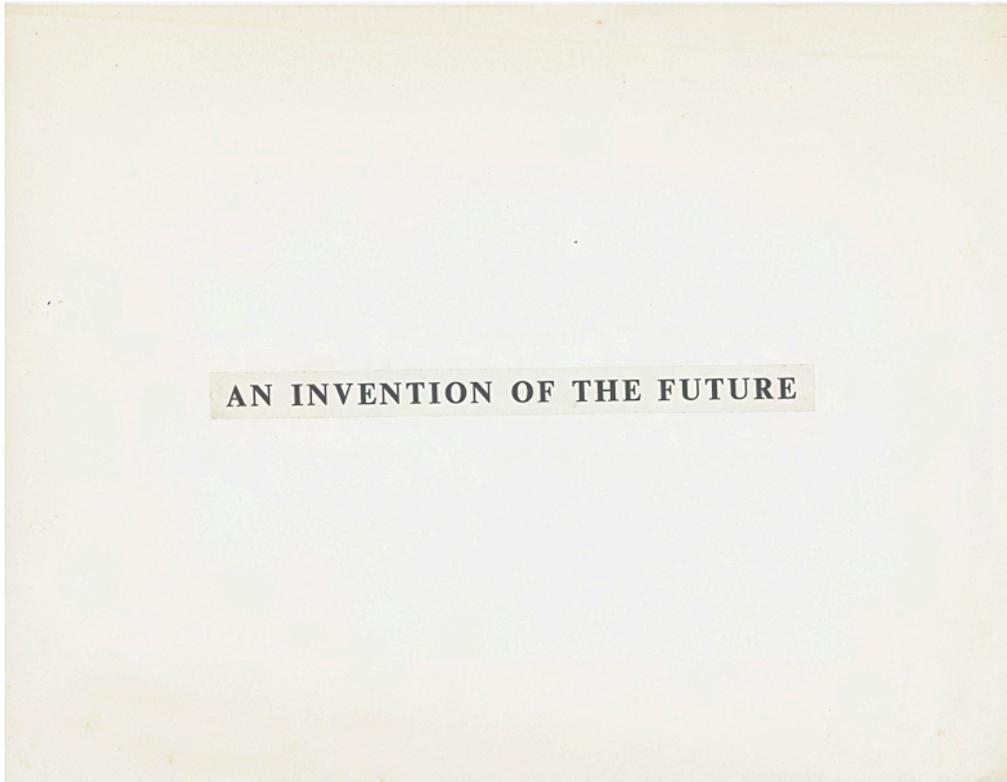


Past Shock

a reconsideration of a paper

"Computer art is the kitsch to come." – Abraham A. Moles



untitled, 1981, text tape on paper, 8.5 x 11 inches

preface

In 1984, I became the first person to graduate from the art department of the University of Houston while having their Masters Thesis rejected. Other than the five people who served on my thesis committee, no one has read this paper. Until now.

I have deliberated for years about what to do with it, and whether or not to publish it in some form or another, or to just let it disappear. The main reason for sharing it now publicly is simply to have it out there, so to speak, to share the ideas contained within it whether they be useful or not. Nevertheless, I have my hesitations. There are risks.

First, it's just a college thesis paper. Of what use could such a dated document be? Secondly, there *really are* problems with it. I know what they are and they're cringe worthy for me to read now. Thirdly, it was already rejected once. Why go through that again? Why risk the wrathful ridicule of today's internet mob? Finally, the episode of its rejection was so long ago that it could be perceived as obsessive dwelling in the past by a frustrated crank. It's not, but that's a thought I hate.

What has pushed me past these concerns and to decide to publish it now is what I perceive to be the overwhelming validity of its basic premise. I still find the ideas interesting. It seems that every week I come across an article or essay that echoes or speculates upon the same concepts that I was working with then. There are a few friends who undoubtedly tire of hearing me say, "Hey, I wrote about that years ago." Well, at least now they will have a chance to judge for themselves if that's just more hot air from me. I want to test it again.

So it is with confident trepidation that I share this paper now. But first, some background and context...

Unacceptable

I graduated from Memphis State University (now the [University of Memphis](#)) in December of 1980 with a BFA in painting, although by the time I graduated I had virtually stopped painting. I met [James Surls](#) in 1980 at Memphis State when he came there for a few days as a visiting artist at the invitation of [Bill Dunlap](#) who was teaching there. As part of his visit, James met with various students in their studios to observe their work and to discuss it with them. James visited me in my studio. In the course of our discussion, he inquired if I intended to go to graduate school. I told him that I was undecided. He said that should I decide to go to graduate school, he would arrange to give me a scholarship to the University of Houston. As generous an offer as it was, a scholarship to UH's art department in those days simply meant waving the \$600 per semester out-of-state tuition, which to me was a lot. After months of contemplation, I decided to go. I moved to Houston in August 1981 and enrolled in the art department at the University of Houston as a candidate for a Master of Fine Arts degree.

Within a year of my arrival at UH my work had transformed completely. It began to both dissolve and expand into the wide open spaces of [video, electronic music](#), and [computer generated experiments](#). This interest in technology coincided with the revolutions that were occurring in the world. The tools became less remote and more accessible. Suddenly there were such things as home computers, affordable video cameras, and sophisticated audio generation and recording. I immersed myself and began formulating my thoughts into what would become my masters thesis.

In the early 1980's at UH, a graduate thesis for an MFA degree had two components: the presentation of art work in an exhibition (a so-called "thesis show" which took place in the [Blaffer Gallery](#)), and a written document – a "[thesis](#)." For this written portion, each graduate student was assigned a thesis committee consisting of a minimum of three persons from the art faculty of which one served as the committee chair. The student could request their committee members but the final say was up to the faculty making it essentially an assigned group. At least two of my originally assigned committee members were antagonistic toward my work with one even going so far as to say that they believed that what I was doing was not art. So as a pre-emptive strategic strike, in a Rooseveltian court packing imitation, I invited two more UH faculty (one not from the art department) to serve on my committee. I surmised that these sympathetic personalities would at least sway the final vote. This was not to be.

The written thesis element for a degree from the art department at UH had a peculiar format that was unique in the university. The graduate candidate's thesis paper took its shape and premise from "questions" formulated from the thesis committee with one question generated from each committee member. I have no idea why or when the art department started doing this thesis format. Nor do I recall if there was a requirement for the length of the paper or for the length of the responses to these questions. Regardless, this format was not remotely similar to [a traditional thesis](#) in which the degree candidate formulates an idea and then defends it.

