EXPANDING SYSTEMS:

THE INTERNATIONAL CURRENCY OF JACK BURNHAM'S WORK

'Technics by itself can promote authoritarianism as well as liberty, scarcity as well as abundance, the extension as well as the abolition of toil.'

- **Herbert Marcuse, 1941**[1]

'(…)

I like to think

(it has to be!)

of a cybernetic ecology where we are free of our labors

and joined back to nature,

returned to our mammal brothers and sisters,

and all watched over

by machines of loving grace'

- **Richard Brautigan, 1967**[2]

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[1] Marcuse, 'Some Social Implications of Modern Technology', *Technology, War and Fascism: Collected Papers of Herbert Marcuse*, Vol. I, pp. 40-65

[2] Brautigan, 'All Watched over by Machines of Loving Grace', 1967, http://www.brautigan.net/machines.html

Introduction

The silence of Jack Burnham is underrated

Reading Burnham today leads to inevitable comparison of art circa 1970 with art as we presently know it. Notably, the aspects of the art world that Burnham deplored then – 'Elitism, insane cycles of production and consumption, quality and preciousness fetishism, notions of "progress" and economic exploitation' – remain or exist in exacerbated form.[3] If we identify with the disillusioned author we might ask ourselves 'why the hell am I working in this field at all', and find no credible answer.[4] Elsewhere, Burnham is sustaining: an encounter with the writer might remind us why art still seems worthwhile, at least some of it, some of the time. In the mid-'90s, the popularisation of the Internet achieved through the World Wide Web saw a number of artists adopt critical strategies and positions of which we might expect Burnham to approve. A cautious utopian spirit remains in digitally facilitated networks active in the art world today.[5] What Burnham would make of art in the post-Internet age is impossible to ascertain; even close friends have lost contact with him; lost him to Cabala. In the wake of his *Software* exhibition held at the Jewish Museum, New York in 1970, Burnham had a 'fundamental rethink' which 'led him to realize the

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[3] Burnham, 'Problems of Criticism', *Idea Art*, pp. 46-69

See Andrea Fraser, 'L'1% c'est moi',
http://whitney.org/file_columns/0002/9848/andreafraser_1_2012whitneybiennial.pdf

[4] 'Whoever believes that art can make life more humane is utterly naïve (…) Nothing, but really absolutely nothing is changed by whatever type of painting or sculpture or happening you produce on the level where it counts, the political level (…) As I've said, I've known that for a number of years and was never really bothered by it. All of a sudden it bugs me. I am also asking myself, why the hell am I working in this field at all'. Hans Haacke, quoted by Burnham in 'Steps in the Formulation of Real-Time Political Art', *Framing and Being Framed*, pp. 130

[5] 'I get the impression that we still hold out some hope for that form'. Ben Vickers speaking about mid-'90s conceptions of the Internet as a 'free' space for art. Vickers hosted panel discussion 'Peer to Platform: Artist Collective vs. Social Network', ICA, London, 1 May 2013

importance of Duchamp'. Evolving through Structuralism, Burnham's cabalistic tendencies first implied a 'rejection of historical or scientific determinism', and then, along with his retirement from art, complete immersion in the mystical hermetic tradition.[6]

Among the many people who have tried to leave the art world, Burnham has done so with great success and probable finality.[7] Duchamp's partial departure in favour of chess doubtless served as inspiration.[8] But unlike the 'Magister Ludi', whose silence has been deemed overrated, Burnham's self-censorship leaves us wanting to restore him to view.[9] Beyond the resonance of his writing with the contemporary state of art, much of this dissertation will be dedicated to examining Burnham's politics, and his interest in new technologies on the eve of the industrial machine age's decline and the information age's rise. Rereading Burnham against a backdrop of global resistance to official Cold War policy allows us to construct a story of international solidarity manifested through ideas: artists from geographically distant and

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[6] '(...) I can't say exactly when Jack got interested in Kabala - this is something you should ask him but unfortunately I have no way to contact him anymore. My guess is that it was after the Software show, which he saw as a humiliating fiasco. So it was probably part of the fundamental rethink which followed that event, and which led him to realize the importance of Duchamp and gaming in general. Kabala [sic.] showed Jack's rejection of historical/scientific determinism, but he had to evolve through structuralism to get there. So 1971-1973 is my best guess. A much bigger mystery, for me, is why his interest in Kabala lasted so long'. Robert Horvitz, personal email correspondence with the author, 1 May 2013

[7] Dieter Roelstraete, 'Can I go now? Trying to leave the art world', *Frieze*, Issue 153, March 2013 http://www.frieze.com/issue/article/can-i-go-now/

[8] 'Marcel Duchamp: *MAGISTER LUDI*' begins with discussion of Duchamp's talent for chess, and the 'trouble' he went to of writing *L'Opposition et les Cases conjuguées sont réconciliées* (1932), a book on a very rare situation in the game. Burnham, *The Structure of Art*, pp. 158-170

[9] On 11 December 1964, Beuys staged an action titled *The Silence of Marcel Duchamp is Overrated*. Beuys sought to draw attention, with Duchamp his target, to the 'nonsensical silence of art in the face of pressing questions about the future'. Antje von Graevenitz, 'Breaking the Silence: Joseph Beuys on his 'Challenger', Marcel Duchamp', *Joseph Beuys: The Reader*, pp. 29-49

ideologically opposed nations positioned themselves similarly with regards

postformalist experimentation, democratic communication and anti-politics.

Odd Arne Westad has recently drawn attention to the truly global nature of the Cold

War: 'the United States and the Soviet Union repeatedly intervened in processes of

change in Africa, Asia, and Latin America'.[10] Processes of exchange were also at

stake. If the theatrical metaphor of the iron curtain has often obscured them from

view, they can be recalled through McLuhan's 'Global Village' and the 'hot line' set up

in 1963 between Washington and Moscow.[11] If the hot line was adversarial,

communication between lesser-known art worlds of the '60s and '70s also

constituted a kind of 'hot line'; though one of solidarity and support that was more

than bidirectional. It is not within the scope of this dissertation to discuss Mail Art,

which from the 1950s until its 1970s peak, allowed artists living under Latin American

dictatorships and in late socialist Eastern Europe to establish contact, and from the

Cold War's margins seek 'creative ways to inhabit countercartographies and an

alternative sense of belonging'.[12] This topic has been amply discussed elsewhere.[13]

This thesis to some extent technologises the approach taken in discussions of Mail

Art, much as Gabrielle Hecht has technologised Westad's study, though without the

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[10] Westad, *The Global Cold War*, pp. 1

[11] McLuhan, *Understanding Media*, pp. 33

[12] Klara Kemp-Welch and Cristina Freire, 'Artists' Networks in Eastern Europe and Latin America', special section introduction, *ARTMargins* No. 2, pp. 3

[13] See Cristina Freire and Klara Kemp-Welch (eds), *ARTMargins* No. 2, Special Section on Artists' Networks in Eastern Europe and Latin America, June – October 2012

art-historical focus now proposed.[14] Three locations will be discussed: the U.S.,

Czechoslovakia and Brazil. Though the former is a traditional superpower I will

discuss how Burnham occupied a marginal position in New York and aligned himself

with concerns of the latter two. Approached holistically, Burnham's work is

characterised by its techno-ambivalence; the author's oscillation between utopian

and dystopian views. Slovak artist Július Koller (1937 - 2007), without employing

high-tech means in his work, engages critically in an era of immense technological

ambition: while the USSR invests heavily in telecommunications well-adapted to the

diffusion of propaganda, the artist performs positive principles of exchange in the

ideal democracy of ping-pong. As the space race enters the popular imagination he

considers himself a U.F.O-naut; an alien(ated) individual meditating the radical other

of the extraterrestrial. Kac, with a parallel interest in 'life on Mars', has dedicated

himself to the artistic employment of technologies as advanced as transgenics.[15]

Though he underpins such work in his writing with questions of an ethical nature, he

has been mired in controversy for reviving the notion, once entertained by Burnham,

of art that is 'literally life in the artist's hands'.[16]

My study of Burnham extends the research of Frances Halsall, Edward A. Shanken,

Luke Skrebowski and Caroline A. Jones, and becomes a means of shedding light on

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[14] Hecht's volume 'explores how Cold War politics, imperialism, and disputes over decolonisation became entangled in technologies, and considers the legacies of these entanglements for today's global (dis)order'. It is 'aligned with and contributes to Westad's conclusion that 'the most important aspects of the Cold War were neither military, nor Europe-centred, but connected to political and social development in the Third World'. Hecht (ed.), *Entangled Geographies*, pp. 1-6

[15] Transgenics is the branch of biology concerned with the artificial introduction of genetic material from one organism to another, unrelated one, OED

[16] See conclusion to first and second print editions of *Beyond Modern Sculpture*, Burnham, pp. 376. An alternative conclusion featured in the third printing of this volume in 1973

fellow outcasts of the art world and on practices thus far minoritized by their place of origin. My methodology owes something to systems theory, in which Burnham was deeply interested to the point of advocating a 'Systems Esthetics'. For Ludwig von Bertalanffy, the founding father of general systems theory with whom Burnham shared a publisher, systems theory meant approaching a 'complex of components in interaction' in terms of the 'relations or "forces" between them'.[17] In this thesis, Burnham, Koller and Kac are considered as just such 'components'. Von Bertalanffy spoke in 1972 of finding 'unity in diversity' or a 'coincidence of opposites' in a 'time of dissent, upheaval, revolutions and struggle, frequently aimed at mutual destruction'. Burnham, I would argue, believed in such unity, too. His silence might point less to a loss of faith in this regard, but to exasperation at art's weakness.[18]

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[17] von Bertalanffy, *Robots, Men and Minds*, pp. 69

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Von Bertalanffy, *The Relevance of General Systems Theory*, pp. 185

'Artists work with weak forces. They don't work with strong forces', excerpt from 'Interview with Jack Burnham by Lutz Dammbeck', transcription by Robert Horvitz, http://www.volny.cz/horvitz/burnham/lutz-interview.html

Jack Burnham: 'Systems Esthetics' and *Software* through the *Large Glass*

A technical 'fault' in Burnham's character precluded him, perhaps, from enjoying a harmonious life in the art world.[19] He had an affinity for technology; in his early career as a sculptor this took the form of a practice wedded to experimentation with light and the burgeoning trend of kineticism in late 1950s New York (Fig.1.).[20] A desire to make through artwork an 'accurate statement of *what light is*, at our stage of technology' spilled over by 1968 into ambition to ask in writing, *what art is*, in light of 'current technological shifts'.[21] Attempts to formulate an answer would jar with nostalgia for 'the unique work of high art' and with the reactionary attitudes to technology abounding in the art world at the time.[22] Knowledge of failed vanguard marriages with machine age technologies (Futurism, Constructivism etc.) meant that few were ready to accept art's renewed engagement with technologies in the age of information. As Luke Skrebowski has argued, '[T]he cultural revolution of the late 1960s, directed against the technocracy, sought to protest against the dominant

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[19] In *Technics and Time I: The Fault of Epimetheus*, Bernard Stiegler refers to the myth of Prometheus and Epimetheus to describe how Prometheus stole the gift of technical knowledge from Hephaistus and Athena and gave it to man. Technology, according to Stiegler, is therefore man's non-original origin, or original default that is not a fault. Judith Wambacq and Bart Buseyne, 'The Reality of Real Time', *New Formations*, Number 77, 2012, pp. 63-75

[20] Burnham describes the emergence of kinetic art and illustrates the trend with his work *Two Four-Unit Modular Tapes*, 1968, in *Beyond Modern Sculpture*, pp. 302-303

[21] Burnham, 'Systems Esthetics', *Great Western Salt Works*, pp. 15

[22] Michael Fried, for example clung to the idea of theatricality in his 1967 essay 'Art and Objecthood'. Burnham explicitly criticizes Fried in 'Systems Esthetics' especially

In 'Art and Technology: The Panacea That Failed', Burnham describes how 'As a result of training and personality, many art critics consider themselves "humanists" with strong feelings concerning the encroachments of technology on nature and cultural traditions. A few have successfully advocated what might be termed "Pop Technology", e.g. cybernetic light towers, video banks, and electronic sensoriums, but most critics instinctively realise that it would damage their art world credibility if they became serious advocates of hard technology as an aesthetic life-style', http://www.etantdonnes.com/SystemsArt/Burnham_Panacea_1980.pdf, pp. 8

culture rather than promulgate the aestheticization of technique that Burnham had hoped for'.[23] Indeed, this was the time of technology's primary development for military and consumer rather than aesthetic ends, and Burnham's failure to extricate art from this mess left him open to criticism as well as applause.

Mindful of the above, I will in this chapter discuss Burnham's orientation toward science and technology in *Beyond Modern Sculpture* (1968), as underpinned by his readings of Herbert Marcuse and Ludwig von Bertalanffy. I will describe how his position in the 1968 essay 'Systems Esthetics' was misunderstood due to its citation of the U.S. military think tank RAND Corporation. However, when illustrated with the artwork of Hans Haacke to whom Burnham gave friendship and critical support, I argue that his stance becomes comprehensible once more. When the pair joins forces in denouncing the War in Vietnam and in boycotting the X São Paulo Biennial, for example, Burnham's ethical credentials can scarcely be denied. On the occasion of *Software*, the 1970 exhibition curated by Burnham for the Jewish Museum New York, he is subjected to criticism again. My discussion of *Software* in terms of its merits and perceived failures will culminate in description of how Burnham dealt with disillusionment in art. Adjustments and clarifications of his early positions can be found in *The Structure of Art* (1971) and in *Great Western Salt Works* (1974). A once-disparaged spirituality begins to emerge.

Marcuse is quoted on the back cover of *Beyond Modern Sculpture*:

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[23] Skrebowski, 'Systems, Contexts, Relations: An Alternative Genealogy of Conceptual Art', pp. 156

'And is perhaps in this sense the notion of the 'end of art' historically justified? Do not the achievements of technological civilization indicate the possible transformation of art into technique and technique into art?

'And in as much as the aesthetic values are the non-aggressive values par excellence, art as technology and technique would also imply the emergence of a new rationality in the construction of a free society, that is, the emergence of new modes and goals of technical progress itself.'[24]

Burnham was highly selective in his citation: this segment of text, found in 'Art in the One-Dimensional Society' (1967), omits the interjecting point, found in the original between paragraphs, that 'art by itself could never achieve such a transformation'. It stops just shy of Marcuse's 'warning' that 'the realization of art as principle of social reconstruction *presupposes* fundamental social change'.[25] Burnham has seized upon late utopian Marcuse here and edited real politics from sight.[26] I will return to question whether failure sufficiently to think the relation between systems esthetics and the practically political represents a flaw in Burnham's thought on systems more generally. For now it should be emphasized that Burnham was among those who, against the specific background of the Cold War, began to formulate 'a countercultural response that preferred to stress the liberating aspects of

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[24] This quote from Marcuse, found on the back cover (only) of *Beyond Modern Sculpture* (third printing, 1973) can be found in its original context of 'Art in the One-Dimensional Society' in Douglas Keller (ed.), *Herbert Marcuse: Art and Liberation*, pp. 118

[25] Douglas Keller (ed.), *Herbert Marcuse: Art and Liberation*, pp. 118

[26] Marcuse writes 'To be sure, 'political art' is a monstruous concept' but concludes that '(…) the real change which would free men and thing, remains the task of political action; the artist participates not as artist', *Herbert Marcuse: Art and Liberation*, pp. 118 and pp. 122

technology'.[27] Since Marx's corruption by Stalinism, such a position had been untenable and lacked critical strength and vocabulary. In 1941 Marcuse decried technology's instrumentalization in the Fascist manipulation of power.[28] In *One Dimensional Man* (1964) he had written that

> 'Technology serves to institute new, more effective, and more pleasant forms of social control and social cohesion. The totalitarian tendency of these controls seems to assert itself in still another sense - by spreading to the less developed and even to the pre-industrial areas of the world, and by creating similarities in the development of capitalism and communism'[29]

It is easy to see how Marcuse's radical shift regarding art and technology, even when tempered by the spectre of political nuance, could have instilled Left-leaning Burnham with hope. Arguably, what he did best to retain in his selected snippet of Marcuse was that 'the aesthetic values are the non-aggressive values'. If nowhere else, it is in their insistence on the non-aggressive that Marcuse and von Bertalanffy coincide: 'We are living in a time of dissent, upheaval, revolutions and struggle, frequently aimed at mutual destruction (…) Whatever the future may bear, we have to preserve human values and dignity'.[30] The latter, Bertalanffy writes, are specific to culture. Where Marcuse suggests an artistic approach to technology in the interest of

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[27] David Crowley and Jane Pavitt (eds), *Cold War Modern*, pp. 165

[28] Marcuse, 'Some Social Implications of Modern Technology', Keller (ed.), *Technology, War and Fascism*, pp. 40-65

[29] Marcuse, *One Dimensional Man*, pp. 11

[30] von Bertalanffy, *The Relevance of General Systems Theory*, pp. 191

reconstructing human(e) society, von Bertalanffy proposes a more general confluence of the sciences and the arts with the same interest in mind. *Beyond Modern Sculpture* hinges on both of these ideas but Burnham swings toward the scientific bias of the latter. He is evidently impressed by von Bertalanffy's grouping of 'the organizational properties of organic entities, both social and biological, into the category of systems'. To Burnham's mind von Bertalanffy's thinking on systems coincided with homeostasis and with Norbert Wiener's cybernetics: 'cybernetics *is* the analysis of linked and interacting systems – precisely Bertalanffy's view of biological activity'.[31]

A voracious appetite for interdiscplinary reading led Burnham to connect critical theory with diverse domains of scientific research, and then apply them to art with near manic ease: in *Robots, Men and Minds*, von Bertalanffy reveals a fear of 'automation to suicidal boredom in a cybernetic society'.[32] Marcuse would doubtless be horrified at Burnham's assertion that through systems and cybernetics '[W]e have learned to speak with complete nonchalance about number systems, philosophical systems, data-processing systems, ecological systems, communication systems, political systems, control systems, weapon systems and many others'.[33] Such fluidity of thought certainly helped Burnham analyse a great number of twentieth-century sculptural trends in terms of their shaping by 'the effects of science and technology'. But it was little wonder that in 'Systems Esthetics', published in *Artforum* in September 1968, Burnham had to admit that '[A]s yet the evolving esthetic has no

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[31] Burnham, *Beyond Modern Sculpture*, pp. 317

[32] von Bertalanffy, *Robots, Men and Minds*, pp. 6

[33] Burnham, *Beyond Modern Sculpture*, pp. 320

critical vocabulary so necessary for its defence, nor for that matter (…) explicit cause'.[34]

Turning to Burnham's personal causes, what surfaces in 'Systems Esthetics' is, on the one hand, retention of the Marcusean understanding of aesthetics as non-aggressive – 'Progressively the need to make ultrasensitive judgements as to the uses of technology and scientific information becomes "art" in the most literal sense' – and on the other, uncertainty as to whether artists possess the humility required to act sensitively.[35] He is still less convinced that they will act morally or altruistically.[36] Given his leftist audience and the fact that the protests against the Vietnam War were at their height, Burnham's defence of systems analysis, the principles of systems theory applied to the problem of military organization, is remarkable:

'Systems analysts are not cold-blooded logicians; the best have an ever-expanding grasp of human needs and limitations. One of the pioneers of systems applications, E. S. Quade, has stated that "Systems analysis,

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[34] Burnham, 'Systems Esthetics', *Great Western Salt Works*, pp. 15

[35] 'If you have engineers and artists who have modest personalities, who have humility, you'll rather get a good idea. But if you have arrogant engineers - or if you have engineers who are working for a bottom line - or arrogant artists - then it's quite a self-destruct. Humility is everything.' Jack Burnham interviewed by Lutz Dammbeck

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'(…) attaching any moral significance to art' is 'suspect': 'The artist operates as quasipolitical provocateur though in no concrete sense is he an ideologist or a moralist. "L'art pour l'art" and a century's resistance to the vulgarities of moral uplift have insured that', 'Systems Esthetics', *Great Western Salt Works*, pp. 16-17

'The altruism of artist groups has rarely survived the commercial successes of one member', 'Real Time Systems', *Great Western Salt Works*, pp. 36

particularly the type required for military decisions, is still largely a form of art.

