always tried to strike a balance between the visual dimension of the artwork and other aspects of human experience. A few examples. Consider my early work with holographic poetry, or holopoetry. The viewer must move his or her body in front of the work quite dynamically in order to experience it. In this case, reading becomes a kinesthetic experience. The viewer does not read with his or her eyes only, but with the whole body. In other cases, as in *Essay Concerning Human Understanding*, I created a piece conceived for the sensorial apparatuses of nonhumans, in this case a bird and a plant. In *Dialogical Drawing* the initial experience of looking at an artwork is quickly replaced by speaking through it



Eduardo Kac, *Uirapuru*, 1999 [detail]. Hybrid telepresence/virtual reality online installation. Courtesy Julia Friedman Gallery.

*Let man have dominion over the fish of the sea and over the fowl
of the air and over every living thing that moves upon the earth*



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-..... ..-..... -.-.-. -..... -.-.-. -.-.-.-
.-. -..... ..-.-.-.-.- -.-.-. -..... -..... -.-.-. -.-.-.-
-.-.-...-...- -.-.-.- -.....-...-.-.- -.....-...-.-.- -
.....- -.-.-.-...-...- ..-.-.-.-.- -.....- -..... ..-.-.-.-...



Morse to DNA conversion principle

DASH (-) = T

A = WORD SPACE

DOT (.) = C

G = LETTER SPACE



CTCCGCGTATTGCTGTCACCCCGCTGCCCTGCATCCGTTTGTTGCCGTCGCCGTTTGTC
TTTGCCCTGCGCTCATGCCCCGCACCTCGCCGCCCCGCCCATTTCTCATGCCCCGCACC
CGCGCTACTGTCGTCCATTTGCCCTGCGCTCATGCCCCGCACCTCGTTTGCTTGCTCCAT
TTGCCTCATGCCCCGCACTGCCGCTCACTGTCGTCCATTTGCCCTGCGCTCACGCCCTGC
GCTCGTCTTACTCCGCGCCCTGCCGTCGTTTCATGCCCCGCCGTCGTTTCATGCCCCGCTG
TATTGTTTGCCCTGCGCCACCTGCTTCGTTTGTCATGCCCCGCACGCTGCTCGTGCCCC

to engage a remote viewer who is having the same experience. In *Darker Than Night*, viewers interact with living bats in a bat cave through a robotic bat (batbot) that emits frequencies that the bats can hear. There are many examples in which my work engages other sensorial modalities that do not conform to traditional, formal and aesthetic parameters.

C. P. : *Dans le cas des débats éthiques sur GFP Bunny, pensez-vous que l'impact social sur les questions de transgénèses a été plus important ou moins important que l'impact sur les questions d'éthique de l'art transgénique ?*

E. K. : Alba is the first animal invented and actually created by an artist. Alba is not an object, but a subject. When an artist creates a subject, a living sentient being, ethics and aesthetics go hand in hand, since we cannot treat a living being the same way we treat an inert thing. This is a new situation, without direct antecedents, and as such it prompts action and reflection. *GFP Bunny* contributed in its own way to the general discussion by introducing complexity and ambiguity in an otherwise polarized debate. However, what is truly significant is that which will not disappear in time, which is its poetic dimension, the internal tensions of the work, which harmonize the friendly bunny with the potentially disquieting notion of the transgenic. All of these issues were further developed in the *GFP Bunny* series of works, which include *Paris Intervention* (a series of public actions including posters, lectures, street conversations, articles, and television and radio broadcasts I realized in Paris), *The Alba Flag* (which is an edition, and which has also been flying in front of my house for many years), *Free Alba!* (a series of drawings and an edition of large-scale photographs that dialogue with the reactions to Alba), *It's not Easy Being Green!* (an artist's book focused on the poetic and humorous public responses to *GFP Bunny*), *Le Lapin Unique* (a public installation on the facade of Le Lieu Unique, in Nantes, France) and *The Alba Headline Supercollider* (a website that allows online participants to join actual headlines about *GFP Bunny* to produce new and absurd headlines).

C. P. : *Pour vous, l'art transgénique est bien plus qu'un travail expérimental sur la matière vivante, c'est le lieu d'un rapprochement entre les dimensions philosophique, éthique et poétique, c'est l'événement global de l'altérité et du partage dans un contexte social. Vous posez là des questions essentielles sur l'avenir de l'humanité. Comment le voyez-vous, cet avenir ?*

E. K. : To me it is clear that society in the future will include transgenics, clones and chimeras. Just as we have humans living with machines and metal parts inside their bodies today, we will have humans living with new genes, or with animal hearts and other body parts, or with synthetic organs grown in the

laboratory. While initially this may happen because of medical needs, it is quite likely that it will cross over into the realm of pop culture. And the time frame in which this may happen might surprise us. You may recall my work entitled *Time Capsule*, from 1997, in which I implanted a microchip live on TV and on the Net in front of a series of sepia family photographs taken in Poland in the 1930s. This was the first case of a human implanting a microchip, and it was a meditation on the new role of memory in the digital society. A year later, a British scientist implanted a microchip to conduct scientific experiments. Then, as time went by, tattoo parlors started to offer microchip implants. Recently, the FDA approved the use of implantable chips in patients to pass on medical information to doctors, and in 2005 a Barcelona nightclub began offering its VIP clients the opportunity to have a microchip implanted in their upper arms that not only gives them special access to VIP lounges, but also acts as a debit account from which they can pay for drinks. Microchip implants went from speculative in 1997 to a more common practice only eight years later. For a couple of years now, in the U.S.A. anyone has been able to buy, for about \$80, a "DNA Explorer Kit", a toy that allows ten-year-old children to extract, view and map real DNA and to conduct six DNA experiments. These events may strike older generations as shocking, but we must remember that as younger generations grow up with them, they become very familiar and an integral part of their universe. This we must respect but, of course, just because something is new it does not mean that it is positive and that it should be accepted as it is without discussion. To quickly dismiss what younger generations embrace is as problematic as uncritical acceptance. We need to be aware of and participate in the process of social change in order to engage in a productive dialogue about the meaning and cultural implications of these changes.

ENTREVUE DIRIGÉE PAR
CHRISTINE PALMIÉRI

*Les travaux d'Eduardo Kac ont été montrés internationalement, notamment à Exit Art et au Media Arts Center de New York ; au Contemporary Art Center de Linz en Autriche ; à l'InterCommunication Center (ICC) de Tokyo à la Chicago Art Fair ; à la galerie Julia Friedman à Chicago et au Museum of Modern Art de Rio de Janeiro. On peut voir ses œuvres à l'adresse : www.ekac.org.