I didn't like it. I had my own ideas and I wasn't interested in answering questions from others like it was some sort of test. It was a reactive process and I was proactive. I had read others' thesis questions and sympathized

with their frustrations with the questions that were given to them that often seemed utterly unrelated to their work. Everyone complained about their "questions." Frankly, I thought it was a controlling and condescending format. What's worse, the university did not officially recognize this thesis format. With all other departments, upon [acceptance of a graduate thesis paper](#), they were then copied and entered into the university library as part of their [archives](#) for the benefit of future students, researchers and scholars. So because the university did not recognize the question/answer format of the art department thesis paper, they did not accept these papers into their archives. And when I discovered this, I especially didn't like it.

Upon further investigation, I discovered that the art department's thesis format was not an absolute requirement. If one wanted, one could opt out of this format and write a traditional thesis. In a way that I considered deceptive, this choice was not made known nor presented as an option. When I learned this, I could not understand why my fellow artists succumbed to the question/answer format if they didn't absolutely have to. Consequently, I requested to do a traditional thesis, or more accurately stated, I informed my committee that I was going to write a traditional thesis. Although I was strongly advised not to, technically speaking, they could not stop me. So I did. Thus began my stubborn stance and acrimonious relationship with my graduate thesis committee.

I began writing my thesis in 1982 and presented an [outline to the committee](#) in 1983. Over the course of the two years I spent writing my thesis I submitted regular written updates, yet I never received any comments or feedback. The final thesis review took place on a Friday morning in what was then the video studio on the third floor of the main art building. The Masters Thesis exhibition was to open that evening at Blaffer. The graduation ceremony was scheduled the next morning in the gymnasium along with all the other graduates from the university. My family was in town.

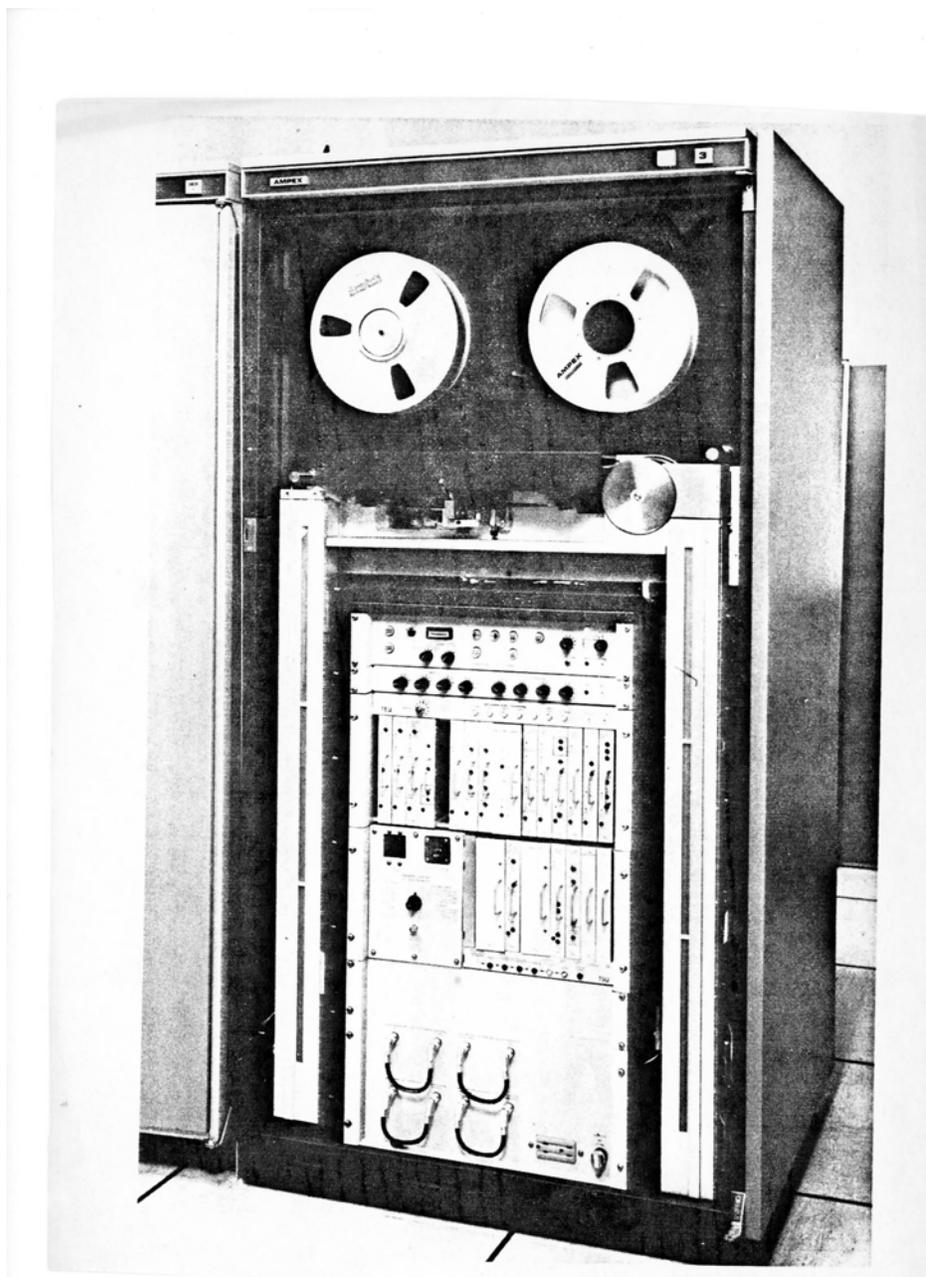
Like a jury trial (or a firing squad), my thesis committee organized themselves in a row facing me. Highly trained to visually recognize and interpret arrangements of phenomena, I astutely surmised that this did not bode well for me. And it didn't. My committee was harshly critical of my paper and unanimously rejected it. One by one, each member took turns with their scathing assessments of virtually every aspect of it. There were no positive comments. It was so bad that one committee member stated flatly that they could not even get past the second sentence. I was given the opportunity to respond. I recovered enough from my stunned silence to ask if this meant that I would not graduate. I was assured that even though my thesis would not be accepted, I would still graduate and be awarded my MFA degree. With that, I abruptly got up and left. Later I was offered the opportunity to rewrite my thesis. I refused.