Art can be taught in part, but not by the means of fixed rules..."[37]

A footnote at the close of Quade's quote reveals him as an employee of The RAND Corporation. This footnote, Caroline A. Jones has written, proved 'fatal'.[38] Given the controversy surrounding RAND's contract with to the Department of Defense, Burnham's footnote would have obscured for the alarmist reader the nuanced and varied critical contribution that 'Systems Esthetics' otherwise represents.[39] Firstly, for instance, the rejection of the art object and Michael Fried's 'theatricality' in favour of postformalist practices showing art to reside 'in relations between people and between people and between people and the components of their environment'. And secondly, acknowledgement of Duchamp and Moholy-Nagy's continued relevance; the notion of "viewing" as 'a more integrated experience'; diminishment of the cult of the artist; validation of institutional critique.[40]

Along with the distraction represented by RAND, the vast ground covered by 'Systems Esthetics' arguably contributed to Burnham's loss of critical purchase. His

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[37] Jack Burnham, 'Systems Esthetics', *Great Western Salt Works*, pp. 16. The footnote revealing Quade's relation to RAND appears on pp. 24 of the same volume

[38] 'Burnham's first footnote refers to the Rand Corporation's 1964 publication *Analysis for Military Decisions*, and the obvious entanglement of systems theory with the military-industrial complex was a fatal attribute in the eyes of his largely leftist audience during the Vietnam era.' Caroline A. Jones, 'Systems Symptoms', Artforum 50th Anniversary special issue, pp. 113

[39] The contract was to carry out approximately 2400 interviews with Vietnamese, 'mostly Viet Cong and defectors from the Viet Cong', leading to the production of 'about 62000 pages of useful data about the views of those who were leading the rebellion against the Diem government' Amos Yoder, *Communist Systems and Challenges*, pp. 170-171

[40] Burnham, 'Systems Esthetics', *Great Western Salt Works*, pp. 15-25

writing may have gained more traction had he allowed Hans Haacke's work to take

centre stage. A centre may have been incongruous with the network structure

privileged by systems, a stage too reminiscent of Fried. But Haacke's practice and

political ideals, I would argue, best illustrate the countercultural value of Burnham's

work. Interviewed by Jeanne Siegel in 1971, Haacke (1936-) reveals that he was

introduced to systems by Burnham:

> 'I met Jack in 1962 when we were both isolated from people interested in what
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> we were doing (…) Sometime in '65 or '66 (…) I heard about systems
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> analysis, and the related fields of operational research, cybernetics, etc. The
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> concepts used in these fields seemed to apply to what I had been doing and
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> there was a useful terminology (…) a clear terminology can help to stimulate
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> thinking'[41]

Haacke was clear in his thoughts on Vietnam. *MOMA Poll* (1970) (Fig.2.), exhibited

at the Museum of Modern Art, New York in the 1970 group show *Information*,

comprised Question and Answer instructions mounted above two transparent ballot

boxes. Q: 'Would the fact that Governor Rockefeller has not denounced President

Nixon's Indochina policy be reason for you not to vote for him in November?' A: 'If

'yes' please cast your ballot into the left box, if 'no' into the right box'.[42] It was in

writing about Haacke's work in the artist's 1975 monograph *Framing and Being*

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[41] 'Hans Haacke: Systems Aesthetics', Jeanne Siegel, *Artwords: Discourse on the 60s and 70s*, pp. 211

[42] 'During the last week of April 1970 the Vietnam war became the Second Indochina War', 'From the Vietnam War to an Indochina War', Jean Lacouture, *Foreign Affairs*, July 1970. http://www.foreignaffairs.com/articles/24174/jean-lacouture/from-the-vietnam-war-to-an-indochina-war

Framed that Burnham finally restored his position on Vietnam to view, thus also realigning himself with Marcuse who had denounced Western intervention in 1966.[43] He emotively includes himself in the first person plural statement:

'For Haacke, as for many of us, the Vietnam War provided a long and debilitating exposure to the near futility of trying to change a nation's policies – even as the existing policies proved to be grossly wasteful and immoral. Collectively, it generated a vast degree of frustration which had no effective outlet. Artist committees, rallies, and petition-signing were token efforts which only gained in effectiveness as they became nation-wide'[44]

On the occasion of the 1969 X São Paulo Biennial, international efforts were made to change a nation's policies. Haacke, closely followed by Burnham, urged artists participating in the U.S. delegation to join France, Greece, Italy, Mexico, Venezuela, Argentina, the Soviet Union and others in saying 'Non à la Biennale de São Paulo' (Fig.3.).[45] Nine out of the twenty three artists selected to represent the U.S. agreed to boycott the exhibition that Gyorgy Kepes had been appointed to oversee. The reason: outrage at widespread censorship, and the persecution and arrest of

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[43] 'In history there is something like guilt, and there is no necessity—neither strategic nor technological nor national—that could justify what is going on in Vietnam: the slaughter of the civilian population, of women and children, the systematic destruction of foodstuffs, carpet bombing of one of the poorest and most defenseless countries in the world—that is guilt and we must protest against it even if we believe that it is hopeless, simply in order to survive as human beings and perhaps to make a dignified existence possible for others, perhaps only because it could possibly shorten the terror and the horror, and today that is already a great deal'. Marcuse, "Vietnam – Analyse eines Exempels" ["Vietnam – Analysis of an Example"], See http://germanhistorydocs.ghi-dc.org/docpage.cfm?docpage_id=2124

[44] Burnham, *Framing and Being Framed*, pp. 130

[45] Calirman, *Brazilian Art under Dictatorship*, pp. 11

politicians, intellectuals and artists living under Brazil's military dictatorship, and above all disgust at U.S. complicity with the regime.[46] Burnham cites extensively from a personal letter Haacke sent him in April 1968:

'After I left Kepes I became haunted by the thoughts that I have expressed to you about being an accomplice of the U.S. Government – if I participate in a show under its auspices abroad. I finally have decided not to show and just wrote a letter to that effect to Kepes (…). Unfortunately we are not living in a time when art (whatever that is) can be seen and shown simply as what it is. Repressive tolerance diverts the information and makes it into a U.S.I.A stunt. It is just obscene to play innocent, particularly in a country whose regime lives by the grace of the C.I.A'[47]

If Haacke questions *what art is* here, arguably his letter, along with that written to Kepes, and his 'blistering manifesto' quoted in the *New York Times* was Haacke's most successful systems artwork to date. It is here that he recognises his position in the art system as intimately entwined with political machinations taking atrocious global effect. Haacke's show of solidarity with the oppressed of Brazil was linked to his protest over Vietnam.[48]

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[46] See Joseph Smith, *A History of Brazil*, 1500 – 2000, especially pp. 191-195

[47] Burnham, *Framing and Being Framed*, pp. 131

[48] 'The American Government pursues an immoral war in Vietnam and vigorously supports fascist regimes in Brazil and in other areas of the world... All expositions of the American Government are made to promote the image and politics of this government... The energy of artists is channelled to serve a politics that these same artists scorn with good reason', James N. Green, *We Cannot Remain Silent,* pp. 120

Had it not been for Kepes's final decision to withdraw the U.S. exhibition, a show with a strong high-tech bias would have been installed. Kepes was, after all, founder of '[O]ne of the major attempts to wed art and technology in the United States'.[49] A press release issued prior to the boycott billed Kepes's project as 'a trend-setting American entity': a two-part exhibition involving 'the innovative use of lighting and technology in art works'.[50] In Kepes's own words, one section would comprise a "community or society of objects ranging from simple to more complex forms which will interact with each other and produce 'a sort of fabric'. The second part would include 'films, slides, and video tapes showing aspects of the American art scene'.[51]

Haacke was perhaps unaware of the fact, but participation in a specifically high-tech show would have deepened his complicity with U.S. policy. In *Beyond Modern Sculpture*, Burnham notes that American artists' 'commitment to technology has been more easily gratified' and that 'artists from other continents' have relocated to New York for 'its technological facilities and stimulation'.[52] Eduardo Galeano suggests that this is no innocent fact:

'The speeded-up denationalization of Latin American industry carries with it a growing technological dependency. Technology, the decisive key to power, is

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[49] Burnham, 'Art and Technology: The Panacea That Failed', pp. 8

[50] James N. Green, *We Cannot Remain Silent,* pp. 118

[51] Ibid.

[52] Burnham, *Beyond Modern Sculpture*, pp. viii

monopolized in the capitalist world by the metropolitan centers. It comes to us

second-hand but those centers charge for the copies as if they were the

originals. In 1970 Mexico paid twice as much in 1968 for importation of foreign

technology. Between 1965 and 1969 Brazil doubled its payments, and so did

Argentina over the same period'.[53]

If I have proposed Haacke's letters regarding the X São Paulo Biennial as his most

successful systems work, additional cause for nominating them thus may reside in

their lo-tech nature. Skrebowski has argued that 'political reaction against the war

machinery then being deployed by the U.S. government in Vietnam' saw Haacke

'move from an "aestheticization of technics" to a "horror"'.[54] I would likewise argue

that 'Haacke's use of systems theory (…) moves beyond the ossified conceptual

position (philia/phobia) inflecting most critical accounts of art's relation to

technology'.[55] This can be illustrated through *News* (1969/70) (Fig.4.), the work

selected by Burnham for exhibition in *Software.*

Realised after the boycott, *News* consisted of two waist-height teletype machines

receiving local, national and international news in real time. As print-outs emerged,

visitors could either read or simply observe the paper pile of accumulating accounts

of events that normally remain outside of the museum. In the information age,

Haacke suggests, the ease and speed with which news is communicated globally

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[53] Eduardo Galeano, *Open Veins of Latin America*, pp. 277-288

[54] Skrebowski, 'All Systems Go: Recovering Hans Haacke's Systems Art', *Grey Room*, pp. 56

[55] Ibid., pp. 57

means that neither individuals nor institutions have excuse for ignorance of affairs near and far from home. Clearly *News* used high-tech but scarcely with a view to induce horror. *Visitors' profile* (1969) (Fig.5.), (Fig.6) saw Haacke employ a computer allowing visitors to input answers to questions regarding their age, sex, educational background, income bracket, and their opinions on a variety of subjects. The computer compiled the answers and submitted them to statistical breakdown serving as a profile of the exhibition's visitors. Haacke believed that '[I]nformation presented at the right time and in the right place can be potentially very powerful': a similar project conducted at the Guggenheim revealed that 'Puerto Ricans and blacks (…) do not take part in an art scene that is obviously dominated by the middle- and upper-income strata of society'.[56]

Haacke's investigation into the visitor's personal information had its complement in Vito Acconci's contribution, consisting of the artist's substitute standing near a visitor and 'intruding on his personal space'. Relying on nothing more technical than the human body, Acconci's work, in the context of *Software*, could be put into conversation as well as *Visitors' Profile* with Burnham's warning that 'computerized data files on individuals continue to be an extremely serious threat to human rights, and one against which there are few real protections'.[57] The attitude taken by Burnham in his curation of *Software* should impede discussion of his work, as much as Haacke's, in terms of technophilia. *Software* – especially as accompanied by 'Notes on art and information processing' –exhibits a greater maturity toward thinking art and technology than *Beyond Modern Sculpture* and 'Systems Esthetics'. Gone is

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[56] Jeanne Siegel, *Artwords*, pp. 217

[57] Burnham, 'Notes on art and information processing', *Software* exhibition catalogue, pp. 14

the 'fantastical sci-fi fusion' of art and life that had to be revised in the former.[58] Certainly absent is an effective pledge of allegiance with RAND. Continuity is found in Burnham's emphasis on the 'non-aggressive' and the 'ultrasensitive': '*Software* is not technological art; rather it points to the information technologies as a pervasive environment badly in need of the sensitivity traditionally associated with art'.[59]

Committed high-tech works such as Haacke's were supplemented by 'fun' interactivity. Among others, Allen Razdow and Paul Conly presented *Composer* (Fig.7.), a musical synthesizer and digital computer combination that allowed up to four people at a time to 'contribute their ideas' to music otherwise produced by the conversion of digital data into 'sequences of electrical voltages'.[60] Ned Woodman and Theodor Nelson presented *Labyrinth* (1970) (Fig. 8.), 'the first public demonstration of a hypertext system' – a step on the way to the Internet allowing the visitor to navigate through the exhibition virtually. The inclusion of such works may have been motivated by a desire to diminish the fear of dehumanization long associated with the machine. The dominant exhibit, *Seek* (Fig. 9.), comprising a 5 x 8 ft. superstructure housing live gerbils and a computer controlled device sought to so the same. The device was designed to stack and sort toy blocks with the aim of creating 'a three dimensional world'. Gerbils were introduced with a view to complicate proceedings; requiring the machine to adjust its building process as the animal caused blocks to fall or become displaced. *Seek* was supposed to highlight, and surpass, the machine's traditional lack of adaptability to human need:

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[58] Skrebowski, 'Systems, Contexts, Relations: An Alternative Genealogy of Conceptual Art', pp. 145

[59] Burnham, 'Notes on art and information processing', *Software* exhibition catalogue, pp. 14

[60] *Software* exhibition catalogue, pp. 38

'If computers are to be our friends they must understand our metaphors. If they are to be responsive to changing, unpredictable, context dependent human needs, they will need an artificial intelligence that can cope with complex contingencies in a sophisticated manner (drawing upon these metaphors) much as *Seek* deals with elementary uncertainties in a simple-minded fashion'[61]

Other components of *Software* used traditional broadcast media to transmit 'free poetry' via AM radio waves (Fig. 10.).[62] The juxtaposition of John Giorno's project with what were effectively Internet prototypes could have encouraged thought about a 'very real paradox':

'[I]t appears that we cannot survive without technologies potentially just as dangerous as the dilemmas they are designed to solve. We might ask ourselves if future generations of information systems will be used with any more sensitivity than radio and television have been up to now.'[63] Unfortunately, *Software* met with multiple difficulties: besides going massively over budget, displeasing the Talmudic scholars presiding over the museum and contributing to director Karl Katz's dismissal, a film was destroyed, several artists threatened to withdraw from the show and technical difficulties ensued. Among them: the gerbils in *Seek* attacked one another and thus invalidated the metaphor about harmonious machines. 'All

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[61] *Software* exhibition catalogue, pp. 23

[62] *Software* exhibition catalogue, pp. 46-48

[63] Burnham, 'Notes on art and information processing', *Software* exhibition catalogue, pp. 14

Watched Over by Machines of Loving Grace' they were not.[64] One of the greatest problems for Burnham, however, was his confrontation with 'filthy lucre'; the fact that 'museums in capitalist society' have 'money in trusts, war industries...'[65] In 'Art and Technology: The Panacea that Failed' Burnham expands on the problems that 'surfaced at every turn' in *Software* and details the dilemmas resulting from a mixture of wilful hostility toward and the corporate sponsorship of 'Tek Art'. The article contains Burnham's near last words on art and technology though he had already signalled hesitation toward the theme by this time.

Interviewed by Willoughby Sharp in 1971, Burnham reveals a secret: *Software*, he claims, was 'simply a recapitulation of Duchamp's allegory'[66] With *Large Glass* (Fig. 11.), Burnham says, 'Duchamp was trying to establish that artists, in their lust to produce art, to ravish it, are slowly going to undress her until there's nothing left'. Taking the machines in the lower half of the glass to symbolise 'reason, progress, male dominance' and the bride in the upper 'the female component: intuition, love, internal consistency, art, beauty, and myth itself', Burnham worked the allegory into Software's installation as a 'kind of personal joke': he situated the artists working with predominantly low-tech means on the upper floor of the museum, and the computerized experiments on the lower floors. In his writing post *Software*, in *The Structure of Art* and in *Great Western Salt Works*, fascination with Duchamp, combined with Cabala, would overtake interest in technology.

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[64] Brautigan, 'All Watched Over by Machines of Loving Grace', 1967
http://www.brautigan.net/machines.html

[65] 'Willoughby Sharp interviews Jack Burnham', *Great Western Salt Works*, pp. 63-69

[66] Ibid., pp. 69

Július Koller: U.F.O-naut

Interest in Duchamp was combined with sceptical spiritual enquiries into the U.F.O.

by Július Koller, the Slovak artist resident in Bratislava. As Daniel Grúň has argued,

'[T]he 'cosmization' of artistic thinking' was common in both the Soviet Bloc and the

Soviet satellites at the time. But the Czechoslovak relation to the alien was quite

specific: tied to a sense of 'coming from the outside'.[67] If I later turn to Koller's self-

identification as a U.F.O-naut, I will first consider the way in which Duchamp came

from the Western outside to find an appreciative audience in the Slovak artist. As

Klara Kemp-Welch has noted, Duchamp's Pasadena Retrospective of 1963 had

'immediate international resonance' that showed the iron curtain to be more

permeable boundary than barrier.[68] Július Koller's *Pleasure Machine 3* (1964) (Fig.

12.) testifies to his inspiration by the 'Marchand du sel'; the work bears strong

comparison to *Coffee Grinder* (1911) (Fig. 13.).

In Lawrence D. Steefel's account of *The Position of Duchamp's Glass in the*

Development of His Art, he notes that *Coffee Grinder* is an example of Duchamp's

early interest in 'the machine as an object and the mechanistic as a pervasive

context of organizing and perceiving the world'. Similar works appear, Steefel writes,

in studies for the *Large Glass* and in the *Glass* itself'.[69] I have remarked above that

Burnham saw *Large Glass* as a cautionary work: an allegory of the artist too rapidly

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[67] 'Communist Globalization', Boris Groys in conversation with Łukasz Ronduda, *Star City*, pp. 179

[68] Klara Kemp-Welch, 'Doubt', chapter II, publication forthcoming

[69] Lawrence D. Steefel, *The Position of Duchamp's Glass in the Development of His Art*, pp. 28

embracing the rational idea of progress embodied by the scientific and the mechanical. Duchamp's hesitations formed when the machine in the early 1900s became 'the totem' of new experience: the 'new discoveries of science, like the plane or the telegraph, seemed to be exciting symbols which allowed the esthetic and the scientific imagination to draw closer together in a common ecstasy of new perspectives, new dimensions of reality and new images of the world'. Duchamp, according to Steefel, 'responded to this new state of affairs with a carefully guarded skepticism'.[70]

Koller was no less sceptical of the technological leanings exhibited by his peers in Bratislava in the run up to Dubček's experiments with 'socialism with a human face'.[71] By the mid-1960s the artistic scene in the Slovak capital had become 'extraordinarily pluralistic' with galleries sufficiently emboldened to support artists working with kinetics and light art.[72] Grúň comments on the integration of 'new technologies and synthetic materials (nylon nets, pneumatic devices) into [Stano Filko's] work' and on his interest in 'dynamic light movement and image projection' in works such as *Kozmos* (1968) (Fig. 14.). Koller, however, maintained a strictly low-tech practice. This did not imply traditionalism, indeed he demonstrated a postformalist sensibility that would have been less indebted to Burnham than to Tomas Štraus, whose article 'On the question of the transformation of the "Art Work" to the "Art Action"' was published in 1967 in *Výtvarný Život*, the Review of the Union

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[70] Lawrence D. Steefel, *The Position of Duchamp's Glass in the Development of His Art*, pp. 33-35

[71] Williams, *The Prague Spring and its aftermath*, pp. 14-20

[72] Klara Kemp-Welch, 'Doubt', chapter II publication forthcoming

of Slovak Artists and of the Union of Slovak Architects.[73] Regardless of probable

unawareness of each other's work, Koller is likely to have read the Czech translation

of von Bertalanffy's *Robots, Men and Minds* and his artistic position coincided to a

significant degree with the progressive elements of 'Systems Esthetics'.[74] Indeed,

there are sufficient similarities that one might add Czechoslovakia to the Eastern

Bloc countries in which von Bertalanffy enthusiast Ervin Laszlo found there to be 'a

systems aesthetics taking shape'.[75]

'Systems Esthetics', as I noted earlier, decried the aesthetic object:

> 'Situated between aggressive electronic media and two hundred years of
>
> industrial vandalism, the long held idea that a tiny output of art objects could
>
> somehow "beautify" or even significantly modify the environment was naive. A
>
> parallel illusion existed in that artistic influence prevails by a psychic osmosis
>
> given off by such objects. Accordingly lip service to public beauty remains the
>
> province of well-guarded museums'[76]

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[73] Klara Kemp-Welch, 'Doubt', chapter II publication forthcoming

[74] Ludwig von Bertalanffy's Robots, Men and Minds was published in Czech (translation by J. Kamarýt) in 1972. von Bertalanffy made special mention of Karel Čapek's dystopian 1920 play of R.U.R (Rossum's Universal Robots – robot servants who overcome their human masters) in the Czech edition, titled *Clovek-robot a mysleni*.