Thus my thesis paper has lain dormant and unread since. Although I long ago shed my bitter disappointment with my thesis committee's decision, I've never lost my interest with the topic or of my itch to do something with this paper. I still think it has some worth. That's why I offer it now.

THE FUTURE OF AESTHETICISM AS A FOUR PART INFORMATION BASED ONTOLOGY

Michael Galbreth

University of Houston
Master of Fine Arts Thesis
1984



INTRODUCTION

*Aesthetics - the study or theory of beauty and of the psychological responses to it, specifically, the branch of philosophy dealing with art, its creative sources, its forms, and its effects

*Ontology - the branch of metaphysics dealing with the nature of being, reality, or the ultimate substance

*Webster's New World Dictionary

A core characteristic of human beings is that the species is in a constant state of change. In addition, it is usually agreed upon that art is a human endeavor, and if so, its role and relationship to humanity is in continuous flux also. In this light, it must be assumed that art certainly had a beginning, though not necessarily at a specific point in human history, rather it evolved as humans did (and do). If this is the case, then it must be considered that art, as a vehicle for thinking and experiencing, can, and as projected in this thesis, will have an end.

My premise is that the present system of aesthetics is deteriorating and is being replaced by a new form of thinking and experiencing. The model I offer is a four part, information based ontology. The components of this new system are: information, interpretation, communication, and realization.

As humankind becomes more attuned and more aware of the workings of the universe, the more our understanding will be as to the position humanity fills in the cosmos. External determinants coordinate internal workings. Fruitful action can only be obtained after careful observation and understanding.

Therefore, aestheticism, which is defined as the study of beauty and art in all forms and the psychological responses to it, seems to be fading as a viable means for thinking and action for humanity. Beauty and art are valued projections of the self and what I see is *"the end of the residual religion of the soul as a hidden presence in art"* and *"in that event, a different type of personality would inherit the title 'artist,' and art itself will develop a different personality."* (1)

I present these ideas not as answers in themselves, but as questions to be asked. Nor is this a proposal for a new "avant-garde," which is an over-used term and means almost nothing now anyway. In this light, I offer my thesis in similar manner as the philosophy it proposes, that is, a phase in the system, a question to consider, a point of departure. If the speculations do not occur and the unforeseen predictions are not realized, it is crucial to at least entertain the possibility that they may.

"You have to use all currencies, all the processes that are already operative, and argue against their inclusiveness even while you're using them, and that is a funny place to be." (2)

I would like to begin by arriving at a larger definition of information as opposed to what people generally understand it to be.

TABLE OF RANDOM DIGITS

| | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 11900 | 48227 | 69249 | 64706 | 40568 | 45995 | 51827 | 54247 | 01331 | 51396 | 68368 |
| 11901 | 31758 | 41671 | 42683 | 53661 | 61073 | 52257 | 18840 | 73881 | 86470 | 08921 |
| 11902 | 10563 | 98484 | 10132 | 06890 | 78458 | 71924 | 86091 | 92782 | 23613 | 44875 |
| 11903 | 22843 | 89886 | 31451 | 94813 | 89675 | 41003 | 70558 | 93808 | 67610 | 48242 |
| 11904 | 53541 | 24374 | 48228 | 56684 | 45211 | 21822 | 90026 | 30283 | 37101 | 85432 |
| 11905 | 68195 | 40178 | 56754 | 82964 | 48093 | 58031 | 37235 | 87671 | 63906 | 37026 |
| 11906 | 34503 | 07521 | 03333 | 15958 | 56300 | 13594 | 20373 | 39092 | 12721 | 71885 |
| 11907 | 58210 | 31657 | 06376 | 33733 | 21945 | 17358 | 51676 | 61100 | 22937 | 23869 |
| 11908 | 36410 | 95042 | 76259 | 47696 | 95975 | 85038 | 92736 | 03104 | 39582 | 85768 |
| 11909 | 19893 | 63843 | 37962 | 90939 | 43632 | 36332 | 86863 | 94710 | 37085 | 17894 |
| 11910 | 93386 | 25252 | 84538 | 69625 | 32599 | 28225 | 28861 | 10830 | 47219 | 51026 |
| 11911 | 58883 | 97408 | 89435 | 89307 | 42044 | 47970 | 34740 | 86375 | 86058 | 42219 |
| 11912 | 42261 | 15285 | 47609 | 85243 | 00231 | 81640 | 15070 | 50940 | 47854 | 89816 |
| 11913 | 60986 | 92968 | 49773 | 62499 | 65775 | 05023 | 78128 | 77141 | 31971 | 83558 |
| 11914 | 67993 | 66941 | 61853 | 64931 | 58063 | 01856 | 90094 | 05949 | 91836 | 79741 |
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| 11916 | 07645 | 33465 | 04386 | 76028 | 63812 | 25166 | 77108 | 77585 | 29104 | 61186 |
| 11917 | 79525 | 50238 | 08120 | 74622 | 46055 | 54750 | 17848 | 37617 | 32242 | 62805 |
| 11918 | 05997 | 44081 | 15184 | 54661 | 47431 | 12712 | 60304 | 89224 | 70332 | 35910 |
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| 11921 | 47517 | 10869 | 29048 | 67434 | 12951 | 90819 | 95321 | 84173 | 08091 | 11352 |
| 11922 | 47442 | 42595 | 35731 | 84273 | 62435 | 52913 | 67023 | 10690 | 44140 | 43778 |
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| 11924 | 61294 | 10252 | 28924 | 65316 | 11381 | 36015 | 27995 | 36312 | 00287 | 31059 |
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| 11926 | 94081 | 13341 | 63658 | 91872 | 01337 | 51574 | 37554 | 81364 | 34515 | 05343 |
| 11927 | 54955 | 87712 | 19091 | 23148 | 92095 | 11037 | 53394 | 88039 | 71547 | 44185 |
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| 11929 | 45637 | 37868 | 25550 | 41804 | 36201 | 00459 | 63543 | 68632 | 78429 | 02935 |
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| 11933 | 10714 | 90918 | 47077 | 39458 | 43105 | 49657 | 60414 | 11356 | 34584 | 41827 |
| 11934 | 94107 | 22116 | 54676 | 59374 | 87108 | 45530 | 19282 | 76351 | 56724 | 72294 |
| 11935 | 93504 | 82434 | 56725 | 90151 | 25352 | 30241 | 61609 | 42681 | 26883 | 30493 |
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| 11949 | 94565 | 49831 | 90001 | 60072 | 47078 | 21524 | 85989 | 63290 | 96728 | 40912 |

INFORMATION

- The Big Flux -

Information is the prime force. It is the multi-dimensional, systematic matrix of the universe, the causal net. It is the carrier and connections of matter, energy, space and time. Put more simply, information is the potential and ability for all things to adapt, to undergo transformations, to change.

An example of my definition of information is what happens with DNA. All living organisms carry the virtually identical DNA strand but it's the information of DNA that allows the differences among species. If one were to examine under a microscope DNA of a human and a mouse, there would be no discernible difference. What's more is that all the cells of all the different parts of our bodies—our eyes, intestinal living, blood cells, etc. also contain identical DNA strands. What makes each cell behave differently is that DNA, as information, allows transformation.

I think it must be made clear at this point to realize that information is not the quality or number of things. It is not content.

A recent television commercial slogan for Xerox states as follows: "*Xerox, managing information in the office and around the world.*"

What they mean and should have said was that they manage data, not information. Information allows for data to be transmitted. It allows for it to convert from one form to another, as in computer graphics where numeric values are converted to visual forms. Information is processability.

Marshall McLuhan suggests that "*electric light is pure information.*" He says that it is a form or medium but that it is "*a medium without a message.*" (3) It has no message because it has no content. It can be arranged to convey a message as in neon signs or in a more sophisticated manner as in T.V. but in its pure sense, it has no content.

For me, he stops short. I must agree that information is not content but I am wary of his connotation of information as form. If we think of data in the sense of noun and adjective, and think of information as verb and adverb we come closer to what I am getting at. In this way we can say data informs or converts informationally to other forms of data. IBM or Xerox do not process information, but rather it is the ability of data, by information, to be processed. Nor, as I suggest, is it merely change. Information allows for change too.

Therefore, information, as I wish to define it, is very elusive. With this definition we can not actually observe information, but can only observe resulting forms as dictated by it. Reiterated, it is not quality, but allows for qualities. It is not a state, but allows for states.

In 1975, a problem arose in physics when an experiment was conducted involving light that suggested that a superluminal interconnectedness exists between and among parts of the universe (atoms and their components, specifically). It seems that occurrences between entities in space occur simultaneously. This ability is called the "superluminal information transfer theory." This instantaneous interconnectedness of systems is also referred to as "information" by physicists. At this point, in the world of tachyons, leptons, and baryons, our physical understanding of the world breaks down and things begin to exist in sets of speculative theories.

However, as esoteric as these theories seem to most of us, they are beginning to play a larger role in society, belonging less and less only to highly specialized scientists locked away in remote laboratories. As the trend toward miniaturization continues with computers, we "*approach a point in microtechnology where sub-atomic occurrences and the understanding of quantum physics does indeed matter.*" (4) In binary digital systems like computers, what determines the speed of operations, the "number crunching" capability, is the physical space from point to point of the electrical signal. Since electricity is electromagnetic energy like light, it travels in space at the speed of light – 186,000 miles/second. For computers, the shorter the connections between signals, the quicker the operation. The circular architecture of the most powerful computer in the world (at this writing), the Cray 1, is such that no wire is longer than 12 inches which allows for incredibly fast calculations. It doesn't take long for an electromagnetic signal to travel 12 inches. What is happening with the next generation of computers, the post-microchip systems, is that the architecture is becoming so infinitesimally small that things taken as operative in our "macro" world simply do not work. The understanding of sub-atomic phenomena is soon going to be a crucial aspect in the building of computer systems.

As artists begin to use the relatively new media of video and computers they will be concerned with these issues too. But the interest in science, and specifically quantum physics, has a long, well documented history in art.

A popular theory among artists at the beginning of this century was that of the fourth dimension, the existence of which was derived from Einstein's relativity theory. The idea of the space-time continuum offered new problems to artists. The Italian Futurists were perhaps the most concerned with these findings: witness the

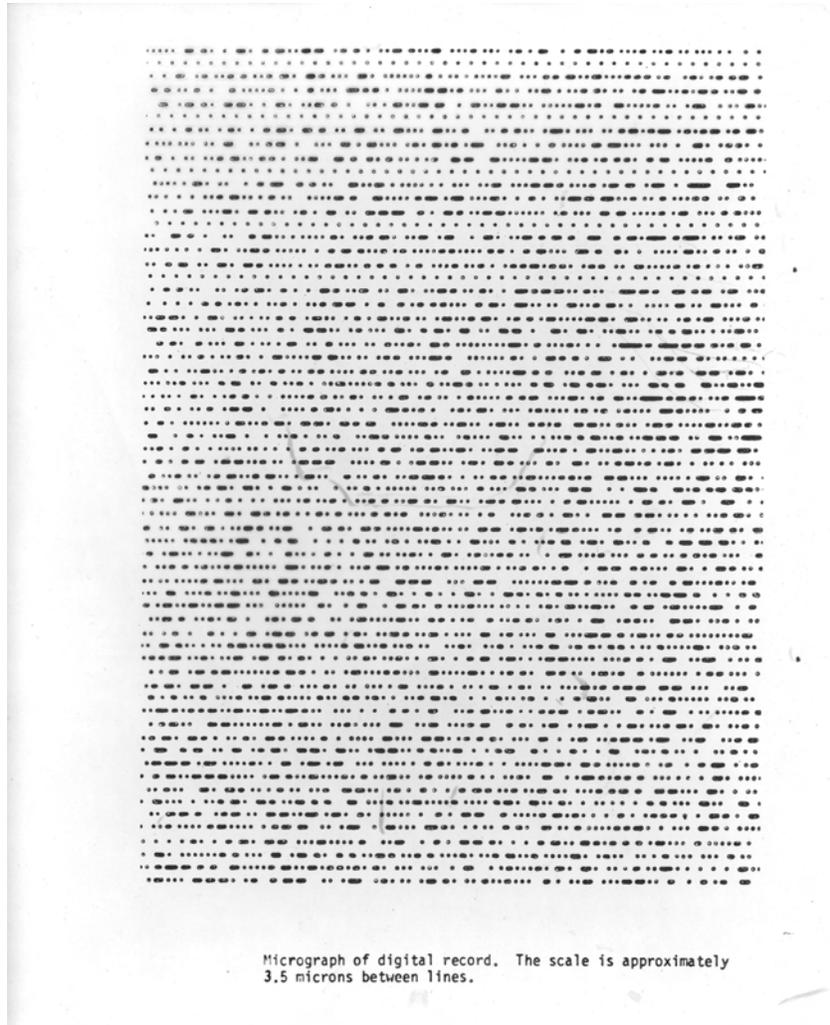
figurative sculpture of Boccioni, or the "Birds in Flight" paintings of Balla. These may in fact be more interesting for the errors and misconceptions regarding relativity than for their accurate depiction of it.