[75] Laszlo, *The Relevance of General Systems Theory*, pp. 5

[76] Burnham, 'Systems Esthetics', *Great Western Salt Works*, pp. 16

In a similar vein, Koller wrote of 'the presentation of artefacts in galleries' as 'an outdated, conventional communication'. Where Burnham saw no room for the artistic ego – 'In an advanced technological culture the most important artist best succeeds by liquidating his position as artist vis-à-vis society' – Koller proposed 'The third wave', 'after modernism and postmoderism' as 'the third and concluding part of an historical time-space triangle, where art and the artist begin to disappear to [the] 21st century' (Fig. 15.).[77] Communication was a theme with which Koller and Burnham converged again with an emphasis on the democratic. The latter wrote (this time in 'Notes on art and information processing'): 'at some point an attempt has to be made to put the issues of all contemporary communication, not just esthetic communication into a questioning frame of reference'. Koller agreed, as we shall see below. But his frame of reference was built around the contemporary state of communication in Czechoslovakia. His thought on democratic exchange was formed in democracy's absence. Burnham had something quite different in mind, concerned with widening access to computers.[78]

Perhaps keen awareness of the anti-democratic potential of communication technologies contributed to Koller's general reluctance to embrace technology. In *The Relevance of General Systems Theory*, Lee Thayer had written that for communication to be 'human', the 'message', (which for Thayer was itself a

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[77] Koller, 'Up and Down (The Cultural Situation), *Julius Koller: Univerzálne Futurlogické Operácie*, pp. 235

[78] '(…) at some point an attempt has to be made to put the issues of all contemporary communication, not just esthetic communication into a questioning frame of reference. Already we have witnessed a revolution in usage. Twenty years ago computers belonged to a tiny, highly skilled, mathematical elite - a priesthood; ten years later laymen who bothered to master cumbersome computer languages could use them; and today, as evidenced by this exhibition, people with no special training have access to computers. Thus in practice there has been a steady trend towards democratization', Burnham, 'Notes on art and information processing', *Software* exhibition catalogue, pp. 13

'misnomer') 'must vary with the context'.[79] The USSR had ignored this notion since the 1950s, believing, as it latched onto the popular Cold War project of building ostentatious telecommunications towers, that one centralized Soviet message was good for all. By 1970, Moscow's Ostankino Tower, referred to as the 'needle' amongst nonconformists opposed to its injection of propaganda 'into the veins of the Soviet masses', was capable of reaching over seventy per cent of the population.[80] The Soviet satellites had towers of their own, with the Czechoslovak variant *Ještěd telecommunications tower* (1968-73) (Fig. 16.) among the most exceptional.[81]

The Ještěd tower, erected atop the uppermost peak of the Ještěd-Kozákov Ridge, Liberec, approximately 100 kilometers from Prague, was designed by a team of state architects presided over by chief architect Karel Hubáček. Official glass artists Stanislav Libenský and Jaroslava Brychtová worked on special effects – a series of glass meteorites installed in such a way to suggest their sudden arrival from outer space. Work on the tower commenced in 1963 but building in such hostile, high-altitude conditions meant the project proceeded slowly and exceeded its budget. President Svoboda agreed to issue extra funds, convinced by the need to keep up with scientific and technological competition. As Crowley and Pavitt note, 'Its national significance and socialist credentials were incontestable'.[82]

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[79] Lee Thayer, 'Communication Systems', *The Relevance of General Systems Theory*, pp. 101

[80]
Crowley and Pavitt, *Cold War Modern*, pp. 177

Kristin Roth-Ey, 'Finding a Home for Television in the USSR, 1950-1970'
http://www.jstor.org/discover/10.2307/20060221?uid=3738032&uid=2&uid=4&sid=21102042094123

[81] Crowley and Pavitt, *Cold War Modern*, pp. 177

In *Mass Communication Cultural Situation, 1-4 (U.F.O)* (1987) (Fig. 17.), Koller is visibly horrified at the effect of propagandized telecommunications issued from the Soviet centre: the presence of Gorbachev on his television causes him to turn his back to the screen. Koller preferred to receive news of political affairs via the radio, and mainly kept his television tuned to sport.[83] It was in sport, and in ping-pong and tennis specifically, that he found communication democratized:

'I chose such a game (…) as a symbol of democratic communication, where it's still possible to preserve, according to some rules of fair play, a sort of possibility of communication, of comparison, and also rivalry, and at the same time some exchange of opinions: in this sport's case an exchange of blows using a ball which flies from one side to the other and is actually a sort of individualising of this attempt at communication'[84]

The choice of sport was carefully tailored to resist another form of undemocratic, monologic communication: the *spartakiada*, or 'festival of mass gymnastic displays performed by thousands of athletes in near-synchronicity' on occasions such as the 1960 announcement of Novotný's new constitution, which implied the Czechoslovak population spoke with one voice only; the result of a complete absence of

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[82] Crowley and Pavitt, *Cold War Modern*, pp. 177

[83] 'As Fulierová [Koller's wife] recalls, [Koller] had a habit of sitting at home, in their two room apartment, listing to politics on the radio, while simultaneously watching sport on television', Klara Kemp-Welch, 'Doubt', chapter II publication forthcoming

[84] Koller, 'Conversation between Július Koller and Roman Ondák', *Julius Koller: Univerzálne Futurlogické Operácie,* pp. 137

antagonism between all social groups.[85] In the years of liberalized cultural policy, to which the August 1968 invasion of Prague by Warsaw Pact troops brutally put paid, Koller had set up ping-pong matches in Bratislava's galleries (Fig. 18). But by 1972, 'normalization' – a political programme that sought to return 'normal' Soviet socialist values to Czechoslovakia – required that such outlandish forms of art cease. Socialist Realism was reintroduced and in October 1972, Koller, along with his experimental artist peers, received a letter announcing the withdrawal of his membership from the Association of Fine Artists. In an attempt to have the decision revoked, Koller wrote back reminding the authorities of his pro-socialist 'cultural political activities'.[86] His request fell on deaf ears: the content of Koller's letter, however logically compliant with policy, was in fact in contravention of at least two unspoken rules. First, it illustrates what *Žižek* calls, '[t]he paradox of the regime [that] if people were to take their ideology seriously it would effectively destroy the system'.[87] Second, a population of amnesiacs would have better pleased the regime than one comprised of individuals who remembered, and worse, issued reminders: as Milan Kundera had written, '[I]t is 1971... The struggle of man against power is the struggle of memory against forgetting'.[88]

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[85] Williams, *The Prague Spring and its Aftermath*, pp. 7

[86] Klara Kemp-Welch, 'Reticence as Dissidence: A Historiography of Antipolitics for Art History', UCL Conference, 'The Art of the Impossible: Culture, Philosophy and Dissent from Havel to the Present', 25 May 2013

[87] Robert S. Boynton, 'Enjoy Your Zizek!', *Linguafranca*, October 1998, http://linguafranca.mirror.theinfo.org/9810/zizek.html

[88] Pauline Bren, 'Weekend Getaways: The Chata, the Tramp, and the Politics of Private Life in Post-1968 Czechoslovakia', David Crowley (ed.), *Socialist Spaces*, pp. 128. Bren quotes from Milan Kundera, The Book of Laughter and Forgetting, trans. Aaron Asher (New York: Harper Collins Publishers, 1999), pp. 4

Indeed, during normalization, the powerful meddled very visibly with Slovak memory. 1972 saw the opening of *Most Slovenského národného povstania* - Bridge of the Slovak National Uprising (Fig. 19.) Serving as a second crossing over the Danube, its crowning feature was a U.F.O-shaped restaurant perched on splayed legs reaching over eighty metres into the sky. The bridge reconfigured memory in at least two ways: making space for it entailed the destruction of much of the Jewish quarter in the Old Town. It also served to displace Slovaks from the present moment: in naming it after the Slovak National Uprising, the regime stirred memories of 1944.[89]

The bridge appears in Koller's 1984 *Universal Fortification-Identification Object (U.F.O), Project* (Fig. 20.), a drawing serving as one of many manifestations of the artist's obsession with the U.F.O. Similarly naïve black and white drawings (Fig. 21.), (Fig. 22.) feature the fictional 'U.F.O gallery Ganek', whose foundation in 1981 was accompanied by group hiking trips. The gallery, Koller said, had 'a precise location: on a peak in the High Tatras'. It was practically inaccessible but this was what gave it utopian status: 'gallery' in Slovak mountaineering terminology also referred to the narrow strip connecting lower terrain with the summit, or 'the worldly and the otherworldly'.[90] The outdoor activities can thus at once be interpreted as eccentric

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See Jozef Jablonický, *J. Pivovarči* (trans.)*,The Slovak National Uprising, 1969*

See 2012 article on the reversion of the structure's name to 'Bridge of the Slovak National Uprising' (it was changed to 'New Bridge' in 1993, http://bratislava.sme.sk/c/6318613/bratislava-bude-mat-opat-most-snp.html

[90] Koller, 'Conversation between Július Koller and Roman Ondák', *Julius Koller: Univerzálne Futurlogické Operácie,* pp. 135

alternatives to the *tramping* movement more widely adopted in the Czech part of the countryside, and as an opportunity for unofficial spiritual communication.[91]

Otherworldly connections were established from the private space of Koller's appartment, too: in numerous photographic self-portraits taken by his wife from 1970 onwards he depicts himself, from domestic space to outer space, as J.K U.F.O-naut (Fig. 23.). These photos were a continuation of actions such as *Games, 1, 2 (Anti-Happening)* (1967) (Fig. 24.) in which he performatively held up signs to the extra-terrestrial. Trevor Paglen has written that 'trying to communicate with aliens' implies a 'deeply ethical question, namely, what relationship do we want to have to the cosmos, to the stranger and to the future?'[92] The question mark became an emblem that oriented Koller quite specifically beyond the present: U.F.O often stood for 'Universal futurological operation' in Koller's work, including in U.F.O-naut portraits such as *U.F.O.-naut J. K. (U.F.O)* (1980) (Fig. 25.) in which the question mark featured. In his most hermetic phase, Koller's extra-terrestrial interests merged with the new age mysticism of Erich von Daniken, Swiss author of *Chariots of the Gods?*[93] 'The new science is called futurology!' the book concluded, having described man's descent from aliens. Heartened, perhaps, by Daniken's shared 'Search for Direct Communication', Koller wrote to the author, though never received

[91] Pauline Bren, 'Weekend Getaways: The Chata, the Tramp, and the Politics of Private Life in Post-1968 Czechoslovakia', David Crowley (ed.), *Socialist Spaces*, pp. 123-140

[92] Paglen, *'Friends of Space, How are You All? Have You Eaten Yet?* Or, Why Talk to Aliens Even if We Can't', *Afterall*, Number 32, Spring 2013, pp. 9-19

[93] von Daniken, *Chariots of the Gods?*, pp. 195

a personal reply. Kept busy with world travel and embezzlement, von Daniken might never have known of the artist's attempted contact.[94]

How closely Koller played the role of Duchamp's 'artist of tomorrow', occupying the 'fringe of a world' of which 'the general public [would] not even be aware'.[95] Burnham was witnessing a less extreme but parallel move to the fringe by certain artists in New York: 'The first real art world slump (…) came during the winter of 1972' and artists with 'post-formalist tendencies' were 'shunted off in the direction of cooperative artists' spaces'.[96] In an art world tied to its market, Burnham observed '[W]ithin the financial sector (…) a definite trend towards a consolidation of "solid" aesthetic values, and within art magazines a "normalization"'.[97] Was he aware of the political weight of his word? Thus far undiscussed texts in *Great Western Salt Works* demonstrate knowledge of Romanian writer Mircea Eliade, and of Polish artist Tadeusz Kantor.[98] He would later write about Soviet dissident artists Komar and Melamid but Czechoslovakia may have remained a blind spot:1968 – 1975 marked a 'period of superpower détente' during which official U.S. disinterest in the 1968

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[94] Klara Kemp-Welch, 'Doubt', chapter II publication forthcoming

[95] Duchamp, 'Where Do We Go From Here?', Address to a symposium at the Philadelphia Museum College of Art, March 1961, First published in the Duchamp issue of *Studio International*, 1975, https://www.msu.edu/course/ha/850/Where_do_we_go_from_here.pdf

[96] Burnham, 'Ten years before the Artforum masthead', *The New Art Examiner*, Vol. 4, No. 5 (February 1977), pp. 1 and pp. 6-7

[97] Ibid.

[98] See citation of Mircea Eliade in 'Voices From the Gate', and reference to Eliade and Kantor in 'Objects and Ritual', *Great Western Salt Works*, pp. 119 and pp. 147, respectively

invasion of Czechoslovakia would have diminished general awareness of the country's plight.[99]

A spiritual link to Koller through Duchamp kept Burnham unconsciously connected. In 'Duchamp's Bride Stripped Bare: The Meaning of the Large Glass' (1972), Burnham imputed Duchamp's notes with cabalistic meaning. With regards the artist's description of the Bachelor mechanisms, composed of 'malic forms', Burnham confided that

> 'The term Malic has many connotations (…) but more significant is one of the Hebrew words for "angel", Malach. Here Cabalistic meaning refers to the World of Formalism's almost robotic beings, sent to Earth to fulfil a prescribed task not requiring much wisdom or self-knowledge. The avant-garde artist is precisely such a creature'[100]

The postformalist artist, including 'pseudo avant-garde' Koller was, according to the above, wiser, more knowledgeable; anything but robotic. Adorno had denounced occultism by this time as the 'metaphysics of dunces'; as the place to which thought regresses under late-capitalism and is denied a relationship with truth.[101] Yet under late-socialism, private spiritualism according to Havel could be an example of *Living*

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[99] Westad, during the détente, '(…) President Johnson, obsessed with Vietnam, had hardly bothered to protest the 1968 Soviet invasion of Czechoslovakia', *The Global Cold War*, pp. 194-195

[100] Burnham, 'Duchamp's Bride Stripped Bare', *Great Western Salt Works*, pp. 100

[101] Adorno, 'Theses against occultism', *Minima Moralia*, pp. 238-244

in Truth.[102] For Burnham, meanwhile, an embrace of the Jewish mystical tradition coincided with a fall-out with the 'rationalistic and empiricist apparatus' that Adorno associated with science, and Burnham with technology.

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[102] Havel's concept of 'living in truth' is detailed in his 1978 essay 'The Power of The Powerless', *Living in Truth*, pp. 36-122

Eduardo Kac: a cannibalistic use of cabala[103]

For Brazilian artist Eduardo Kac (1962-), Kabbalah is one aspect of his cultural inheritance that sits alongside an enduring commitment to new developments in technology.[104] Where Burnham used Kabbalah as a means of interpreting art, Kac has employed certain aspects of the tradition in the very structure or linguistic components of works such as *Storms* (1993) (Fig. 26.), *Shema* (1989) (Fig. 27.), and *Lilith* (1987/89) (Fig. 28.). When Kac began composing media poetry for online exhibition in the early '90s, a first draft of *Storms* (1993) reminded the artist of a Kabbalistic Sefirotic Tree diagram (Fig. 29.).[105] Sefirot, in the terminology of Kabbalah, refers to '[T]he vessels through which the light of the Creator is emanated to man'.[106] The diagram is composed of interconnecting vessels that map the conjunction of the 'Desire to Receive' and the 'Desire to Impart'.[107] Kac decided to pursue his initial perception of similarity further: he inserted additional links (present in the sefirotic system but missing from the poetic structure) into a hypertext network allowing the reader, depending on navigational choices made through clicks (on

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[103] Alternative spellings of Cabala/Kabbalah are employed by Burnham and Kac. Burnham favours Cabala and Kac, Kabbalah.

[104] 'I think there are layers and levels of meaning that technology has in our lives that really haven't been addressed. And I think that's true from a political view. If you look at it... Technology has the potential to empower people in many ways. If we leave technology behind in art, if we don't question how technology affects our lives, if we don't take charge, if we don't use these technological media to raise questions about contemporary life, who's going to do that?' Eduardo Kac, 'Eduardo Kac-- The Aesthetics of Dialogue', Interview with Simone Osthoff, 1994, http://www.ekac.org/intervcomp94.html

[105] 'After I finished the first draft of this hyperpoem, I noticed that its structure was coincidentally very similar to the diagram of of sefirotic systems typical of the Kabbalah', Kac, *Media Poetry: An International Anthology*, Kindle version, Loc. 953

[106] Philip S. Berg, *Kabbalah for the Layman*, Vol. I, pp. 181

[107] Ideally, 'a "desire to receive for itself alone", characterized by selfishness, egotism, materialism in man must be transmuted to a "desire to receive in order to impart" - a balance and harmony between receiving and imparting permitting the individual to draw into himself the positive light of the Creator'', Philp. S. Berg, *Kabbalah for the Layman*, Vol. I, pp. 177

vowels, consonants or the space surrounding the word), to experience inconclusive and mutable sequences of pre-selected words. The reader's first encounter might consist of:

'ALL/MELTS/ENDS/MELTS/SOME/STORIES/RESURFACE/LIKE/A SCENE/A FACE/A SCENE/A TRACE/OR/ELSE/ALL/MELTS'

Her second:

'ALL/ENDS/SOME/STORIES/MEMORIES/STORIES/MEMORIES/STORIES/RESUR FACE/LIKE/A FACE'[108] Made using HyperCard, a pre-Web computer application allowing the non-specialist to compose 'stacks' of cards that became visual pages on screen, *Storms* exhibits Kac's early enthusiasm for the Internet.[109] He would later write of his embrace of the Web, spurred by what in the early-mid '90s may have been (the) fact that '[W]ithout a governing body or directors that firmly control its content and development, the Internet can be approached from many different angles'.[110] Such enthusiasm situates Kac's early online art in a very specific time: post-Cold War, the end of which 'produced' the 'very important effect' of the Internet, and pre-War on Terror, the beginning of which was accompanied by a crackdown on

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[108] Two examples of the author's navigation through *Storms* http://www.ekac.org/storms.swf

[109] For a detailed description of HyperCard see Matthew Lasar's article '25 years of HyperCard—the missing link to the Web', http://arstechnica.com/apple/2012/05/25-years-of-hypercard-the-missing-link-to-the-web/

[110] Kac, 'Interactive Art on the Internet', 1995, Originally published in English and German in Mythos Information; Welcome to the Wired World, Karl Gerbel and Peter Weibel (eds), pp. 170-179 http://www.ekac.org/interactiveartonthenet.html

unapproved use of the Internet, with artists not exempt.[111] Kac's optimism may

surprise; given his knowledge of the control of print and broadcast media during the

Brazilian dictatorship, he appears to harbour few anxieties about the potential of the

Internet's use as vehicle for propaganda or means of surveillance.[112] In this respect,

Burnham sounds more contemporary than Kac: in pre-Internet 1970 he wrote, as I

have cited above, of the grave threat posed to human rights by computerized data

files. But in an apparent bid to emphasize technology's curative potential, Kac

designates the 'role of the Internet as a provider of voice and memory [that]

resonates against its opposite, censorship' and recommends the website

http://www.thefileroom.org/ (Fig. 30.) as an example of role fulfilment for

documentation, among others, of the work of Uruguayan Mail and performance artist

Clemente Padin, who was imprisoned in 1975 for the 'vilification and mocking of the

armed forces'.[113]

The Internet's offer of continuity to principles developed by Kac in his pre-Web poetry

may also factor in the artist's confidence: reception of his holopoetry is based on a

most literal and physical notion of approach from different angles. According to

Padin's description, in a small catalogue of Kac's poetry, the holopoem is conveyed

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[111]

Boris Groys interviewed by Judy Ditner, in Massimiliano Gioni, Jarrett Gregory & Sarah Valdez (eds), *Ostalgia.* New York: New Museum, 2011, pp.59

'The Internet is the most self-censored and censored thing (…) it's not the Internet's fault: since 2001 all these new terror laws have come into effect. As soon as you even talk about a project that could have legal implications you're already considered a threat', Lizvix, artist speaker, ICA panel talk, 'Peer to Platform: Artist Collective vs. Social Network', 1 May 2013

[112] This is not the case with Lev Manovich, who wrote in 1998 that 'A Western artist sees the Internet as a perfect tool to break down all hierarchies and bring art to the people. In contrast, as a post-communist subject, I cannot but see the Internet as a communal apartment of the Stalin era: no privacy, everybody spies on everybody else', *The Language of New Media*, pp. x

[113] Kac, 'Interactive Art on the Internet', http://www.ekac.org/interactiveartonthenet.html

via hologram image technology which not only transmits discrete visual characteristics of an object but rather its whole spatial character. Every aspect of its surface is transmitted, meaning that it has the potential to be read by many different people simultaneously, and from many different positions. Indeed, the holopoem is dependent on 'the relative position of the spectator'.[114] *Shema* (1989) is one such poem that sets four words floating through intersecting colour fields in order that a 'transitional discontinuity' of meaning occurs: four Hebrew words are modified by one large letter "shien" (S) and, in accordance with the viewer's movement in front of the work, 'the word "maim" (water) is modified by the letter "shien" (S), to produce "shamaim" (sky, heaven). The word "mavet" (death) is modified by "shien" to suggest "Shmvot" (Exodus). The word "mah" (why, what), is modified to form "shamah" (desolation, destruction). At last, the word "mash" (to trough off, to remove) becomes "shemesh" (sun)'.[115]

Burnham barely attends to the idea of relational spectatorship in his analysis of Duchamp's *Large Glass,* yet the artist himself harboured ideas of something strikingly similar to that required for reading a holopoem. Steefel writes that Duchamp 'indicated approval of experimentation and personal approach by which the viewer works with the artist to bring the work to life'.[116] Burnham does, however, write of the Hebrew term 'Shema'. In his review of Robert Morris's *Hearing* (1972) (Fig. 31.), he points to the artist's apparent understanding of hearing ('Shema' means

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[114] Author's translation, 'el holograma está condicionado por la paralisis binocular y, además, por la posición relativa del espectador con respecto al mismo' Padin, 'Poesía holográfica', *Poesía Electrónica – Dos precursores latinoamericanos: Eduardo Kac y Ladisloa Pablo Györi*, pp. 4

[115] Kac, *Media Poetry: An International Anthology*, Kindle version, Loc. 2371

[116] Steefel, *The Position of Duchamp's Large Glass in the Development of His Art*, pp. 19

'listen, hear, understand)' as 'faith of the heart'. In Burnham's view Morris, in his

denial of rights to copy and commoditise the video tape element of his work, has

privileged spiritual and emotional experience over 'Malkhut', the Kabbalistic term for

desire to receive in the physical world.[117] 'The more we perceive the significance of

Hearing (…) the less meaning it has as a precious artifact', Burnham writes,

indicating a preference for the immaterial in art.[118] Kac's holopoems foreground

cognitive experience: unless properly installed they are somewhat underwhelming;

dependent upon proper installation and the viewer's commitment to read. Kac also

aligns *Shema* with a form of spiritual experience: 'The possible eight words produce

an atmosphere of association about death and emotional loss'.[119]

Inspiration for *Shema* and *Storms* is not only kabbalistic, however. Arguably, the

artist has imbibed or, to use Brazilian poet Oswald de Andrade's term, 'cannibalised'

an upbringing in the mystical tradition and infused it with politically motivated ideas

about freeing language from stricture. The symbolic value of the above holopoems is

done a disservice if we do not also attend to them as precursors to Kac's 1999 essay

'Negotiating Meaning: The dialogic Imagination in Electronic Art', in which he quotes

Czech philosopher Vilém Flusser's statement that 'what we call "I" is a knot of

relations'.[120] If observation of Kac's poetry as a knot, or network structure has

already been made, we can also see the clear parallel between the 'knot of relations'

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[117] Burnham, 'Voices from the Gate', *Great Western Salt Works*, pp. 122

[118] The video tape element of Hearing consisted of 'the artillery of twentieth-century academicism' – Wittgenstein, Foucault, Chomsky et. al – thrown at Morris, who occasionally responds. See *Great Western Salt Works*, pp. 122

[119] Kac, *Media Poetry: An International Anthology*, Kindle version, Loc. 2366

[120] Kac, 'Negotiating Meaning: The Dialogic Imagination in Electronic Art', http://www.ekac.org/dialogicimag.html

and 'Systems Esthetics' reference to 'a complex of components in interaction' of which the individual (artist) is but one. Kac's nod to Suzi Gablik's notion that 'Modernist aesthetics' as characterised by concern with 'power implied by asserting one's individuality (…) leads, finally, to a deadening of empathy', coincides with Burnham's reference to Haacke's (post-Modernist) insistence 'that the need for empathy does not make his work function as with older art'.[121]

It is equally pertinent to trace Kac's very interest in the dialogic to his lived experience of a country emerging from dictatorship. He dedicates *Shema* to Perla Przytyk, the grandmother who raised Kac and 'revealed' to him 'the power of dialogicality' when 'there seemed to be no escape from oppressive monological discourses'.[122] The time to which Kac refers is clearly that of Brazil's rule by military government from 1964-1985. It was in the waning years of this rule that he founded the Poesia Pornô movement, consisting of weekly group performances given in open spaces such as Ipanema beach or Rio's central Cinelândia square. Verbal riffs, songs, puzzles, surprise object presentations and live graffiti performances were organised by the porno poets with a view to encouraging communal rediscovery of repressed forms of language and behaviour: 'so-called vulgar or bad words became noble and positive. Scatological discourse and political discourse were one and the same and were manifested through cheerful orgiastic liberation'.[123] Simone Osthoff

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[121] Burnham, *Framing and Being Framed*, pp. 132

[122]

Kac, *Telepresence and bio art*, pp. xiv

Perla's relation to Kac is detailed in Christopher Dickey, 'I Love My Glow Bunny', *Wired Magazine*, http://www.wired.com/wired/archive/9.04/bunny_pr.html

argues that the poets evoked the spirit of Oswalde de Andrade, who proposed 'the permanent transformation of taboo into totem'. One might also recall a line of his 1928 'Canabalist Manifesto': 'Joy is the acid test', and his allusion to the 'happiness' of pre-colonial Brazil of which Kac was reminded when a Poesia Pornô beach performance ended with many people undressing and walking into the sea in 'a gesture of rebirth and purification' with 'no physical boundaries between performers and audience'.[124]

In view of my earlier discussion of paranoia regarding dehumanization in the information age it is worth noting that Kac takes pains to privilege positive embodied experience before he turns to robotics and exercises in telepresence. *Escracho*, an artist's book documenting Kac's early '80s involvement in art, includes several examples of naked joy alongside photographic documentation of porno poetry performances (Fig. 32.). Its cover, a bright pink and orange spread featuring a naked man and woman who appear to have fallen, arms and legs extended skywards, from a celestial space (Fig. 33.), introduces scrapbook style contributions from thirty artists. What passes as an editorial page describes 'Ezra Kac' as 'irresponsible' for the 'disorganization' of the 'ignoble' publication we have in our hands (Fig. 34.). On the same page we read that *Escracho*'s mixture of vanguard language (typographic art, electro-acoustic music, video-theatre, etc.) with other forms of expression

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[123] Kac, 'Eduardo Kac-- The Aesthetics of Dialogue', Interview with Simone Osthoff, 1994 http://www.ekac.org/intervcomp94.html

[124] Kac, 'Eduardo Kac-- The Aesthetics of Dialogue', Interview with Simone Osthoff, 1994 http://www.ekac.org/intervcomp94.html

(cartoons, graffiti, photography, etc.) has resulted in a 'panacea of pan-semiotic creation'.[125]

An early example of Otavio Donasci's videocreatures is found among the closing pages of *Escracho* (Fig. 35.). Donasci's textual accompaniment to two photographic illustrations of a human performer expressing himself through both body and, in substitute for his face, a video screen, indicates his belief that 'the expression of this hybrid represents a new field of language that is different from video (static, two-dimensional), and from theatre (lacking close-ups, editing, special effects)'.[126] The implication seems clear that the information age heralds linguistic exchange across organic and technological platforms. A 'panacea of pan-semiotic creation' implies approaching our new field of language therapeutically ('panacea' designates a solution or remedy for all difficulties or diseases); combining embodied and remote electronic communication in the most harmonious manner possible. 'This might', Kac writes in 'Negotiating Meaning', 'imply that electronic art cannot be exclusively digital. Technology does not exist in a vacuum, and the world, with its smooth and rough surfaces, is analogue (…) It is exactly as a negotiating agent between the two, in the interface between analogue and digital, that the new electronic art is emerging'.[127] We can readily situate Kac as an inheritor of Burnham's thoughts on art and information processing. In the *Software* catalogue he wrote that '[F]or many visitors

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[125] Author's translation, Kac 'Da mescla de linguagens de vanguarda (Dactylo Art, Música Electroacústica, Vídeo-Teatro, etc.) resultou esta panacéia de criação pan-semiótica', *Escracho*, pp. 6

[126] Author's translation, Donasci, 'Acredito que a expressão desse "ser híbrido" num espaço cénico seja uma linguagem nova diferenciada do vídeo (estático, bidimensional) e do teatro (sem recursos como close, ediçao, trucagens etc.)', *Escracho,* pp. 11

[127] 'Negotiating Meaning: The Dialogic Imagination in Electronic Art', http://www.ekac.org/dialogicimag.html

there will be no "art" in the motion pictures, conceptual displays, television monitors, computer-based readers, and time-sharing terminals of the exhibition (…) These activities, however, possess the sensory consistency of the oral tradition'.[128]

If Burnham was pessimistic about visitors to *Software* making the connection between oral interaction and computer-facilitated communication, those who attended the *Brasil High Tech* show in 1986 would have been hard pressed to deny the link.[129] This exhibition, organised by Kac and Flavio Ferraz at Rio de Janeiro's Galeria de Arte Centro Empresarial, 'a very nice gallery in front of Botafago beach' featured eleven artists from São Paulo and two from Rio. Kac explains how selected artworks were created for videotext (a nationally accessible digital database predating the Web), meaning that 'people could see them from any part of the country'. Holograms, infrared sculptures, computer animation and a robot were also on display in the gallery. The latter was Kac's *RC Robot* (1986) (Fig. 36.), a seven foot tall anthropomorphic robot who conversed with visitors in real time. As Kac explains, '[T]he robot's voice was that of a real human being transmitted via radio waves. Motion control was also achieved through a radio link'.[130] On the night of the opening, *RC Robot* also interacted with one of Otavio Donasci's videocreatures: the former improvised responses to the latter's pre-recorded messages and to the audience's reactions. If in 1968 Burnham wrote that '[M]ost sculptors instinctively

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[128] Burnham, 'Notes on art and information processing', *Software* exhibition catalogue, pp. 13

[129] Brasil High Tech is described as Kac as 'the first national survey of Brazilian artists working with new technological media specifically'. Further research is required to recover documentation of artworks other than those realised by Kac and Onasci. Other participating artists included Gino Zaniboni Netto, Julio Plaza, Nelson das Neves, Rodolfo Cittadino and Rose Zangirolami, according to a listing found at http://www.cibercultura.org.br/tikiwiki/tiki-index.php?page=Brasil+High+Tech

[130] Kac, *Telepresence and bio art*, pp. 128

realise that they lack the technical skills to create functional robots'; it appears that by 1986 the skills gap had, for some at least, disappeared.[131] And this outside of the U.S., where 'commitment to technology has been more easily gratified'.[132]

By 1989, however, Kac had moved to Chicago, to some extent confirming Burnham's observation. '[N]one of the materials I had to work with were available in [Brazil]', Kac said, of his attempts to get his holographic works off the ground in his native country: he had some success in importing resources and successfully realised holopoems *Holo/Olho* (1983) (Fig.37.) and *Quando?* (1987/88) (Fig.38.) in Brazil. But technical difficulties in repairing equipment from home convinced Kac of the need to relocate.[133] I wish, though, to emphasise the continuity of the U.S. project with Kac's artistic development in Brazil. The first work he realised in the U.S., a collaboration with electronics expert Edward Bennett titled *Ornitorrinco* (1989-1996) (Fig. 39.), was in continuity with interests shown in *RC Robot* in remote control and sensing. And though *Brasil High Tech* was apparently 'the most popular show' hosted by Galeria de Arte Centro Empresarial, there was already a strong tradition of technological work in Brazilian art history that Eduardo Kac has taken pains to recover: in 1996 the artist guest-edited *Leonardo*'s special three year project documenting the history and significance of Brazilian technological art.[134] Titled 'A Radical Intervention: The Brazilian Contribution to the International Electronic Art Movement', the project

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[131] Burnham, *Beyond Modern Sculpture*, pp. 325

[132] Burnham, *Beyond Modern Sculpture*, pp. viii

[133] Eduardo Kac, 'Eduardo Kac-- The Aesthetics of Dialogue', Interview with Simone Osthoff, 1994 http://www.ekac.org/intervcomp94.html

[134] *Leonardo* is an MIT press journal founded in 1968 as a platform for 'the writings of artists who use science and developing technologies in their work' http://www.leonardo.info/leoinfo.html

included an essay by Claudia Calirman (author of *Brazilian Art Under Dictatorship*) on women, art and technology in Brazil and Kac's interview with Abraham Palatnik, a 'pioneer of kinetic art' who participated in the first International Biennial of São Paulo in 1951. Mario Pedrosa's contemporary review of Palatnik's participation in the Biennial was reproduced as part of Kac's editorial project. It describes Palatnik's transformation of the 'luminous image' – normally an experience 'of industrial or commercial nature (…) nothing but a brutal aggression to our spirit and senses' – into 'the ultramodern magic effects of colors and forms in motion'.[135] Entire walls were illuminated with moving coloured shapes projected from a perforated light box. Pedrosa considered the work an adoption of Moholy Nagy's idea of light frescoes, which 'might become (…) the true art of the future'.[136]

Also featured in the editorial project was Annateresa Fabris's discussion of Waldemar Cordeiro's work with computers as early as 1968. His first experiment was conducted using an IBM 360/44 computer at the Universidade de São Paulo School of Physics: *Bebá* (1968) was the title of the resulting ten page booklet 'featuring various sets of three vowels and three consonants that were progressively changed to cover the entire alphabet in proportional rate to their occurrence in Portuguese usage'.[137] Fabris describes Cordeiro's 'quest for a precise, "self-conscious" art capable of responding to the technical issues raised by technological advancement as well as by the cultural status of mass society'. Cordeiro also defended the need,

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[135] Pedrosa, 'The Chromatic Plastic Dynamism of Abraham Palatnik: An Introduction to the FirstInternational Biennial of São Paulo (1951)', *Leonardo*, Vol. 29, No. 2 (1996), pp. 117-118

[136] Ibid.

[137] Annateresa Fabris, 'Waldemar Cordeiro: Computer Art Pioneer'
http://www.leonardo.info/isast/spec.projects/fabris.html

in a Burnhamesque turn of phrase, for 'a new art canon based on a "repeatable relation, a mechanism for integrating the object in the outer world," with accurate meanings that do not exist in conventional and subjective formulas of traditional aesthetics'.[138] Altogether, it would appear that Kac's project demonstrates the erroneous nature of the suggestion made at the time of the U.S. boycott of the X São Paulo Biennial (1969); that Brazil had little experience of the technologically engaged work of art.[139]

In recovering Brazil's technological art history, Kac has explored a terrain that interested Burnham. Writing in *The Structure of Art* in 1971, Burnham employs Barthes with a view to encourage mistrust of the 'iconic message': Barthes 'insists' that 'all iconic messages have their social equivalent in verbal form' that '(…) stemming from the signifying system itself, provides clues to the hidden and social meanings and values behind all such forms of communication'.[140] It is lamentable, in Burnham's eyes, that the art establishment reinforces the iconic and (inconsistently) hides its system of values. This state of affairs results in 'mutual suspicion' between the 'groups that control art': 'artists' peers, critics, galleries, museum curators, art historians and major collectors' and the artist, and further results in artists beginning to 'suspect that rewards from the control group are in direct proportion to artists'

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[138] Annateresa Fabris, 'Waldemar Cordeiro: Computer Art Pioneer'
http://www.leonardo.info/isast/spec.projects/fabris.html

[139] Claudia Calirman writes that 'Sidney Dillon Ripley, the secretary of the Smithsonian Institute in Washington, which sponsored the U.S. delegation in the Sao Paulo biennials, was quoted [in a New York Times article titled "Sao Paulo Show Loses U.S. Entry"] as saying that he "deeply lament[ed] that the people of Brazil, of Latin America, and other parts of the world [would] be deprived of an opportunity to see the novel and exciting exhibition that Professor Kepes and his colleagues had been preparing.', *Brazilian Art under Dictatorship*, pp. 30

[140] Burnham, *The Structure of Art*, pp. 20

ability to demonstrate continuity within the dialectical scheme of art history'.[141] Artists who worked with new technologies fell wide of the dialectic, it would appear, both in the U.S. of the 1960s-70s and in Brazil throughout a longer period during which the military regime was a powerful additional member among 'groups that control art'. Once democracy was restored, Brazilian art critics 'celebrated the return to the pleasures of painting', meaning that only more recently have the experimental works of young artists such as Cildo Meireles received an audience.[142]

It is therefore in Kac's role as excavator of a lost Brazilian art history concerned with technology, as well as his part in the radical progression of this tradition, that I argue for his importance as an artist. A case can also be made for Kac's revival of the discredited elements of *Beyond Modern Sculpture*: in his late progression to bio art we see Kac engage in the actual creation of new kinds of life and thus echo Burnham's revised and disavowed prophecy regarding the 'literal' placement of 'life in the artist's hands'.[143] *GFP Bunny* (2000) (Fig.40.), also known as Alba, is Kac's most controversial transgenic project comprising 'the creation of a green fluorescent rabbit, the public dialogue generated by the project, and the social integration of the rabbit'. To briefly explain, *GFP* stands for green fluorescent protein, as found in the jellyfish Aequorea victoria. With the help of a team of scientists, this protein was injected into the genome of a rabbit who then carried its pregnancy successfully to

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[141] Burnham, *The Structure of Art,* pp. 22

[142] Cildo Meirles's *Insertions into Ideological Circuits* were included in Tate Modern's 2005 exhibition, *Open Systems: Rethinking art c. 1970*

[143] Burnham, First and second printing *Beyond Modern Sculpture*, pp. 376

term. Kac cautions that 'Transgenic art is not about the crafting of genetic *objets d'art*'; that is to say:

> 'The word "aesthetics" in the context of transgenic art must be understood to mean that creation, socialization and domestic integration are a single process. The question is not to make the bunny meet specific requirements or whims, but to enjoy her company as an individual (all bunnies are different), appreciated for her own intrinsic virtues, in dialogical interaction'[144]

One might readily compare this understanding of Alba's 'aesthetic' value with the Bertalanffian notion of the organism as a component integrated into a system. Reception of *GFP Bunny* was in part hostile, as evidenced in *Alba Guestbook* (2000) (Fig.41.). Ultimately though, even the most outraged of responses raised questions that amounted to an ethical debate: 'It's OK to do medical research on animals, but a jelly-rabbit! Definitely, E.Kac is crazy', wrote Melanie in October 2000, while anemix@ihateclowns.com posted two months later, '[T]his is nothing more than another tasteless human way to show it's superiority over other creatures'.[145] The project's censorship, despite Kac's campaign to 'Free Alba' (Fig. 42.), meant that the rabbit ultimately did not leave the lab in which she was bred in France. Thus Kac's holistic approach to his project, which should have ended in Alba being domesticated and cared for by Kac, was ultimately defeated. Given that this eventuality might easily have been foreseen it is difficult to wholeheartedly condone *GFP Bunny*.

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[144] Kac, 'GFP Bunny', Leonardo, Vol. 36, No. 2 (2003), pp. 97-102

[145] Comment found in *Alba Guestbook* (2000) http://www.ekac.org/bunnybook.2000.html

Reading Kac's introduction to *Signs of Life*, a collection of essays on artistic work with live organisms, one detects nothing but good intentions and concern for the unethical treatment of genetic data:

'developments in genomics, such as the Human Genome Project, and subsequent research (…) bring with them the potential of important social benefits as well as the horrifying specter of what I call a genocracy, that is, a government that conducts social policy (privacy legislation, public health, labor regulations, law enforcement) based on the false belief that genes alone determine matters of life and death'[146]

And yet persuasive arguments are lacking for turning such concerns into actual subjects (living beings) of debate.

Arguably, earlier projects such as *Rara Avis* (1996) (Fig. 43.), comprising an artificial caged bird and an invitation to the viewer to wear a video headset affording the opportunity to adopt the bird's perspective, as well as *Essay Concerning Human Understanding* (1994) (Fig. 44.), a collaboration with Ikuo Nakamura that established humans, plants and animals as 'part of a tele-mediated assemblage of feedback loops, each affecting the behavior of the other and the system as a whole' are equally critical yet more ethical projects than *GFP Bunny*. Both of the latter are readily inserted into a field of enquiry introduced into mainstream art criticism by Burnham:

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[146] Kac, *Signs of Life*, pp. 1

'Increasingly "products" — either in art or life — become irrelevant and a different set of needs arise: these revolve around such concerns as maintaining the biological livability of the Earth, producing more accurate models of social interaction, understanding the growing symbiosis in man-machine relationships, establishing priorities for the usage and conservation of natural resources'[147]

If Burnham omits the animal dimension from 'Systems Esthetics' he in any case rejects the superiority of the human – he namechecks Alain Robbe-Grillet in 'Systems Esthetics', and in *The Structure of Art* explicitly states that 'Anthropocentrism, or the belief that the Earth is at the complete disposal of its dominant inhabitant, man' is 'open to question'.[148] Furthermore, we see the question of the animal reintroduced in the illustration of much of Burnham's work by Hans Haacke's systems.[149] Finally, one might see Burnham, Kac, and Haacke's affinity with the utopian underpinnings of American writer Richard Brautigan's 1967 poem 'All Watched Over by Machines of Loving Grace'.[150]

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[147] Burnham, 'Systems Esthetics', *Great Western Salt Works*, pp. 15-16

[148] Burnham, *The Structure of Art*, pp. 5

[149] Burnham's first illustration of *Real Time Systems* is Haacke, *Chickens Hatching* (1969), Great Western Salt Works, pp. 31. See Skrebowski, *All Systems Go: Recovering Jack Burnham's 'Systems Aesthetics'*, *Tate Papers*, Spring 2006, for discussion of Haacke's unrealised work *Norbert*, which would have involved training a bird to repeat the words 'All systems go'

[150] See Appendix

Conclusion

'All Watched Over by Machines of Loving Grace'?

In the present era of the rapid expansion of commercial and governmental use of drones for surveillance and extra-territorial executions, the question of watching over / being watched over by technology has never been more relevant.[151] In 'Art in the One Dimensional Society', Marcuse wrote '(…) the survival of art may turn out to be the only weak link that today connects the present with hope for the future'.[152] It is a utopian thought, and one that has surfaced above. Koller and Kac, sharing a utopian and anti-political stance, seem to have no wish for art to gain in strength. In a rare breach of silence in 2002 Burnham suggested that he may share this stance: 'Artists' he wrote 'work with weak forces'. It is perhaps this weakness that allows art to 'lend sensitivity', but also to critique, technology and its use.