Perhaps less well known and less obvious is how the work of Marcel Duchamp was influenced by his studies of relativity theory. His interpretation might actually have been more accurate in that he did not try to represent directly his understanding of the fourth dimension. His more indirect approach was his method of incorporating shadows, both actual and not, into his work. The shadow of the bicycle wheel in "T' UM" is a good example of his artificial shadows. Duchamp used these shadows as perceptual metaphors to stand for the fourth dimension as we observe it. In other words, he wanted to say that we can observe other dimensions indirectly much in the same way that shadows are the indirect remnants of the objects that cast them.

John Cage has for years structured many of his compositions from the "I Ching," a system based on chance. His reasoning has been that if the proceedings of the universe are based on chance occurrences, then why not interpret nature in the way that nature behaves? This is Cage's relationship to relativity. The method that he uses, removing himself more and more from the act of composing, is to him a "*discipline, to free my work from my likes and dislikes, from my memory and taste. And to free me.*" (5)

John Cage was one of the first to use computers in composing music in 1967 with the composition "HPSCHD." Approaching this work in the same way he uses the I Ching, to achieve less control and "*to do something with the computer that couldn't be done without it.*" (6)

This "playing dice" is like the chance occurrences of sub-atomic phenomena, and predicts the future of art as a system of operations.



INTERPRETATION

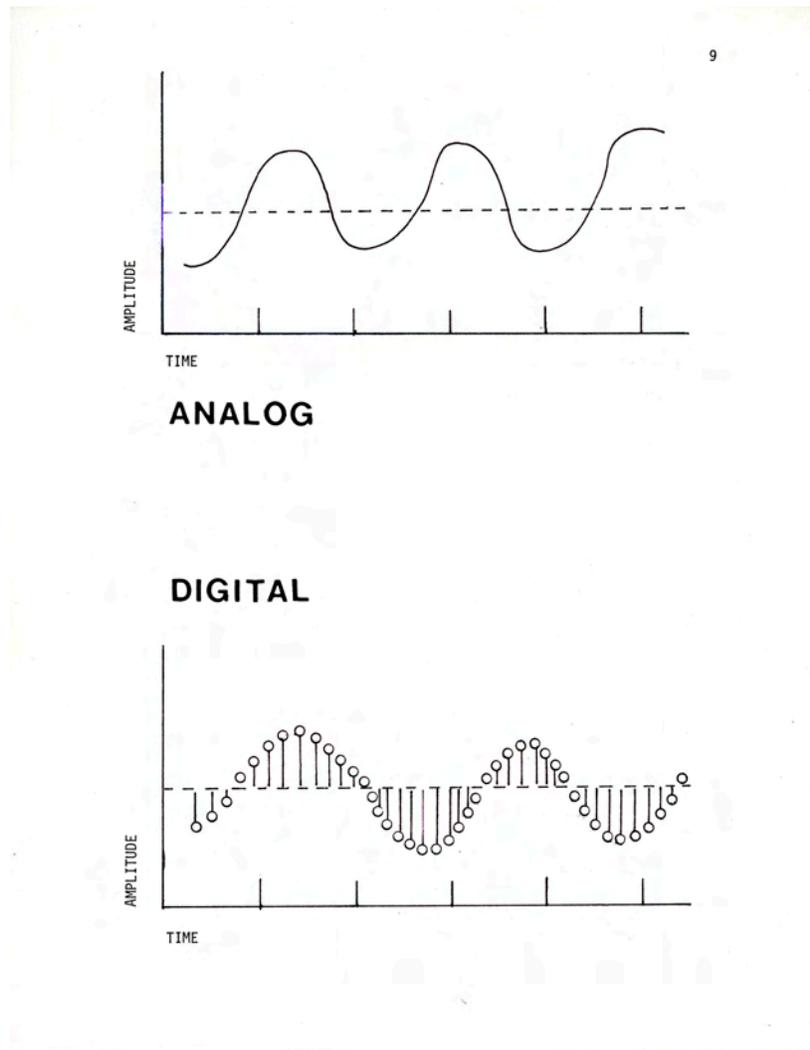
There must be all kinds of domains of artistic achievement that are beyond our mind's capacity to understand. – Noam Chomsky

Bill Buxton, Director of the experimental music studio at the University of Toronto, once said that "*one reason that people have difficulty in accepting computers is that they are digital instruments in an analog world.*" (7) For some reason this statement did not sit right with me. At first glance it would seem that, indeed, the universe does act in an analog matter.

By analog, I mean that the motion and change of things act in a continuous flowing motion. In such a system, the point of departure from one phase to a second phase would be indistinct to the perceiver. Differences in fluctuation in such a system can only be realized upon consideration of the whole. The extremes are relevant only in relation to each other, as the mean (or average) of such a system is relevant only with consideration of deviations from the mean.

Obvious examples as arguments of support for such a universe would be tidal currents, seasonal change, human physical growth, etc. Analog phases may vary in repetition, speed, and duration but the overall structure remains the same.

The key to understanding such a system is the idea of continuousness, constant oscillations, flow. According to our unaided human perceptions, this archetype is completely adequate and appropriate. However, upon further investigation, the foundations of Buxton's "analog world" tremble, become transparent and fade. Consider Quantum Mechanics.



Quantum Mechanics came from an accidental discovery by Max Planck in 1900 while investigating structural changes in heated metals. He discovered that the energy released from the material (energy in the form of light) increased in distinct, discrete packets that he called "quanta." Furthermore, he found that energy packets increased in a discontinuous manner, that is, in whole rather than fractioned packets. The reason that we perceive that a heated metal rod changes from red to yellow in a continuous manner is that we are unable to see the tiny jumps in energy. The basic structure of digital electronics echoes the model of Planck's quantum mechanics.