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[151] Artists have a responsibility, one might argue, to 'watch over' technology. A recent example: Movable Borders: Here Come the Drones! An exhibition curated by Dave Young for Furtherfield Gallery, London, 11 – 26 May 2013Artworks and projects by Bureau of Inverse Technology (US & AU), Lawrence Bird (US), Patrick Lichty (US), Dave Miller & Gavin Stewart (UK), The Force of Freedom (NL) and Dave Young (NL)

[152] Douglas Keller (ed.), Herbert Marcuse, 'Art in the One-Dimensional Society', Herbert Marcuse: Art and Liberation, pp. 113

APPENDIX

I)   'All Watched Over by Machines of Loving Grace', Richard Brautigan, 1967

I like to think (and
the sooner the better!)
of a cybernetic meadow
where mammals and computers
live together in mutually
programming harmony
like pure water
touching clear sky.

I like to think
(right now, please!)
of a cybernetic forest
filled with pines and electronics
where deer stroll peacefully
past computers
as if they were flowers
with spinning blossoms.

I like to think
(it has to be!)
of a cybernetic ecology
where we are free of our labors
and joined back to nature,
returned to our mammal
brothers and sisters,
and all watched over
by machines of loving grace.

BIBLIOGRAPHY

<u>SOURCES CITED:</u>

T. Adorno, *Minima Moralia: Reflections on a damaged life*. London and New York: Verso, 2005 (Translation first published by New Left Books, 1974, originally published Frankfurt, 1951)

      Theses against occultism, pp. 238-244

O. de Andrade

- A. Danchev, *100 Artists' Manifestos*. London: Penguin, 2011. 'Cannibalist Manifesto (1928)', pp. 262-266

http://pdfsb.com/readonline/5946564c6651703058484231446e396b55513d3d

P. S. Berg, *Kabbalah for the Layman: a guide to cosmic consciousness*. Jerusalem, Israel: Press of the Research Centre of Kabbalah, Vol. I, 1981 & Vol. III, 1988

L. von Bertalanffy

- *General Systems Theory: foundations, development, applications*. New York: George Braziller, 1969

- *Robots, men and minds: psychology in the modern world*. New York: George Braziller, 1967

Published in Czech (Translation by J. Kamarýt. Prague: Svoboda, 1972) as *Clovek-robot a mysleni*. With special foreword by von Bertalanffy crediting Karel Čapek for coining the term robot in his 1920 play *R.U.R.* 'Rossum's Universal Robots'. The word robot derives from *robota* 'forced labour'

R. Brautigan, 'All Watched Over by Machines of Loving Grace',

http://www.brautigan.net/machines.html, published as 'All Watched Over by Machines of Loving Grace, Limited Edition of 1,500 copies, all for free distribution. San Francisco, California: The Communication Company, April 1967

J. Burnham

- *Beyond Modern Sculpture*. New York: George Braziller, 1968 (Reprinted with alternative conclusion April 1973)

- *The Structure of Art*. New York: George Braziller, 1971

- 'Notes on art and information processing', in *Software, Information Technology: its New Meaning for Art*, exhibition catalogue essay, 1970

http://monoskop.org/images/3/31/Software_Information_Technology_Its_New_Meaning_for_Art_catalogue.pdf

- J. Burnham, *Great Western Salt Works*. New York: George Braziller, 1974

        'Systems Esthetics', pp. 15-25

        'Real Time Systems', pp. 27-46
        'Willoughby Sharp interviews Jack Burnham', pp. 63-69

        'Duchamp's Bride Stripped Bare: The Meaning of the "Large Glass"', pp. 89-117

        'Voices from the Gate', pp. 119-123 (for review of Robert Morris's *Hearing* and reference to Mircea Eliade)

        'Objects and Ritual: Towards a Working Ontology of Art', pp. 147-158 (for reference to Tadeusz Kantor)

- Hans Haacke: Framing and Being Framed, 7 Works 1970-75. Halifax: The Press of the Nova Scotia College of Art and Design & New York: New York University Press, 1975
        'Steps in the Formulation of Real-Time Political Art', pp. 127-141

- J. Burnham, 'Art and Technology: The Panacea that Failed', in K. Woodward (ed.), *Myths of Information: Technology and Postindustrial Culture,* Madison, WI: Coda Press, 1980.

http://www.etantdonnes.com/SystemsArt/Burnham_Panacea_1980.pdf

- G. Battcock, *Idea art: a critical anthology*, (1st Ed.). New York: Dutton, 1973
        Jack Burnham, 'Problems of Criticism', pp. 46-69

First published as "Problems of Criticism, IX: Art and Technology" in *Artforum* magazine, Vol. 9, No. 5, January 1971, pp. 40-45

*- '*Ten Years Before the Artforum Masthead', *The New Art Examiner,* Vol. 4, No. 5 (February 1977), pp. 1 and 6-7

- 'Excerpts from an Interview with Jack Burnham' by Lutz Dammbeck, 2002

Transcript by Robert Horvitz http://www.volny.cz/horvitz/burnham/lutz-interview.html Interview initially filmed for Dammbeck's documentary *The Net*, none of the interview appears in the film's final cut

- M. B. Nathanson (ed.), *Komar and Melamid:Two Soviet Dissident Artists*. Carbondale and Edwardsville, IL: Southern Illinois University Press, 1979

Introduction by Jack Burnham, 'Paradox and Politics: The Art of Komar and Melamid', pp. xv-xxxix

C. Calirman

- *Brazilian Art under Dictatorship: Antonio Manuel, Artur Barrio, and Cildo Meireles*. Durham & London: Duke University Press, 2012

- E. Kac, 'Editorial: Brazilian Technological Art in "Leonardo" and on the Web', Kac refers to a forthcoming 'essay by Claudia Calirman on women, art and technology in Brazil'. *Leonardo*, Vol. 29. No. 2, pp. 116, 1996

D. Crowley and J. Pavitt (eds.), *Cold War Modern: Design 1945-1970*. London: V&A Publishing, 2008

'The Hi-Tech Cold War', pp. 163-191

D. Crowley and S. E. Reid (eds.), Socialist spaces: sites of everyday life in the Eastern Bloc. Oxford: Berg, 2002

P. Bren, 'Weekend Getaways: The Chata, the Tramp, and the Politics of Private Life in Post-1968 Czechoslovakia', pp. 123-140

E. von Daniken, *Chariots of the Gods?* Souvenir Press Ltd., 1969

C. Dickey, 'I Love My Glow Bunny', Wired 9.04,

http://www.wired.com/wired/archive/9.04/bunny_pr.html

M. Duchamp, 'Where Do We Go From Here?'

Symposium at Philadelphia Museum College of Art, Match 1961, Address to a symposium at the Philadelphia Museum College of Art, March 1961 (Translated by Helen Meakins, first published in the Duchamp issue of *Studio International*, 1975)

https://www.msu.edu/course/ha/850/Where_do_we_go_from_here.pdf

A. Fabris, 'Waldemar Cordeiro: Computer Art Pioneer', *Leonardo*, Vol. 30, No. 1 (1997), pp. 27-31

A. Fraser, '1% c'est moi' Fraser's contribution to The Whitney Biennial 2012, First published in *Texte zur Kunst* 83, September 2011, pp. 114-127

http://whitney.org/file_columns/0002/9848/andreafraser_1_2012whitneybiennial.pdf.

C. Freire and K. Kemp-Welch (eds.), *ARTMargins* #2, Special Section on Artists' Networks in Eastern Europe and Latin America, June - October 2012.

M. Fried, 'Art and Objecthood', 1967

http://atc.berkeley.edu/201/readings/FriedObjcthd.pdf

Furtherfield, *Movable Borders: Here Come the Drones!* Exhibition by Bureau of Inverse Technology, Lawrence Bird, Patrick Lichty, Dave Miller & Gavin Stewart, The Force of Freedom and Dave Young, Furtherfield Gallery, London, Saturday 11 - Sunday 26 May 2013

http://www.furtherfield.org/programmes/exhibition/movable-borders-here-come-drones

E. Galeano, *Open Veins of Latin America: five centuries of the pillage of a continent.* London: Serpent's Tail, 2009. Translated by Cedric Belfrage
Originally published as *Las venas abiertas de América Latina* by Siglo XXI Editores, Mexico, 1971

P. Giller, *Kabbalah: A Guide for the Perplexed.* London: Continuum, 2011

A. von Graevenitz
- C. Mesch and V. Michely, *Joseph Beuys: The Reader*
  'Breaking the Silence, Joseph Beuys on his 'Challenger', Marcel Duchamp' , pp. 29-49 (First published in Rainer Jacobs, Marc Scheps and Frank Günter Zehnder (eds.), *In Media Res. Festschrift zum siebzigsten Geburtstag von Peter Ludwig.* Cologne: DuMont, 1995, pp. 197-224, translated by Claudia Mesch)

J. N. Green, *We Cannot Remain Silent: Opposition to the Brazilian Military Dicatatorship in the United States.* Durham and London: Duke University Press, 2010
  'Defending Artistic and Academic Freedom', pp. 115-177

B. Groys
- 'Boris Groys interviewed by Judy Ditner', M. Gioni, J. Gregory & S. Valdez (eds), *Ostalgia.* New York: New Museum, 2011, pp. 58-59

F. Halsall, *Systems of Art: Art, History and Systems Theory.* Oxford, Bern, Berlin, Bruxelles, Frankfurt am Main, New York, Wien:Peter Lang, 2008

Havel
J. Vladislav (ed.), *Living in Truth: twenty-two essays published on the occasion of the award of the Erasmus Prize to Vaclav Havel.* London: Faber, 1989

G. Hecht (ed.), *Entangled geographies: empire and technopolitics in the global Cold War.* Cambridge, Mass.; London: MIT Press, 2011

  S. D. Schmid, 'Nuclear Colonization?: Soviet Technopolitics in the Second World', pp. 125-154

  L. Denicke, 'Fifty Years' Progress in Five: Brasilia—Modernization, Globalism, and the Geopolitics of Flight', pp. 185-208

R. Horvitz, personal correspondence. Several sources related to Burnham accessed from Horvitz's website: http://www.volny.cz/horvitz/burnham/homepage.htm
C. A. Jones, 'Systems Symptoms', *Artforum*, 50th anniversary special issue, Vol 51: Number 1, September 2012, pp. 113-116

E. Kac

- 'Abraham Palatnik, Pioneer of Kinetic Art', Kac interviews Palatnik, Leonardo, Vol. 29, No. 2 (1996), pp. 120-121

- 'Editorial: Brazilian Technological Art in "Leonardo" and on the Web', *Leonardo*, Vol. 29. No. 2, pp. 116, 1996

- 'The Alba Guestbook', online multi authored compendium

http://www.ekac.org/bunnybook.2000_2004.html

- 'GFP Bunny', *Leonardo*, Vol. 36, No. 2 (2003), pp. 97-102

- S. Britton and D. Collins (eds.), *The Eighth Day: the transgenic art of Eduardo Kac*. Tempe, Ariz: Institute for Studies in the Arts, 2003

- E. Kac (ed.), *Signs of Life: bio art and beyond*. Cambridge, Mass. and London: MIT, 2007

- E. Kac (ed.), Media poetry: an international anthology. Bristol: Intellect, 2007

   'From ASCII to Cyberspace: A trajectory in Digital Poetry', pp. 45-65

- E. Kac, *Escracho*. Artist's book, 1983

- E. Kac, 'Interactive Art on the Internet', 1995. ESCALA, University of Essex. Also

http://www.ekac.org/interactiveartonthenet.html

- E. Kac, 'Negotiating Meaning: the dialogic imagination in electronic art'

Bostad, Finn and C. Brandist, L. E. Sigfred, H. C. Faber (eds.), *Bakhtinian Perspectives on Language and Culture; Meaning in Language, Art and New Media*. New York: Palgrave Macmillan, 2004, pp. 199-216.

http://www.ekac.org/dialogicimag.html

K. Kemp-Welch

- 'Reticence as Dissidence: A Historiography of Antipolitics for Art History', Conference paper delivered at 'The Art of the Impossible: Culture, Philosophy and Dissent from Havel to the Present', University College London, 25 May 2013

- 'Doubt', manuscript chapter on the work of Július Koller, publication forthcoming

J. Lacouture, 'From the Vietnam War to an Indochina War',

http://www.foreignaffairs.com/articles/24174/jean-lacouture/from-the-vietnam-war-to-an-indochina-war (First published July 1970)

M. Lasar, '25 years of HyperCard—the missing link to the Web', Ars Technica, May 2012.

http://arstechnica.com/apple/2012/05/25-years-of-hypercard-the-missing-link-to-the-web/

E. László, *The Relevance of General Systems Theory: papers presented to Ludwig von Bertalanffy on his seventieth birthday.* New York: George Braziller, 1972

L. Manovich, *The Language of New Media*. Cambridge, MA: MIT Press, 2001

H. Marcuse

- H. Marcuse, *One-Dimensional Man*. Boston: Beacon Press, 1964

http://www.public.iastate.edu/~carlos/607/readings/marcuse.pdf

- H. Marcuse, 'Vietnam – Analysis of an Example'
Translation Allison Brown. First published in German, 'Vietnam – Analyse eines Exempels', *Neue Kritik*7, no. 36–37 (July-August 1966), pp. 30-40

http://germanhistorydocs.ghi-dc.org/docpage.cfm?docpage_id=2124

- Douglas Keller (ed.), Technology, War and Fascism: Collected Papers of Herbert Marcuse, Vol. I. London & New York: Routledge, 1998

      'Some Social Implications of Modern Technology', pp. 40-65 (First published in the Institute Journal, Studies in Philosophy and Social Science, Vol. 9, Nr. 3 (1941): 414-39)

- Douglas Keller (ed.), Art and Liberation: Collected Papers of Herbert Marcuse, Vol. 4. London & New York: Routledge, 2007

      'Art in the One-Dimensional Society', pp. 113-122 (First presented as a lecture at the New York School of Visual Arts, March 8, 1967)

M. McLuhan, *Understanding media: the extensions of man*. London: Ark, 1987, 1964

S. Osthoff

- A. Chandler and N. Neumark (ed.), *At a Distance: Precursors to Art and Activism on the Internet*. Cambridge, Ma. and London: MIT Press, 2006

S. Osthoff, 'From Mail Art to Telepresence: Communication at a Distance in the Works of Paulo Bruscky and Eduardo Kac'

http://www.personal.psu.edu/sxo11/publications/From%20Mail%20Art%20to%20Telepresence.pdf

- Eduardo Kac-- The Aesthetics of Dialogue. Interview with Eduardo Kac, 1994, published in multiple versions in several publications.

First published online by Revista do Mestrado de Arte e Tecnologia da Imagem, N. 0, Institute de Arte, Departamento de Artes Visuais, Universidade de Brasilia, Brazil.

http://www.ekac.org/intervcomp94.html

C. Padin, *Poesía Electrónica - Dos precursores latinoamericanos: Eduardo Kac y Ladislao Pablo Györi*. Holopoema Albeit, 1989. ESCALA archive, University of Essex

T. Paglen, 'Friends of Space, How Are You All? Have you Eaten Yet? Or, Why Talk to Aliens Even if We Can't', *Afterall* 32, Spring 2013, pp. 9-19

M. Pedrosa, 'The Chromatic Plastic Dynamism of Abraham Palatnik: An Introduction to the First International Biennial of São Paulo (1951)', *Leonardo*, Vol. 29, No. 2 (1996), pp. 117-118

K. Rhomberg (ed.), *Július Koller: Univerzálne Futurologické Operácie*. Kölnischer Kunstverein und Verlag der Buchhandlung Walther König, 2003

D. Roelstraete, 'Can I go now?' http://www.frieze.com/issue/article/can-i-go-now/, First published Frieze Magazine, Issue 153, March 2013

L. Ronduda, A. Farquharson, B. Piwowarska, Star City : The Future Under Communism. MAMMAL Foundation, Nottingham Contemporary, tranzit. At, 2010

> **D. Grúň**, 'Red Planet: Cosmic Imagery of the Slovak Neo-Avant-Garde', pp. 52-68

> **K. Kemp-Welch**, 'S.O.S.: Socialist Occupation of the Subject', pp. 70-78

> **B. Groys**, Boris Groys in Conversation with Łukasz Ronduda, 'Communist Globalization', pp. 174-185

A. de Salvo (ed.), *Open systems: rethinking art c.1970*. London: Tate, 2005 (For documentation of Cildo Meireles's *Insertions into Ideological Circuits: Coca Cola Project (1970)* reproduced fig.53, p.138 in colour

E. A. Shaken, 'The House that Jack Built', Roy Ascott, ed., *Reframing Consciousness: Art and Consciousness in the Post-Biological Era*. Exeter: Intellect, 1999

http://www.artexetra.com/House.html

J. Siegel, *Artwords: discourse on the 60s and 70s.* Ann Arbor, Mich.: UMI Research Press, 1985.

'Hans Haacke: Systems Aesthetics', pp. 211-218

L. Skrebowski

- 'Systems, Contexts, Relations: An Alternative Genealogy of Conceptual Art'

https://eprints.mdx.ac.uk/6229/1/Skrebowski--systems,_contexts,_relations...pdf

- 'All Systems Go: Recovering Jack Burnham's 'Systems Aesthetics'.

Tate Papers, Spring 2006, a revised and expanded version of a talk given by the author at Tate Modern's Open Systems: Rethinking Art c.1970 Graduate Symposium 2005

http://www.tate.org.uk/download/file/fid/7301

- 'All Systems Go: Recovering Hans Haacke's Systems Art', *Grey Room* 30, Winter 2008, pp. 54–83. 2008 *Grey Room*, Inc. and Massachusetts Institute of Technology

http://s3.amazonaws.com/files.posterous.com/asmart/XlmW73YWrMx1PyngJLvlEUb Ze7ycnsQr22gTRja3YDHlWZCZGulbj52miLbD/All_Systems_Go.pdf?AWSAccessKe yId=AKIAJFZAE65UYRT34AOQ&Expires=1370780818&Signature=ozftJ4FFH93CJ %2FaGDnTox9wyCnQ%3D

J. Smith with F. Vinhosa, *History of Brazil, 1500-2000: politics, economy, society, diplomacy.* London: Longman, 2002

L. D. Steefel, *The Position of Duchamp's Glass in the Development of His Art.* New York and London: Garland Publishing, 1977

B. Stiegler

- Technics and Time, I: The Fault of Epimetheus. Stanford, Calif.: Stanford University Press, 1998-2011. Translation from the French by Richard Beardsworth and George Collins

Originally published as *La technique et le temps.* Paris: Galilée, c1994-2001

- J. Wambacq and B. Buseyne, 'The Reality of Real Time'. In J. Gilbert (ed.), *New Formations*, Number 77, 2012, 'Bernard Stiegler: Technics, Politics, Individuation', pp. 63-75

B. Vickers and Lizvix, 'ICA Peer to Platform: Artist Collective vs. Social Network', ICA panel discussion, London, 1 May 2013

O. A. Westad, *The global Cold War: third world interventions and the making of our times*. Cambridge: Cambridge University Press, 2007

N. Wiener

- *Cybernetics: or control and communication in the animal and the machine*. John Wiley & Sons, 1946

- *The human use of human beings: cybernetics and society*. London: Sphere Books, 1968

K. Williams, *The Prague Spring and its aftermath: Czechoslovak politics, 1968-1970*. Cambridge: Cambridge University Press, 1997

S. Žižek
- Robert S. Boynton, 'Enjoy Your Zizek!', *Linguafranca*, October 1998,

http://linguafranca.mirror.theinfo.org/9810/zizek.html (As quoted in P. Bren)

OTHER SOURCES CONSULTED:

J. L. Austin, How to do things with words. Cambridge, MA: Harvard University Press, 1975 (2nd edition)

http://www.ling.upenn.edu/~rnoyer/courses/103/Austin.pdf

S. Beer, *Platform for Change.* London: Wiley, 1975

S. Beer, *Decision and Control: the meaning of operational research and management cybernetics.* London: Wiley, 1966, 1994

D. Bell, *The Coming of Post-Industrial Society: A Venture in Social Forecasting*, 1973

C. Bishop, *Artificial Hells: Participatory Art and The Politics of Censorship.* London: Verso, 2012.

B. Buchloh, 'Conceptual Art 1962-1969: From the Aesthetic of Administration to the Critique of Institutions', *October*, Vol. 55 (Winter, 1990), pp. 105-143

M. Bushkirk, Martha and M. Nixon (eds.), *The Duchamp Effect: Essays, Interviews, Round Table.* Cambridge, MA, USA: MIT Press (an October book), 1996

M. Castells, *The Rise of the Network Society* (Vol. I of The Information Age: Economy, Society and Culture). Second Edition. Oxford, UK & Malden, M.A, USA: Blackwell, 2000

M. Corris, 'Systems Upgrade (Conceptual Art and the Recoding of Information, Knowledge and Technology)', 10 December, 2001,

http://www.metamute.org/editorial/articles/systems-upgrade-conceptual-art-and-recoding-information-knowledge-and-technology

D. Crowley,'The Art of Cybernetic Communism',

http://faktografia.com/2011/09/13/the-art-of-cybernetic-communism/

D. Crowley, and P. Heyer (eds.), *Communication in history: technology, culture, society*, White Plains, N.Y: Longman Publishers USA,1995

D. Crowley and S. E. Reid (eds.), *Pleasure in socialism: leisure and luxury in the Eastern Bloc*, Evanston, Ill.: Northwestern University Press, 2010

M. Crowley, 'Bernard Stiegler Goes Seal-Hunting with Joseph Beuys', *Forum for Modern Language Studies*, January 2013, Vol. 49 Issue 1, p45

A. Curtis, *All Watched Over by Machines of Loving Grace*. BBC TV Series (3 episodes), produced by L. Kelsall and D. Crossley-Holland, 2011.

1: http://vimeo.com/57157436
2: http://vimeo.com/47441493
3: http://vimeo.com/58252835

U. Eco, *Foucault's Pendulum*. London: Secker & Warburg, 1989
English translation by Harcourt Brace Jovanovich

P. Findlen (ed.), Athanasius Kircher: The Last Man Who Knew Everything. New York & London: Routledge, 2004

P. Francastel, Foreword by Yve-Alain Bois, translated by Randall Cherry, *Art & Technology in the Nineteenth and Twentieth Centuries*. New York: Zone Books, 2000

Originally published in France as *Art et technique au XIXe et Xxe siècles*. Paris: Les Editions de Minuit, 1956

J. Gonzalez (ed.), *Juan Downey: A Communications Utopia*. Mexico: Museo Tamayo Arte Contemporáneo, 2013. Exhibition catalogue, Museo Tamayo, March 21 to August 25, 2013

R. Green, *Internet Art*, London: Thames & Hudson world of art, 2004

B. Groys, *The Communist Postscript*. London: Verso, 2009

K. Hafner, Katie and M. Lyon, *Where Wizards Stay Up Late: The Origins of the Internet*. New York: Simon & Schuster, 1996

P. Hanes (ed.), The Cinema of Central Europe. London and New York: Wallflower Press

D. Haraway, 'A Cyborg Manifesto: Science, Technology, and Socialist-feminism in the Late Twentieth-century', in Simians, Cyborgs and Women: The Reinvention of Nature (New York: Routledge, 1991), pp. 149-181

J. Harris (ed.), *Globalization and Contemporary Art*. Malden, M.A, U.S.A & Oxford, UK: Wiley Blackwell, 2011

C. A. Jones (ed.), Hans Haacke 1967. Cambridge, MA: MIT Press, 2011. Exhibition catalogue, Hans Haacke 1967, MIT List Visual Arts Center, October 21-December 31, 2011

E. Kac

- 'Ornitorrinco' and 'Rara Avis': Telepresence Art on the Internet', *Leonardo*, Vol. 29, No. 5, Fourth Annual New York Digital Salon (1996), pp. 389-400

- *Telepresence & bio art: networking humans, rabbits, & robots*, Ann Arbor : University of Michigan Press, 2005

J. Kelley (ed.), *Essays on the Blurring of Art and Life*. Berkeley and Los Angeles: University of California Press, 2003. Allan Kaprow, Expanded Edition, 2003

A. Kostić, Aleksandra and P. T. Dobrila, (eds.), *Eduardo Kac: telepresence, biotelematics, transgenic art*, Maribor, Slovenia: KIBLA, 2000

M. Lane (ed.), *Introduction to Structuralism*. New York: Basic Books Inc Publishers, 1970

E. Laszlo, *Introduction to Systems Philosophy: Toward a New Paradigm of Contemporary Thought*. New York: Gordeon & Breach, 1972

P. Lemmens, 'This system does not produce pleasure anymore', an interview with Bernard Stiegler, Krisis Journal for contemporary philosophy, Issue 1, 2001

L. Lippard, Six Years: The dematerialization of the art object from 1966 to 1972. Berkley, Los Angeles, London: University of California Press, 1997 (First published: New York: Praeger, 1973)

R. Mallory, 'Notes on Jack Burnham's Concepts of a Software Exhibition', *Leonardo,* Volume 3, Number 2 (1970), pages 189-190

M. Mazzone, 'Drawing Conceptual Lessons from 1968', *Third text*. VOL 23; NUMBER 1; 2009, 79-84

V. Misheva, 'The cold war within a sociological systems perspective', Kybernetes, Vol. 35, No. 3 / 4, 2006, pp.286 – 307

J. Mundy, *Duchamp, Man Ray, Picabia*. London : Tate, 2008

L. List, 'Chess as Art', pp. 134-144

J. Němec, *The Party and the Guests*, 1966 (film, original Czech title 'O slavnosti a hostech')

S. Penny, 'Systems Aesthetics and Cyborg Art: The Legacy of Jack Burnham', Sculpture magazine, January/February 1999 (Vol. 18, No. 1)

G. M. Pierce*, '1968 and Beyond: From the Prague Spring to "Normalization"',

http://www.ucis.pitt.edu/crees/Documents/Outreach/From%20the%20Prague%20Spring%20to%20Normalization.pdf

P. Piotrowski, In the Shadow of Yalta: Art and the Avant-Garde in Eastern Europe, 1945-1989. London: Reaktion Books, 2009, English translation by Anna Brzyski (First published Poznań, Poland: REBIS Publishing House Ltd, 2005)

J. Reichardt, Cybernetic Serendipity: the computer and the arts. London: Studio International.

Exhibition catalogue, 'Cybernetic Serendipity', 'dealing broadly with the demonstration of how man can use the computer and new technology to extend his creativity and inventiveness' ICA, London, August 2 – October 20 1968, curated by Jasia Reichardt

H. Renner, A History of Czechoslovakia Since 1945. London & New York: Routledge, 1989.
Translated from the Dutch by Evelien Hurst-Buist. First published as *Geschiedenis Van Tsjechoslowakije Na 1945*

S. Richard, *Unconcealed: The International Network of Conceptual Artists 1967-77, Dealers, Exhibitions and Public Collections.* London: Ridinghouse, 2009

A. Roberts, Adam and T. Garton Ash, *Civil Resistance & Power Politics: The Experience of Non-violent Action from Gandhi to the Present*, Oxford: Oxford University Press, 2009

D. Ronfeldt, 'Tribes, Institutions, Markets, Networks: A Framework About Societal Evolution', 1996, RAND Corporation, http://www.rand.org/pubs/papers/P7967.html

A. Rorimer, *New Art in the 60s and 70s: Redefining Reality*. London: Thames & Hudson, 2001

D. De Salvo, (ed.), *Open Systems: Rethinking Art c.1970* (Tate, 2005), Exhibition catalogue, Tate Modern, London, 1 June - 18 September 2005

E. A. Shanken

- 'Art in the Information Age: Technology and Conceptual Art,' *SIGGRAPH 2001 Electronic Art and Animation Catalog*, 8–15. New York: ACM Press, 2001.

http://www.duke.edu/~giftwrap/InfoAge.html

- 'Tele-Agency: Telematics, Telerobotics, and the Art of Meaning', Art Journal, Vol. 59, No. 2 (Summer, 2000), pp. 64-77

M. Simecka, The Restoration of Order: The Normalization of Czechoslovakia 1969 – 1976. London: Verso, 1984

R. Sinnerbrink, 'Culture Industry Redux: Stiegler and Derrida on Technics and Cultural Politics', *Transformations*, Issue No. 17 2009 — Bernard Stiegler and the Question of Technics.

http://www.transformationsjournal.org/journal/issue_17/article_05.shtml

T. E. Skidmore, *Brazil: Five Centuries of Change*. New York and Oxford: Oxford University Press, 1999

B. Stiegler, *For a New Critique of Political Economy*, trans. Daniel Ross. Cambridge, UK & Malden, USA: Polity Press, 2011.

First published as *Pour une nouvelle critique de l'economie politique*. Paris: Éditions Gallilée, 2009

J. Verwoert, 'World as Medium: On the Work of Stano Filko', e-flux journal #28 October 2011

http://worker01.e-flux.com/pdf/article_253.pdf

P. Weibel and T. Druckery, (eds), net_condition: art and global media, a publication by MIT Press, steirischer herbst, Graz and ZKM Centre for Art and Media Karlsruhe of the exhibitions art and global media and net_condition 1998-99 curated by Peter Weibel. MIT, 2001

P. Windsor and A. Roberts, *Czechoslovakia 1968, Reform, Repression and Resistance*, London: Chatto & Windus for The Institute for Strategic Studies, 1969

**A. Yoder**, *Communist Systems and Challenges*, New York: Taylor & Francis, 1990

LIST OF ILLUSTRATIONS

1. Jack Burnham, *Two Four-Unit Modular Tapes*, (aluminium and electroluminescent tape), 1968

2. Hans Haacke, *MOMA Poll*, 1970

3. 'Non a la Biennale de São Paulo', 1969.

A drawing that circulated as a cover for the dossier which included several documents produced in connection with the support and organization of the Tenth São Paulo Biennial boycott. In this drawing the Latin American territory is firmly held by a hand showing the characteristic features of the United States flag.

4. Hans Haacke, *News*, 1969/70

5. Hans Haacke, *Visitors' Profile 1*, 1972, example from John Weber Gallery, New York

6. Hans Haacke, *Visitors' Profile*, 1970, *Software* catalogue entry

7. Allen Razdow/Paul Conly (Art & Technology Inc., Boston), *Composer*, 1970

8. Ned Woodman/Theodor H. Nelson, *Labyrinth: An Interactive Catalogue*, 1970

9. The Architecture Machine Group, M.I.T., *Seek*, 1969-70

10. Giorno Poetry Systems (John Giorno), *Guerrilla Radio*, 1970

11. Marcel Duchamp, *Large Glass* (*The Bride Stripped Bare by Her Bachelors, Even*), 1915-1923, as reproduced in *Burnham, Great Western Salt Works*, pp. 90

12. Július Koller, *Pleasure Machine 3*, 1964

13. Marcel Duchamp, *Coffee Grinder*, 1911

14. Stano Filko, *Kozmos*, 1968

15. Július Koller, *Up and Down (The Cultural Situation)*, 1996

16. Karel Hubáček*, Ještěd telecommunications tower,* 1968-73

17. Július Koller, *Mass Communication Cultural Situation 1-4 (U.F.O)*, 1987

18. Július Koller, Ping-pong installation *shot* Galerie der Jungen, Bratislava, 1970

19. *Most Slovenského národného povstania* - Bridge of the Slovak National Uprising

20. Július Koller*, Universal Fortification-Identification Object (U.F.O), Project*, 1984

21. Július Koller, (title unknown), from series 'U.F.O Galéria Ganku, 1981-1983'

22. Július Koller, *UFO-Galéria Ganek 2*, 1986

23. Július Koller, *U.F.O-naut J.K. (U.F.O)*, 1974

24. Július Koller, *Games, 1, 2 (Anti-Happening)*, 1967

25. Július Koller, *U.F.O.-naut J. K. (U.F.O)*, 1980

26. Eduardo Kac, *Storms*, 1993

27. Eduardo Kac, *Shema*, 1989

28. Eduardo Kac, *Lilith*, 1987/89

29. Eduardo Kac, Figure 8.b. Media Poetry: an International Anthology.

On the left, the Kabbalistic Sefirotic Tree. On the right, the link structure of the hypertext poem *Storms.*

30. http://www.thefileroom.org/, screenshot of homepage

31. Robert Morris, *Hearing*, 1972

32. Eduardo Kac, *Escracho* (1983), documentation of porno poetry performances

33. Eduardo Kac, *Escracho* (1983), front cover

34. Eduardo Kac, *Escracho* (1983), editorial page

35. Eduardo Kac, *Escracho* (1983), page showing an early example of Otavio Donasci's videocreatures

36. Eduardo Kac, *RC Robot*, 1986

37. Eduardo Kac, *Holo/Olho,* 1983

38. Eduardo Kac, *Quando?,* 1987/88

39. Eduardo Kac and Edward Bennett *Ornitorrinco*, 1989-1996

40. Eduardo Kac, *GFP Bunny*, 2000

41. Eduardo Kac, *Alba Guestbook*, 2000

42. Eduardo Kac, *Free Alba* (documentation of the poster campaign), 2000-

43. Eduardo Kac, *Rara Avis*, 1996

44. Eduardo Kac*, Essay Concerning Human Understanding*, 1994

ILLUSTRATIONS
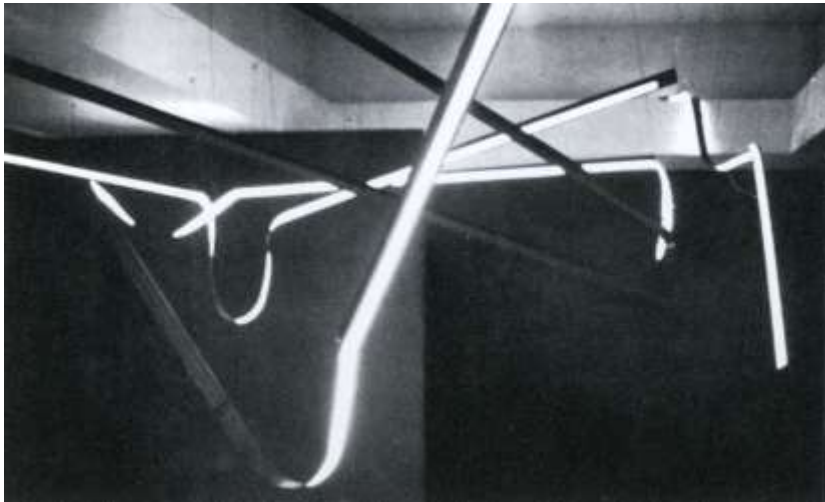
Fig.1. Jack Burnham, *Two Four-Unit Modular Tapes*, (aluminium and electroluminescent tape), 1968

Fig.2. Hans Haacke, *MOMA Poll*, 1970

Fig.3. Non a la Biennale de São Paulo', 1969

Fig.4. Hans Haacke, *News*. 1969/70

These questions and your answers are part of

420 WEST BROADWAY VISITORS' PROFILE

a work in progress by Hans Haacke at the John Weber Gallery, October 7 through 24, 1972

Please fill out this questionnaire and drop it into the box provided for this. Dont sign!

1) Do you have a professional interest in art (e.g. artist, dealer, critic, etc.)?   Yes ___ No ___

2) Where do you live?   City _____ County _____ State _____

3) It has been suggested that artists and museum staff members be represented on the Board of Trustees oft art
   museums. Do you think this is a good idea?   Yes ___ No ___ Dont know ___

4) How old are you?   ___ years

5) If elections were held today, for which presidential candidate would you vote?
                                                        Mc Govern ___ Nixon ___ None ___ Dont know ___

6) In your opinion, are the interests of profit-oriented business usually compatible with the common good?
                                                                        Yes ___ No ___ Dont know ___

7) What is your annual income(before taxes)? $ _____

8) Do you think present US taxation favors large incomes or low incomes, or is distributing the burden correct-
   ly?   Favors large incomes ___ Favors low incomes ___ correct ___

9) What is your occupation?   _____

10) Would you bus your child to integrate schools?   Yes ___ No ___ Dont know ___

11) Do you have children?   Yes ___ No ___

12) What is the country of origin of your ancestors (e.g. Africa, England, Italy, Poland etc.)?   _____

13) Esthetic questions aside, which of these New York museums would in your opinion exhibit works critical of
    the present US Government?

    Brooklyn Museum ___   Finch College Museum ___   Guggenheim Museum ___   Jewish Museum ___   Metropolitan Mu-
    seum ___   Museum of Modern Art ___   New York Cultural Center ___   Whitney Museum ___   All museums ___
    None of these museums ___   Dont know ___

14) Are you enrolled in or have you graduated from college?   Yes ___ No ___

15) Assuming the prescriptions of the M.I.T. (club of Rome) study for the survival of mankind are correct, do
    you think the capitalist system of the US is better suited for achieving the state of almost zero economic
    growth required than other socio-economic systems?
                                                        Yes ___ No ___ Dont know ___

16) Do you think civil liberties in the US are being eroded, have been increasingly respected, or have not
    gained or lost during the past few years?
                                            Eroded ___ Increasingly respected ___ Not gained or lost ___

17) What is your religion?   Catholic ___ Protestant ___ Jewish ___ Other ___ None ___

18) Sex?   Male ___ Female ___

19) Do you think the bombing of North Vietnam favors, hurts, or has no effect on the chances for peace in Indo-
    china?   Favors ___ Hurts ___ No effect ___ Dont know ___

20) Do you consider yourself politically a conservative, liberal or radical?
                                            Conservative ___ Liberal ___ Radical ___ Dont know ___

Thank you for your cooperation. Your answers will be tabulated with the answers of all other visitors. The re-
sults will be posted during the exhibition.

Fig.5. Hans Haacke, *Visitors' Profile 1*, 1972, John Weber Gallery, New York

Hans Haacke
Visitors' Profile 1969
with assistance from Scott Bradner (Art & Technology, Inc., Boston)
Digital Equipment Corporation (time share PDP-8 computer)

A teletype terminal with a picture scope is connected with a digital computer on a time-sharing basis and serves both as input and output device.

Using the keyboard the visitors can answer questions which are posed to them on the scope. Due to branches in the polling program a number of these questions are personalized and vary from visitor to visitor.

Essentially the questions are of two types. One set asks the visitors for *factual* information about themselves, e.g., age, sex, educational background, income bracket, etc. The other set of questions inquires about their *opinions* on a variety of subjects.

The computer compiles the answers, compares them with information received from other visitors and correlates data relevant for a statistical breakdown.

A terminal prints out the processed information in the form of statistics giving percentages and cross-tabulation between answers, opinions and the visitors' demographic background. The processing speed of the computer make it possible that at any given time the statistical evaluation of all answers is up to date and available. The constantly changing data is projected onto a large screen, so that it is accessible to a great number of people.

Based on their own information a statistical profile of the exhibition's visitors emerges.

Hans Haacke
News 1969

Local, national and international news is being received from U.S. as well as from foreign news services. It arrives in the exhibition via teletype print-out at the same time as it is being received by the other clients of the various news services. The print-out accumulates and piles up behind the teletype machines.

Fig.6. Hans Haacke, *Visitors Profile*, 1970 (*Software* catalogue entry)
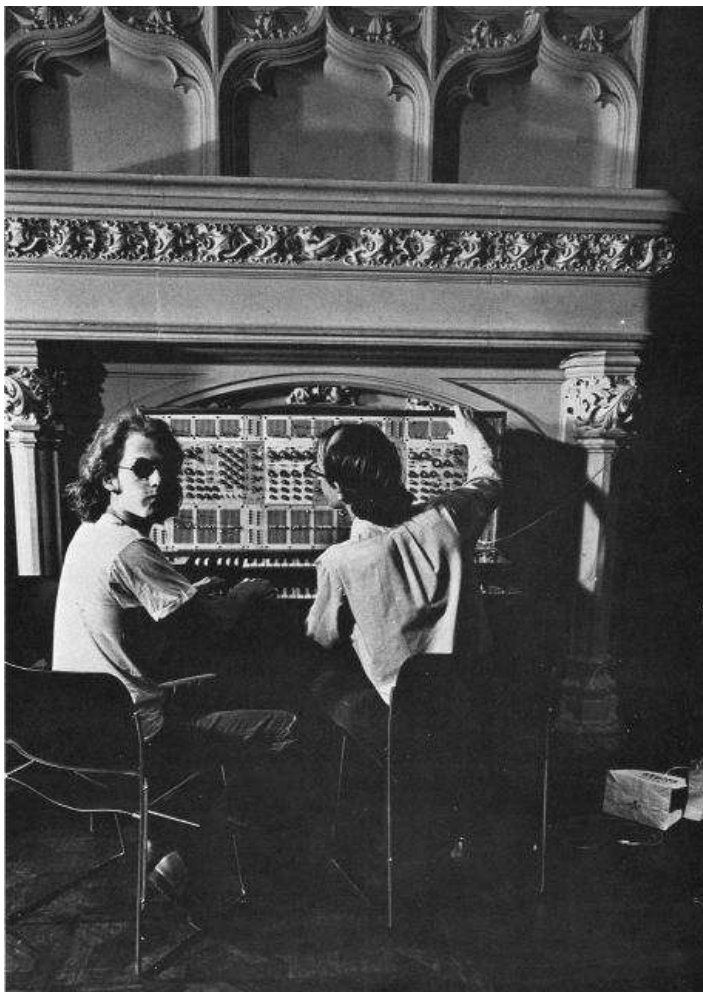
Fig.7. Allen Razdow/Paul Conly (Art & Technology Inc., Boston), *Composer*, 1970

Fig.8. Ned Woodman/Theodor H. Nelson, *Labyrinth: An Interactive Catalogue*, 1970, with assistance from Scott Bradner (Art & Technology, Inc., Boston), Digital Equipment Corporation (time share PDP-8 computer)