Digital systems, like computers, are based on the discontinuous binary number system which is composed entirely of the two values 1 and 0 representing "on" and "off" respectively. It is an either/or structure that lends itself to more accuracy as compared to other, (analog), systems.

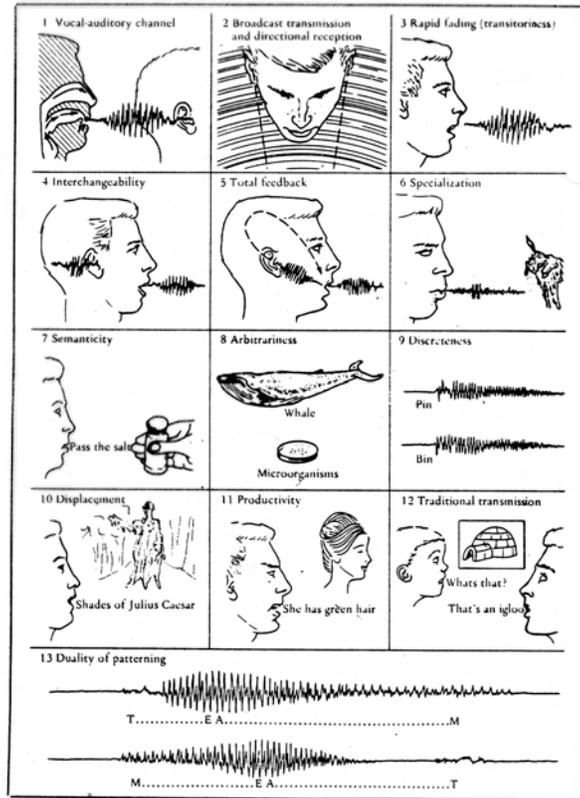
But to say that this model stands alone as the correct model of the universe would be erroneous too. The cosmos, whether macro or micro, acts neither in a strictly analog or digital manner. Both aspects are relevant. The difference in interpretation lies in the difference in perception. This is one of the classic problems of quantum physics and of art.

When analyzing light, it seems to behave in both particle form (discrete, digital, photons) and in wave form (continuous, analog, flow). How light acts depends upon how the experiment is set up. If we want to say it's an analog or wave form then all we have to do is specify the parameters to make it seem so. The same can be done to achieve a digital or particle result. So in a funny way, it would seem that the very act of perception determines reality, our perceived reality.

By this explanation, I submit the proposal that aestheticism, that is, if something can be considered "art," whether it be a painting, sculpture, performance, or shining your shoes, is based solely on the frame of mind that it is considered. If it's in an art context, it's art. The context is the parameters of the experience as determined by the interpreter. If the experience can be perceived in a similar manner to those outside the interpreter, then the perception is strengthened toward an objectified actuality. However, it must be noted that this goal, the "actuality," as attempted by any interpreter, is only one of many perceptions possible, and due to human make-up, is inaccessible and unachievable.

One of the parameters of the art paradigm is the context in which the interpreted world is presented to establish validity. We experience art in specified locations and times. We experience art in museums, concert halls, alternative spaces, at happenings, etc. We know where art is because we determine how it is to be experienced. We determine the very existence of art. As we go, so does art. If we go, so does art.

Freedom from these parameters, the contexts, allows open relationships between humanity and the world. With this understanding comes the inheritance of change.



COMMUNICATION

New needs need new techniques. – Jackson Pollock

In a discussion with a colleague of mine, Ken Gray, the subject was brought up of the artist in the role of communicator, a communicator of ideas and experiences. The discussion took pace in the context of the relationship that T.V. has to art.

Consider this: How many people, that is, of each stratum of society, engage themselves and surround their lives with what is considered "high art"? It would be a safe bet to say that a very small percentage do. I don't go into people's homes and find what I see in galleries and museums. It's not that the forms of "serious" art are rare. Indeed, with a minimal amount of searching one might be surprised to discover a small glut of art. But as comparison, how many people own T.V.s? Virtually everyone! And many households have several to make up for those who don't. In the competition between art and T.V. for visual (dare I say intellectual?) stimulation, television wins running away. This was an important revelation to me.

I recently attended a dance performance in which a small black and white television was used as a prop to aid the scene in mimicking a typical household. I was mildly surprised, and in fact delighted, to discover that the audience was almost to a person fixated to the T.V. and not the performers. This small screen commanded just as much attention, even with the sound turned down, as the dancers. This situation suggests that the structure of television, the visual language of it, is more widely understood, appreciated, and desired than more traditional media like painting and sculpture.

The channels of communication are determined by the forms or language that define these exchange of ideas. In order for society to regain some sort of true interaction and conversation ability it becomes necessary to understand the forms of language that define the exchange of ideas to open channels for more interactive and diversified communication.

An exciting social phenomenon is the rise of sophisticated media like television (especially in the form of two-way systems like Q.U.B.E. Cable T.V.) and computers. These new systems offer a whole new structure to society in its relationship to art and offers a whole new structure to art itself. What emerges from the media of television and computers is a self educating process that is brought to the "layman" artists giving rise to audience-participants and eliminating the didactic role of the artist with which the art-system so fervently clings to, to maintain, in its mind, authority. Soon everyone will partake in a familiar visual language, one that is widely understood. This supports a beginning of true communication through autonomous exchange systems.