Software catalogue caption, pp. 18, 'Scott Bradner (left) and Ned Woodman of ATI programme their PDP-8
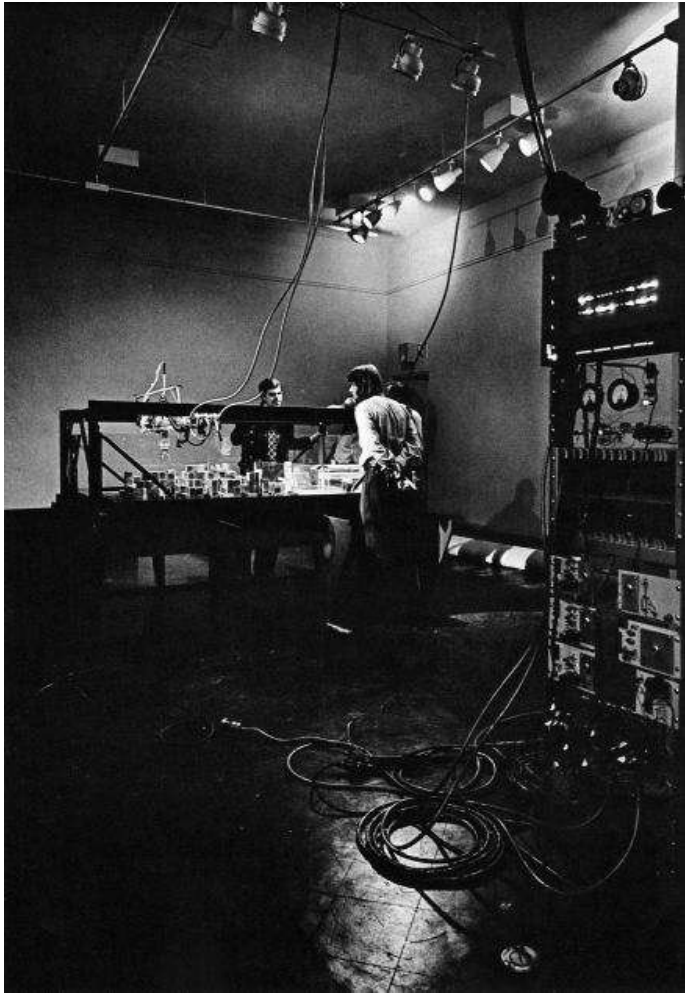
Fig.9. The Architecture Machine Group, M.I.T., *Seek*, 1969-70, installation shot and detail depicting gerbils
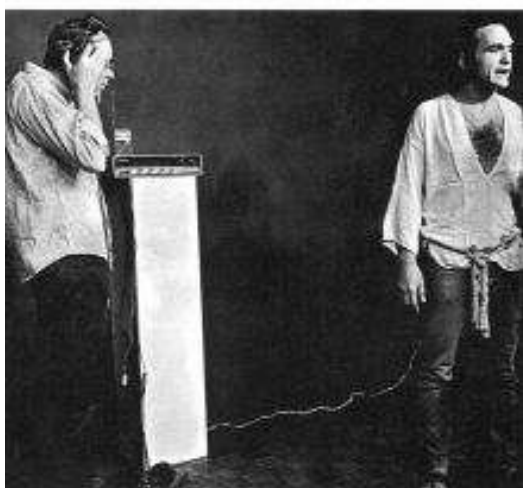
Fig.10. Giorno Poetry Systems (John Giorno), *Guerrilla Radio*, 1970
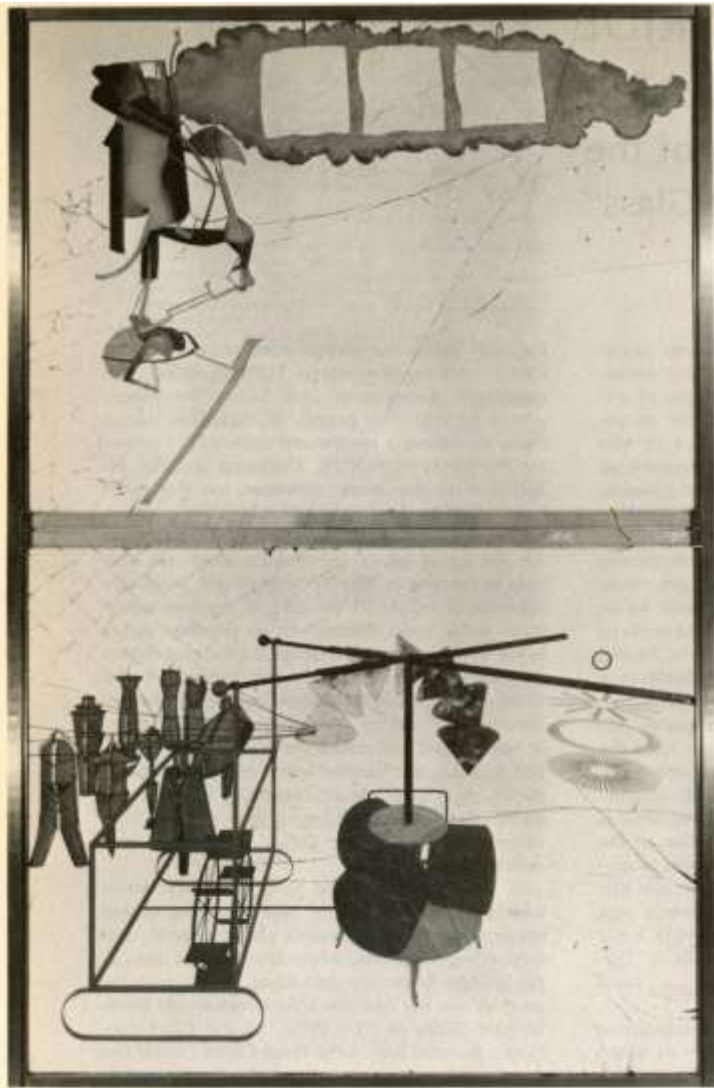
Fig.11. Marcel Duchamp, *Large Glass* (*The Bride Stripped Bare by Her Bachelors, Even*), 1915-1923, as reproduced in *Burnham, Great Western Salt Works*, pp. 90

Fig.12. Július Koller, *Pleasure Machine 3*, 1964

Fig.13. Marcel Duchamp, *Coffee Grinder*, 1911

Fig.14. Stano Filko, *Kozmos*, 1968
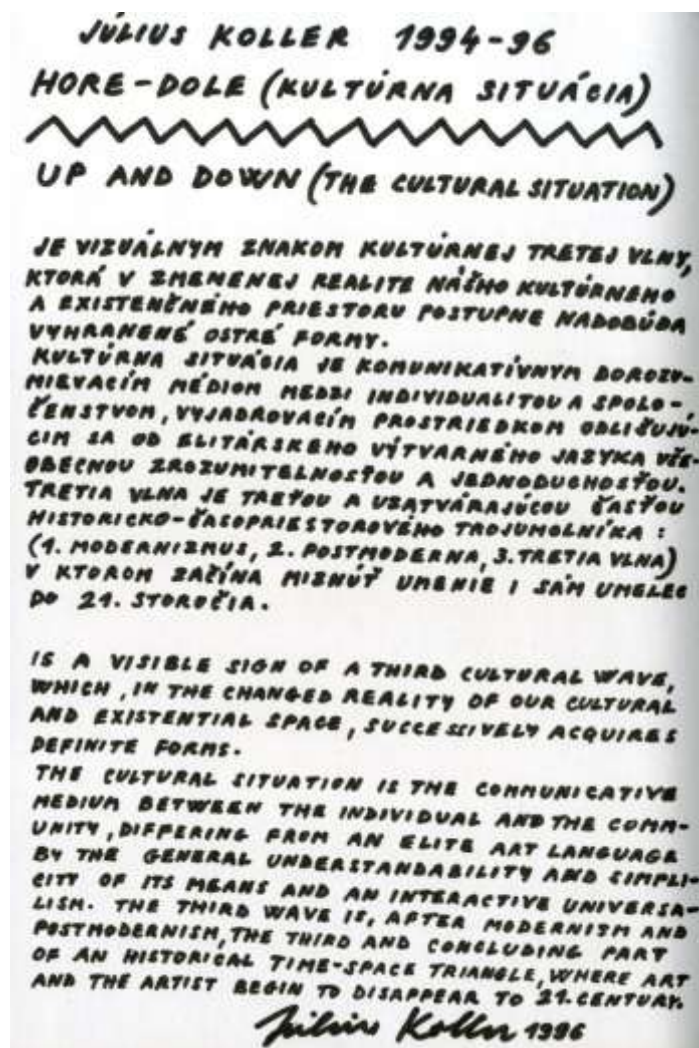
Fig.15. Július Koller, *Up and Down (The Cultural Situation)*, 1996

Fig.16. Karel Hubáček, *Ještěd telecommunications tower,* 1968-73

Fig.17. Július Koller, *Mass Communication Cultural Situation 1-4 (U.F.O)*, 1987
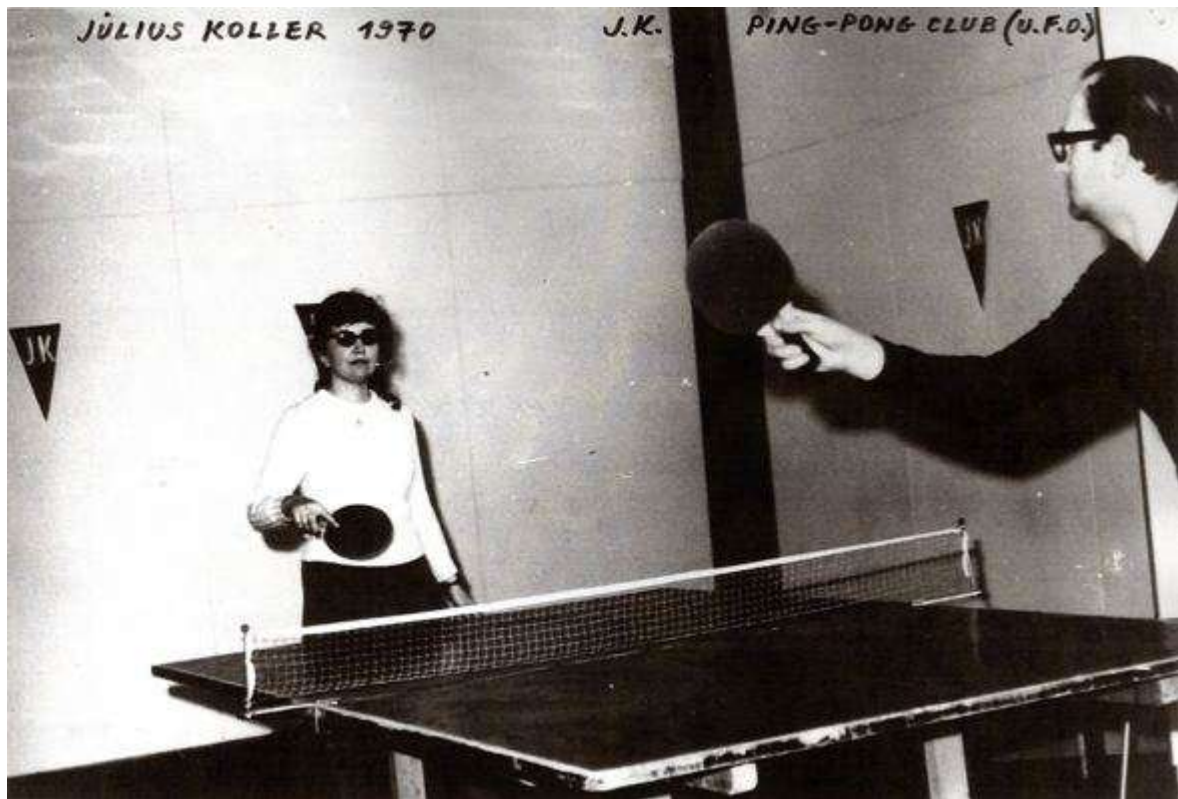
Fig.18. Július Koller, Ping-pong installation *shot* Galerie der Jungen, Bratislava, 1970

Fig.19. *Most Slovenského národného povstania* - Bridge of the Slovak National Uprising

Fig.20. Július Koller*, Universal Fortification-Identification Object (U.F.O), Project*, 1984
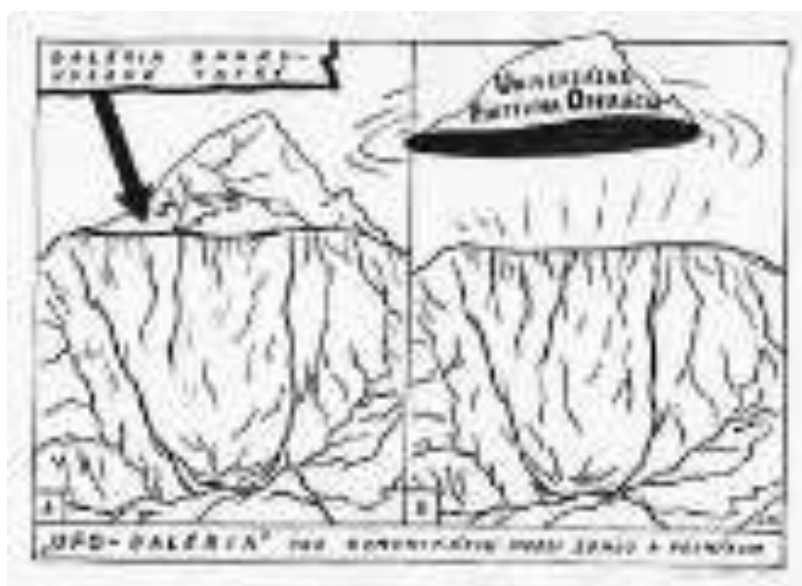
Fig.21. Július Koller, (title unknown), from series 'U.F.O Galéria Ganku, 1981-1983'
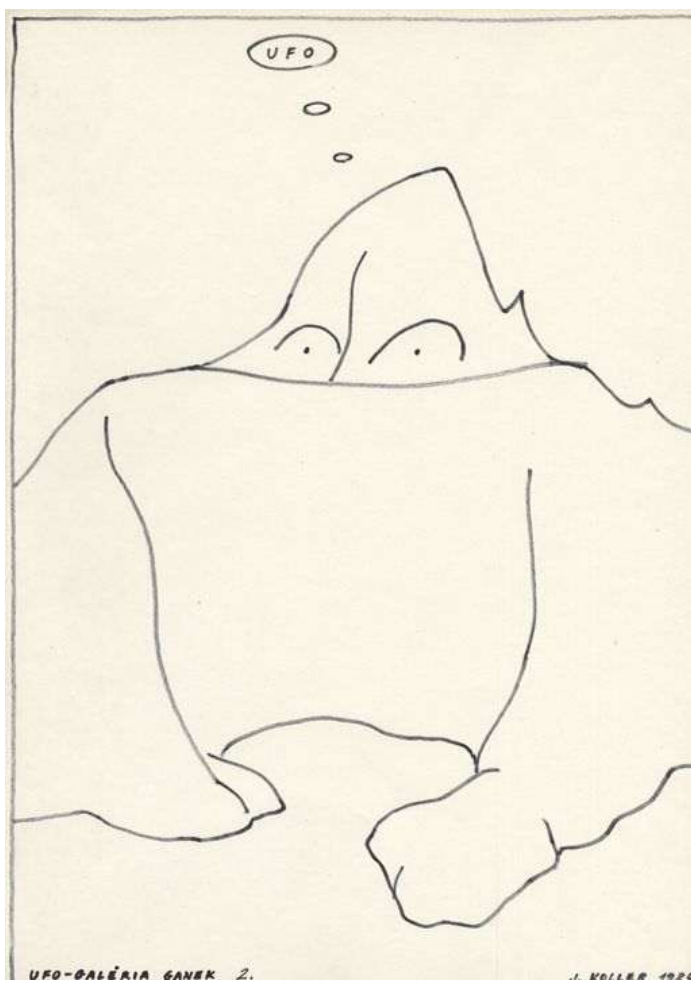
Fig.22. Július Koller, *UFO-Galéria Ganek 2*, 1986

Fig.23. Július Koller, *U.F.O-naut J.K. (U.F.O)*, 1974
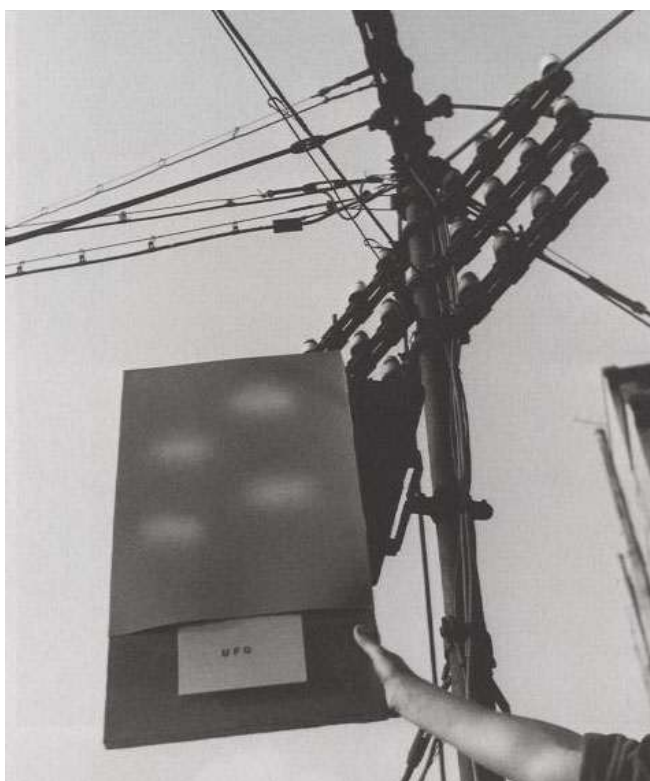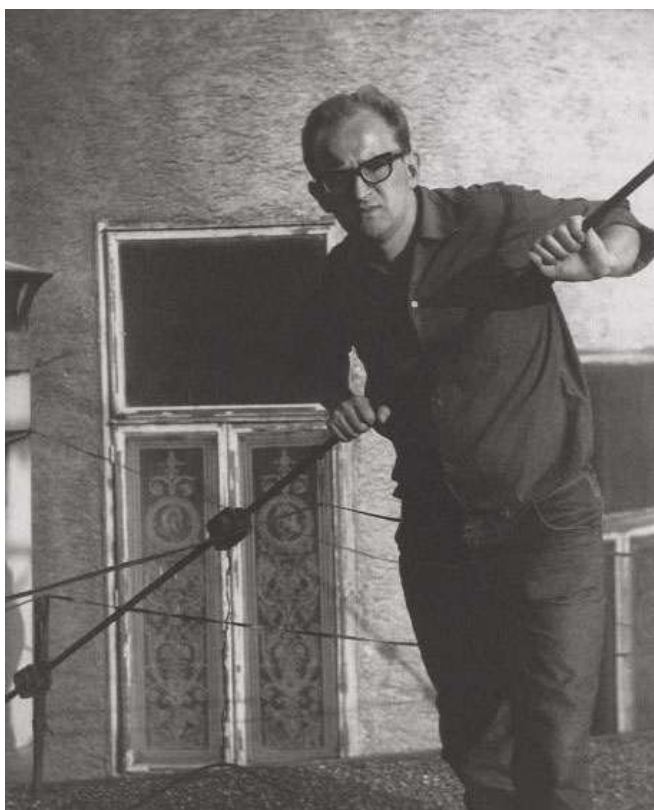
Fig.24. Július Koller, *Games, 1, 2 (Anti-Happening)*, 1967
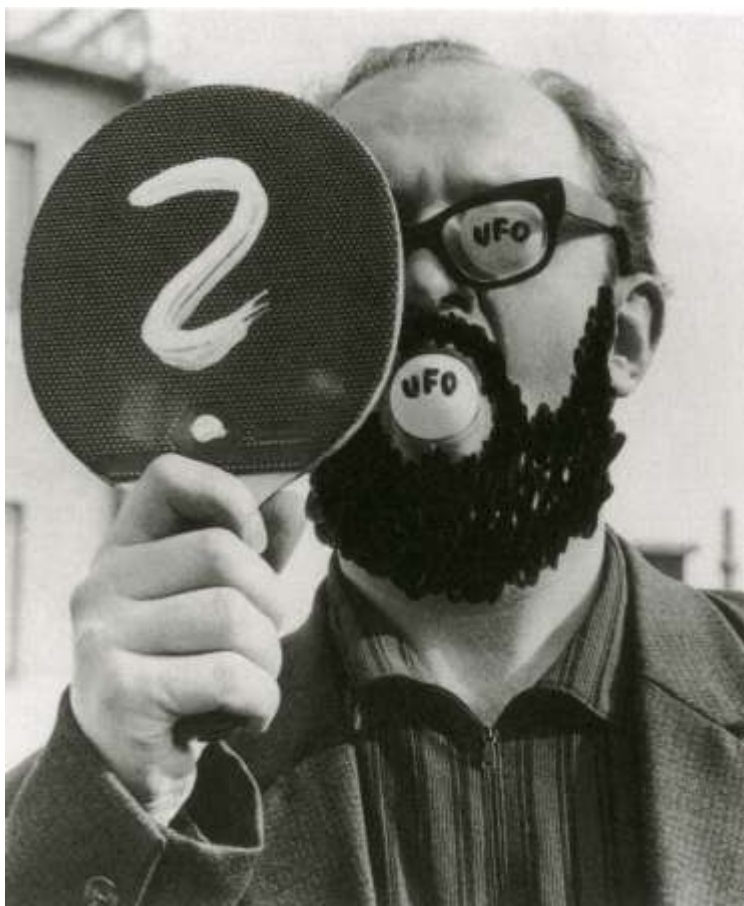
Fig.25. Július Koller, *U.F.O.-naut J. K. (U.F.O)*, 1980

Fig.26. Eduardo Kac, *Storms*, 1993

Fig.27. Eduardo Kac, *Shema*, 1989
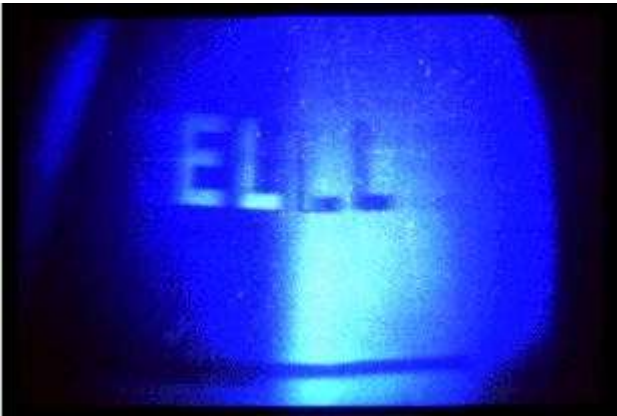
Fig.28. Eduardo Kac, *Lilith*, 1987/89
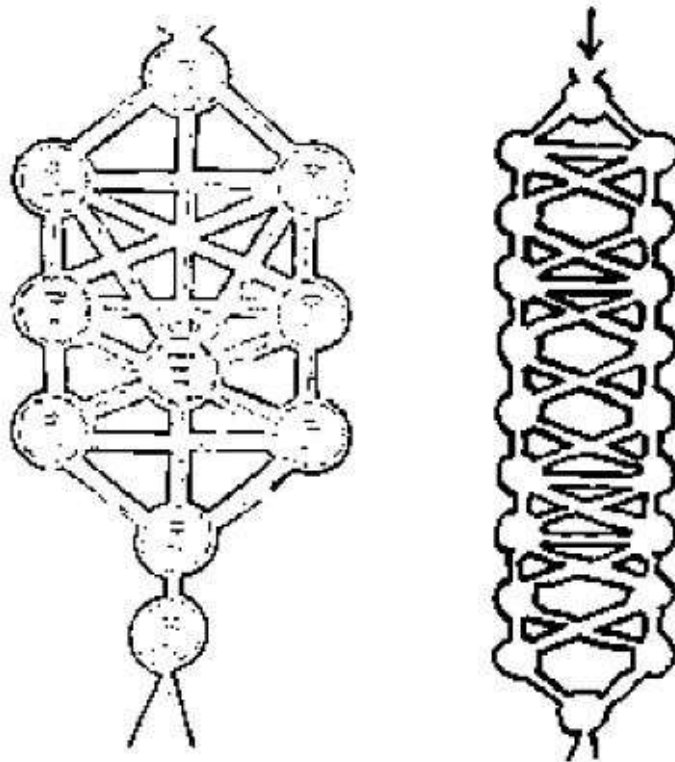
Fig.29. Eduardo Kac, Figure 8.b. Media Poetry: an International Anthology.

On the left, the Kabbalistic Sefirotic Tree. On the right, the link structure of the hypertext poem *Storms.*

Fig.30. http://www.thefileroom.org/ , screenshot of homepage

Fig.31. Robert Morris, *Hearing*, 1972

Fig.32. Eduardo Kac, *Escracho* (1983), documentation of porno poetry performances

Fig.33. Eduardo Kac, *Escracho* (1983), front cover
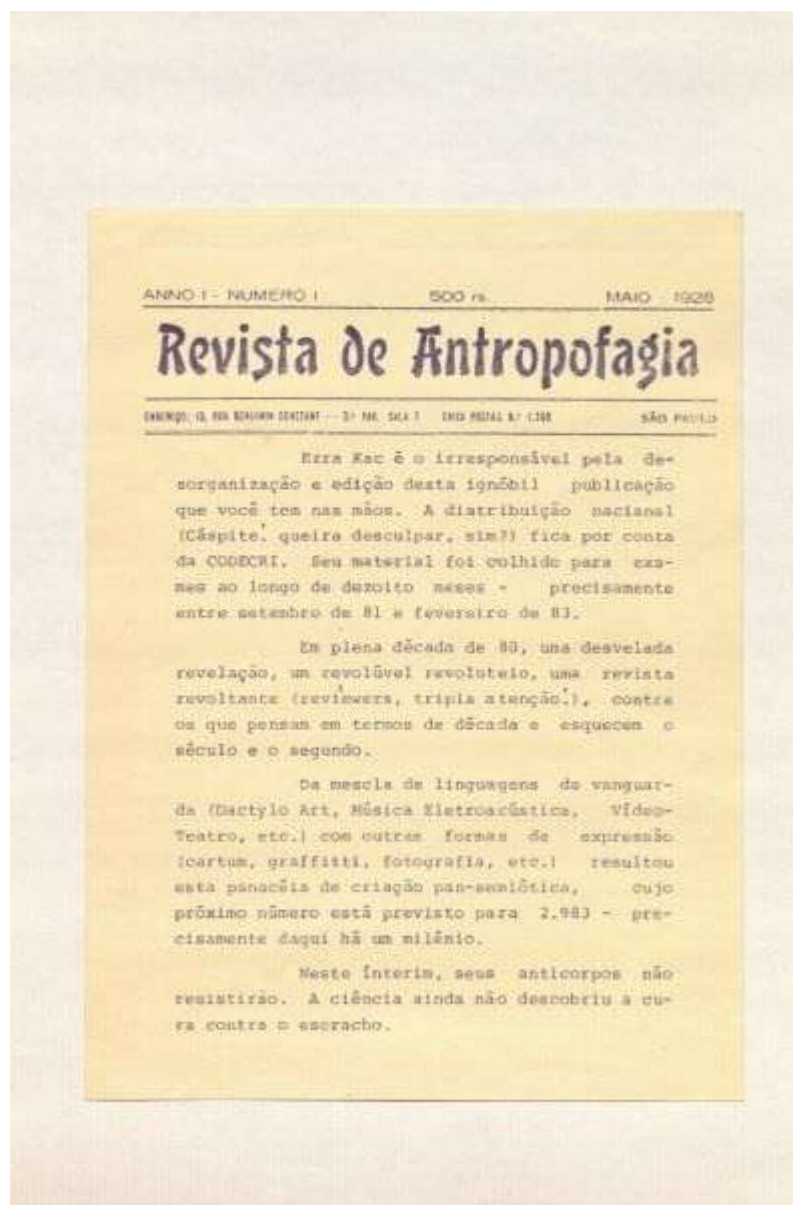
Fig.34. Eduardo Kac, *Escracho* (1983), editorial page

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Fig.36. Eduardo Kac, *RC Robot*, 1986
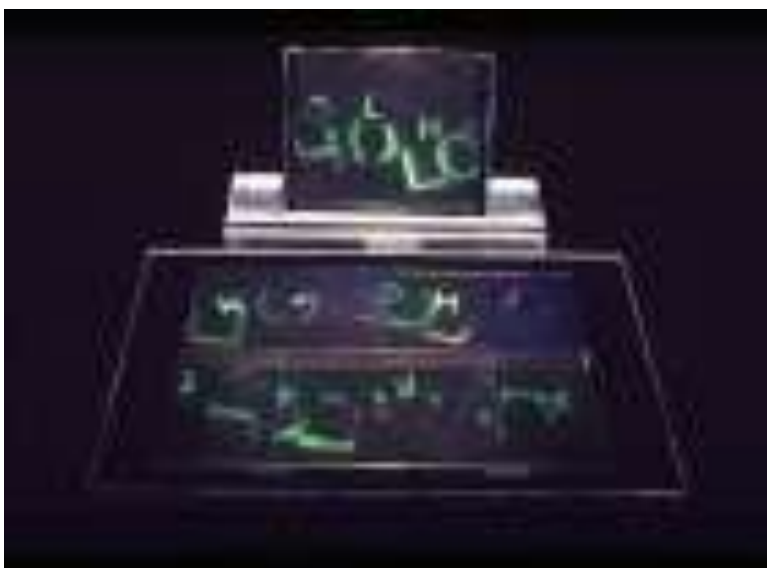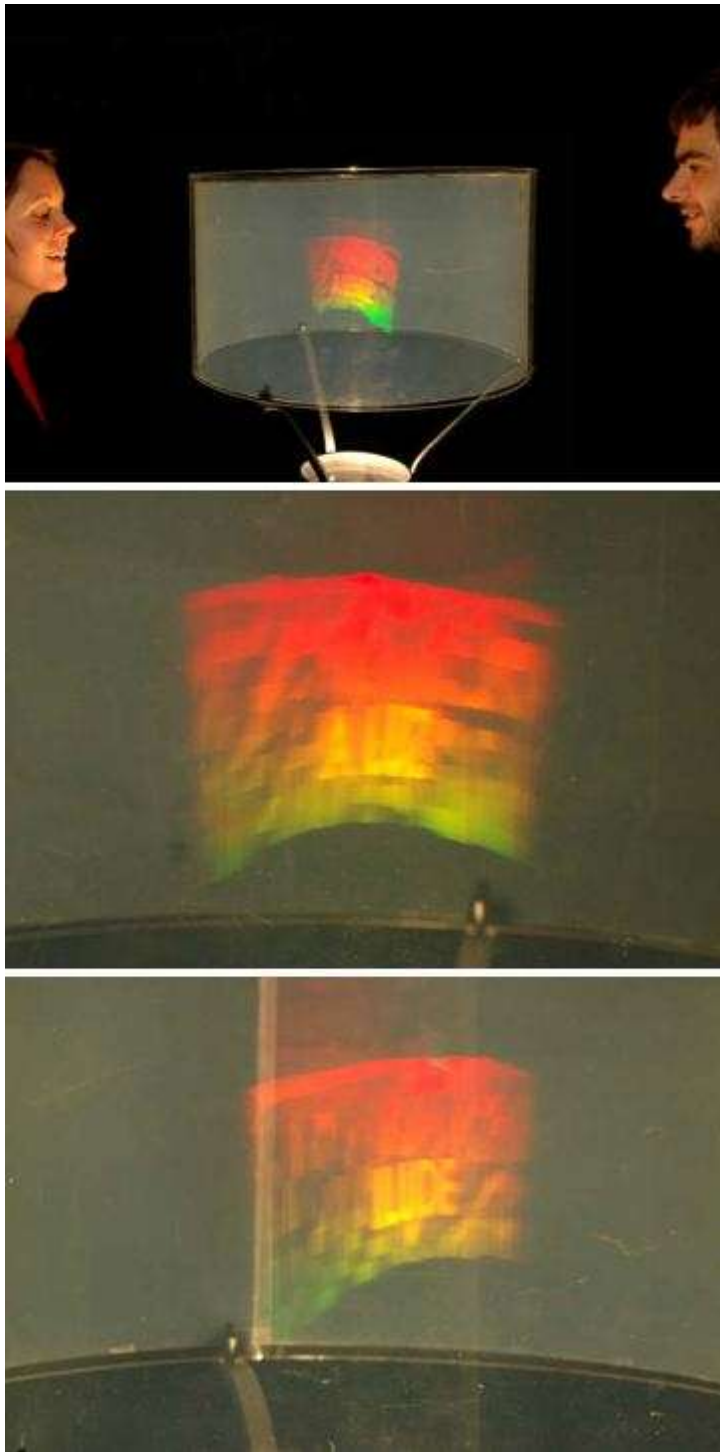

Fig.37. Eduardo Kac, *Holo/Olho,* 1983
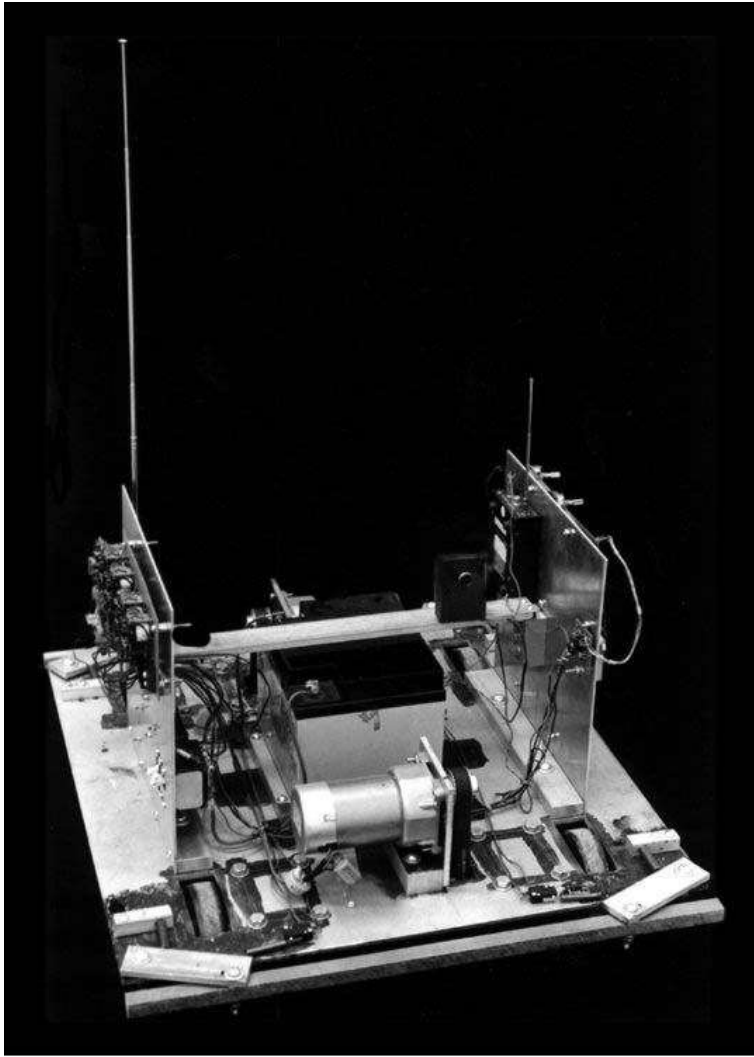
Fig.38. Eduardo Kac, *Quando?,* 1987/88

Fig.39. Eduardo Kac and Edward Bennett *Ornitorrinco*, 1989-1996
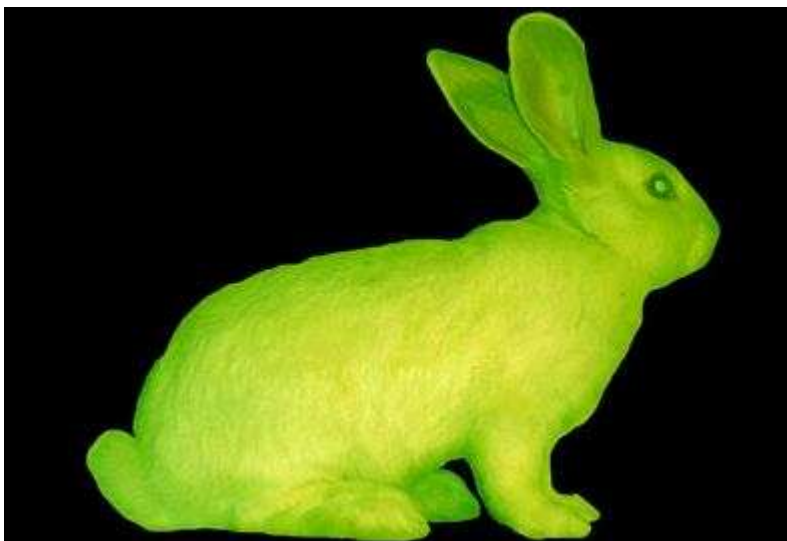

Fig.40. Eduardo Kac, *GFP Bunny*, 2000

Alba Guestbook (2000)

PLEASE SEND YOUR FREE ALBA KINETIC TO ADDRES -JLN MARS NO 412 KOMP ANGKASA HALIM PERDANAKUSUMA-JAKTIM-
INDONESIA TANK YOU VERY MACHT
Ir AGUNG SUWITO <AEROCOM75@HOTMAIL.COM>
JAKARTA, INDONESIA - Sunday, December 31, 2000 at 23:47:39 (PST)

While I'm not sure where I stand on E.Kac's use of living creatures as art, I think that Alba should be with him and his family here in the states. There is no reason why
this PET rabbit should be separated from the man who loves her so much. I understand why E.Kac has done what he has to Alba, and perhaps while investigating the
properties of art and life and godliness he has played God a bit, but he has not created a monster or a threat to our ecosystem. Alba is simply an albino rabbit who
glows under specific light. He has not caused her harm, he has not threatened the rabbit species. They should be together. Alba will not be given the comfortable, loving,
nurturing home she deserves and was planned for her if she is not allowed to join E.Kac here in the states. Let the glowing rabbit go to her family. Let them love her and
take care of her and treat her as a beloved pet, for that is the real intent of all of this genetic tweaking, to creat a very well known pet. Let Alba go.
Kirsten Williams <kirsten-v-w@animail.net>
Upper Black Eddy, PA USA - Friday, December 29, 2000 at 07:26:33(PST)

The bunny needs to go home to its family. My bunny agrees, even though he does not glow. =)
Mark Siegenfeld <GlowingBunny@techfiend.com>
davis, ca USA - Wednesday, December 27, 2000 at 13:33:35 (PST)

True Scientists deal with the stereotype of the Mad Scientist.Mr. Kac does nothing but reinforce this stereotype, making people fear science and genetic research.
Experiments like this have limited what real scientist can do in the US.
Biologist
USA - Wednesday, December 27, 2000 at 10:42:51 (PST)

Free Alba !!! It belongs to Mr Kac and his family !
guido sechi <gnidsech@tin.it>
roma, italia - Tuesday, December 26, 2000 at 14:58:36 (PST)

Why the heck shouldn't Alba be with Kac? Can anybody come up with one good reason supporting the separation? No, Alba belongs to him, he's responsible for her.
She should definitely be given back.
Halcyon <halcyon@n2.com>
Albuquerque, NM USA - Monday, December 25, 2000 at 00:09:20 (PST)

The crime is not that Kac has made a bunny that glows in the dark (being a former "glow vendor" of glowing necklaces at a theme park, I can only imagine the profit
potential such an animal would have). Kac's ideas are more humane than my own aforementioned. The crime here is that a rabbit is being withheld from it's loving
owner. Be it glow-in-the-dark or not, many of us know the attachments we feel for our pets. To have ALBA withheld from Mr. Kac is the cruelty.

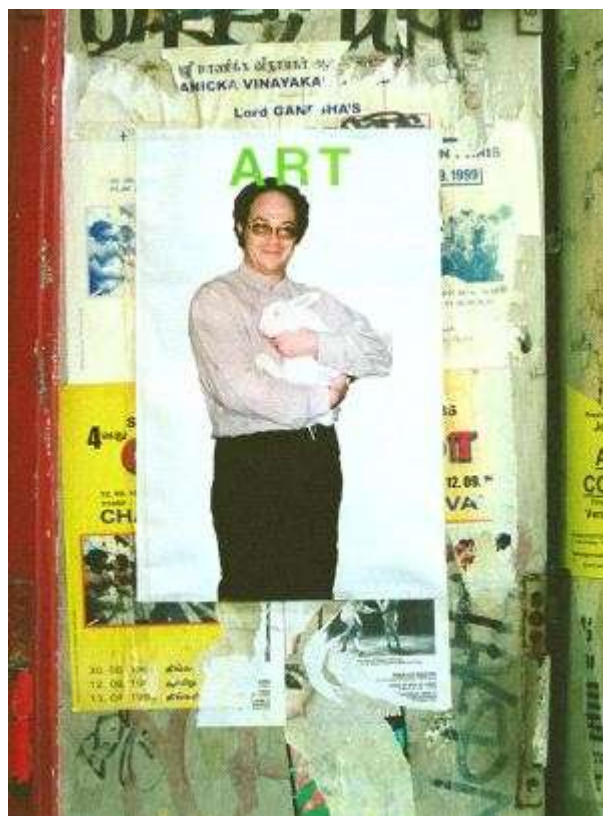Fig.41. Eduardo Kac, *Alba Guestbook*, 2000

Fig.42. Eduardo Kac, *Free Alba* (documentation of the poster campaign), 2000-

95

View from outside the cage.   The perspective of the macaw.

Fig.43. Eduardo Kac, *Rara Avis*, 1996

'An interactive telepresence work in which local and remote participants experienced a large aviary with 30 birds from the point of view of a telerobotic macaw'

http://www.ekac.org/raraavis.html

The canary in Lexington, KY.　　The Plant in New York.

Fig.44. Eduardo Kac, *Essay Concerning Human Understanding*, 1994

'"Essay Concerning Human Understanding" was a live, bi-directional, interactive, telematic, interspecies sonic installation I created with Ikuo Nakamura between Lexington (Kentucky), and New York.

(…)

When this work was shown publicly, the bird and the plant interacted for several hours daily. Humans interacted with the bird and the plant as well. Just by standing next to the plant and the bird, humans immediately altered their behavior. When in close proximity, the interaction was further enhanced by the constantly changing behavior of the bird and the plant, which responded by singing more (bird), activating more sounds (plant), or by remaining quiet.'

http://www.ekac.org/essay.html