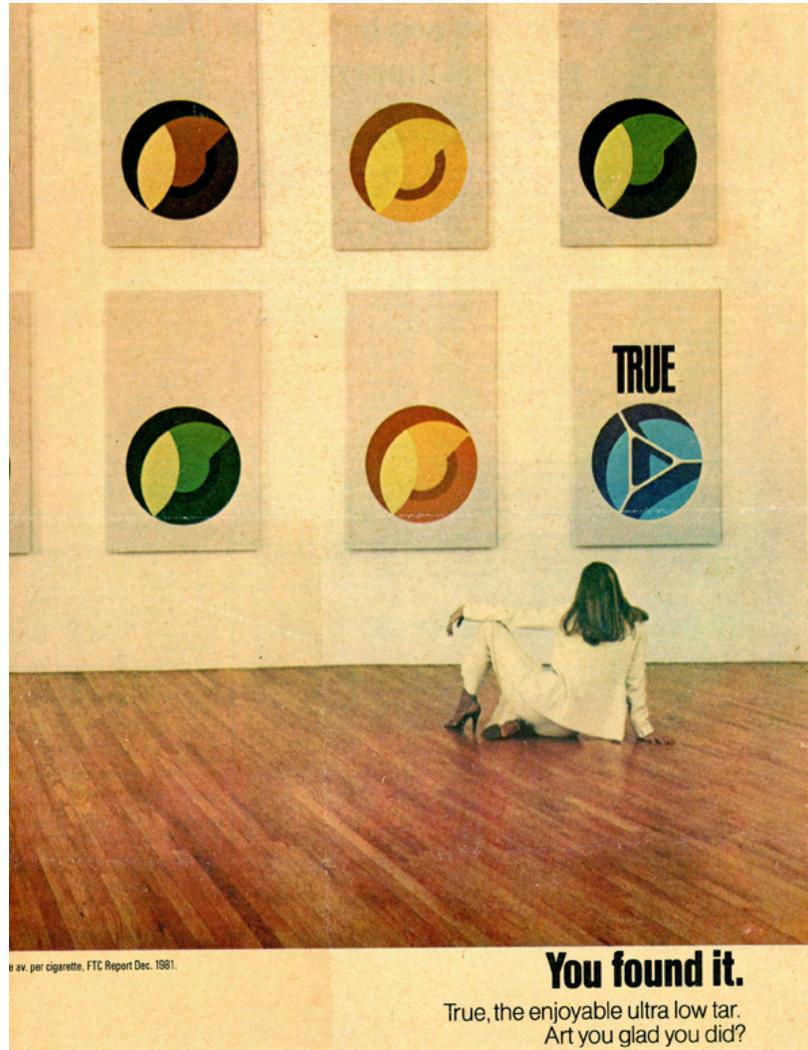
My contention is that people are familiar with certain languages and that others simply don't fit. By languages I mean all of those signals, both visual and aural, contextual and formal, that allow for communication. In order for any form of communication to exist there must be an externalization of the idea to be communicated, and that externalized idea must be in a language that can be interpreted in the way it was meant to be. This implies that a dialogue or exchange is necessary for any form of communication to take place. In other words, the language must be a familiar avenue for sharing ideas, however remote. If the language used for expression is inadequate, then what occurs is one-way transmission, or a sort of feedback loop which only benefits the originator.

It's necessary to realize that all of the communication that we, as humans are able to partake in, is severely dependent upon our genetic make-up to interpret signals from our environment, to synthesize these into some sort of understanding to gain new insights into our original interpretation. The aesthetic sense has been honed through the ages as a sort of dialogue between humanity and what occurs "out there" in the environment. However, since aestheticism is a form of introducing values, specialty and exclusivity in understanding, then what is left, the remainder, of which I suspect makes up the majority of the universe, is that form of "art," if you will, that can never be understood or have any utility whatsoever by human beings. In other words, by determining that which is artistic, aesthetic, or any similar form in thinking, automatically creates by default a whole alternative system that is imperceptible as art.

This goes back to our earlier discussion of quantum physics and relativity in terms of creating reality through the very act of perception. *"You can't step out of the context that defines communication (art) by communicating (making art); it will only lead to trivial permutations within the same concensus."* (8) Thus, in order for humanity to achieve anything close to true communication, it is necessary for us to undergo the process of externalization to an extreme.

Noam Chomsky gives an example of this when discussing modern music. He speculates that the ability of those able to understand post-Schoneberg music is due to their possessing a *"particular quirk of mind that enables them to grasp modern music."* (9) He believes that some people are genetically set-up to understand it, and admittedly he is not one. Furthermore, these genetic intuitions that allow for such diversity in interpretation

and understanding, have a point of exhaustion, beyond which, because of our "species genotype," we are not able to extend ourselves. While this may be true in the process of human evolution in the standard sense of the theory, it ignores the possibility of externalization as a form of biological, and thus aesthetical, evolution.



newspaper advertisement, 1983

REALIZATION
The end of art
(Externalization toward singularity)

The subtitle I use for this section is not meant to be obscure or obtuse but is used to point the way to where I think that we, as artists and human beings are going. Singularity is by now a common word that was coined by physicists to describing a phenomenon of nature called a black hole. A black hole is a sort of reverse star which has a gravitational pull so strong that not even light escapes from this object. It is speculated that if an object passes in close proximity, the gravitational pull sucks the object into the vortex of the black hole, called the "event horizon." At this point, all the known laws of physics break down, time and space cease, and the object is believed to be catapulted into perhaps another universe.

I like this explanation because I think it serves as a model for the future of aesthetics as a viable means of thinking, as a philosophy, and as a pattern for living. Also the word "singularity" connotes to me a union, a state

in which all things merge into a cohesive whole. The world of aesthetics stands at the brink of an event horizon brought on by what we so feebly call "artificial intelligence" represented by computers, our externalized minds.

All of human nature, that is, all action toward, and reaction to, signals from our environment is bound up in techniques for survival. One of these techniques is the highly developed manner of thinking and experiencing called aesthetics. With aesthetics, we assign values to different phenomena of the universe that we experience, and by doing this we position ourselves in a certain context to the universe. This is a way of dealing with our environment.

"Culture is a system of knowledge. By that I'm talking about culture as a system of evolution [my underline]. I'm talking about it as a uniquely human way of learning about the world, and of developing and adapting to the world, but I'm also talking about it as a self-knowledge system." (10)

In this century, the definition of art, through its forms, has become so expanded as to be self-annihilating. Duchamp predicted these tendencies with his "ready-mades." Joseph Beuys reiterated it with his claim that *"everyone is an artist."* (11) But with this statement, Mr. Beuys eliminates standards and judgment and unknowingly cracks the foundation of aesthetics. If everyone is or can be an artist, then it must follow that anything is or can be art. *"The world is full of ready-mades."* (12) So in the strictest sense, by saying that everything is art, we are saying that nothing is art. There are no standards.

William Wilson speaks of this more specifically in his article about "Operational Music." In this article, he says that music is such now that *"nothing can be defined as in itself musical or non-musical material.. Music is less a matter of special sensibility, a structure, a quality of sound, an image of time, an expression of feeling, or a significant form, than a series of operations with sounds. An operation is an exertion of energy uncomplicated by irrelevant emotions."* (13)

What is so important to realize is that these developments, away from the judgmental and subjective in art, is a process that is larger than just an aesthetical concern. Indeed, it is a move by humans for survival. It is a move away from the selfhood that generates non-change, stagnation, and ultimately extinction. It may seem odd and paradoxical at first, but it appears that in order for we as humans to act in a way that is conducive to nothing less than our survival, a letting go of our biased self is the direction to explore. The evolutionary procedure that supports such a change in philosophy and action is that of externalization and the form that it takes is artificial intelligence.

Until recently, certain characteristics of human thought processes were realized as those which distinctly separate mankind from the rest of living (and non-living) things. For example, complicated mathematical formulations were once considered to be one of the highest evidences of human intelligence. Now computers blitz through numerical calculations so fast and accurately that very few people still consider this to be so. So what is left? What is it that separates "us" from "machines?"

It seems that as soon as machines are able to duplicate any human trait then we no longer see or value that trait as being characteristically "human." Curiously enough, traits such as intuitiveness and even emotions are not as difficult to replicate as simple common sense. Trivial tasks that we have taken for granted, like scene recognition or holding a simple conversation are much more complicated procedures than we once thought.

Currently, in what is regarded as the fifth or sixth generation of artificial intelligence, computers are capable of speech, voice recognition, playing chess, and even diagnosing diseases. A generation of computers is that span of time that is recognized as a full exponential stratum above the previous one. A computer generation is now considered to be seven or eight years in duration, but even that span is shortening. Since the growth of artificial

intelligence is increasing at such a rapid rate, it is difficult to tell exactly which generation we're in. Computers grow in what is called "Lamarquian" fashion in which components are simply tacked on for improvement of the system. Humans, on the other hand, evolve into new forms by natural selection in which the specimens best able to adapt to the environment survive and their genes are the ones that get passed on. This method of growth is painfully slower than that of computers, and at the rate that artificial intelligence is accelerating, it's hard to believe that humans will ever catch up. The human brain has not grown in physical size for more than two hundred years which seems to suggest a dead end to the species.

So what does all of this indicate? What is our destiny? *"If we can give the computer intelligent thought, emotions and creativity, clearly the era of human beings as the measure of these things has ended."* (14)

Robert Jastrow, founder of NASA's Goddard Institute for Space Studies and professor of astronomy and geology at Columbia University and professor of earth studies at Dartmouth, speculates on this topic: *"In the very long run, I think that life in fact passes from our flesh and blood form into this invulnerable and almost immortal form...and I don't believe that billions of years from now our intelligence will still be housed in a hollow shell of bone on the same model we got from the fishes 300 million years ago."* (15)

Since computers were not running around on the African plains a million years ago, the instincts that make us what we are and enable us to adapt and survive will probably not be those possessed by artificial intelligence systems. Their history is different from ours and there is simply no need for them to develop the same traits that we did.

It may be that the survival package for artificial intelligence, rather than being composed of jealousy, anger, intuition and the aesthetic sense, etc., will contain such traits as operationality, informationality, and communicability. The exact components of these systems are difficult to predict, but present indicators imply trends toward the forms and directions that I suggest. Granted that these changes won't be made in the next few years, but to predict that they may occur at all presents interesting potentialities to consider.

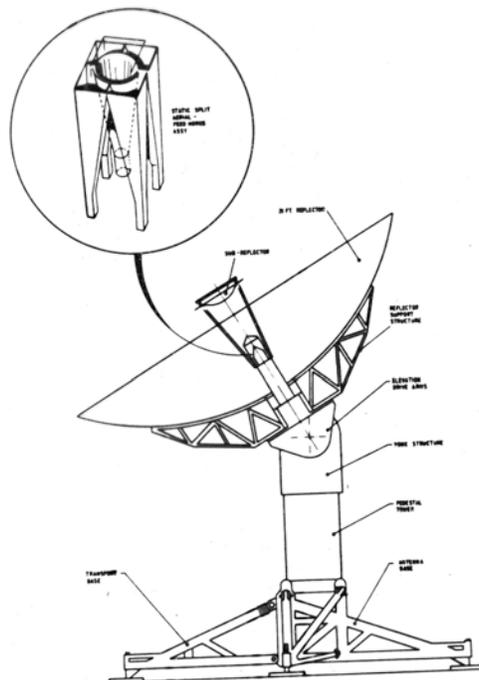


Fig 1 Basic layout of aerial

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FOOTNOTES

1. Thomas McEvelley, *Art Forum*, May 1983, pg. 85

2. Robert Irwin, "Taking Art to Point Zero," *The New Yorker*, March 15, 1982, p. 104.
 3. Marshall McLuhan, *Understanding Media: The Extensions of Man*, (New York: Signet, 1964), pg. 23.
 4. Gene Youngblood, Presentation at CADRE '84, San Jose, Ca., Jan. 11, 1984.
 5. John Cage, *Genesis II: Creation and Recreation With Computers*, (Reston: Reston Publishing Co.), p. 119.
 6. *Ibid.*, p. 119.
 7. Bill Buxton, Lecture at DIGICON '83, Vancouver, August 17, 1983.
 8. Gene Youngblood, "Toward Autonomous Reality Communities," *SIGGRAPH '82*, 1982.
 9. Noam Chomsky, "Noam Chomsky," *Omni*, Nov. 1983, p. 173.
 10. Brian Eno, "Brian Eno," *Keyboard*, July 1981, p. 66.
 11. Joseph Beuys, *Joseph Beuys: Life and Works*, (New York: Barron's 1979), p. 255.
 12. Salvador Dali, *Conceptual Art*, (New York: E.P. Dutton & Co., Inc., 1972), p. 10.
 13. William Wilson, "Operational Music," *Breaking the Sound Barrier*, (New York: Elsevier-Dutton Publishing Co., 1981), p. 91.
 14. Patrick Huyge, "Of Two Minds," *Psychology Today*, Dec. 1983, p. 34.
 15. Robert Jastrow, "The Machine In Our Future," *Houston Chronicle*, Jan. 17, 1982, p. 15.
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epilogue

In some ways, the drama of the rejection episode was understandable. The people on my thesis committee were not equipped to deal with these ideas. Few were at that time. But they were grossly erroneous about their assessment of the fundamental concept. The problems with this paper are many, and although they are significant and numerous, fortunately they are for the most part only formal.

But in that regard, it's a mess. Seemingly unrelated topics fly all over the place. It jumps from music, to quantum physics, to ready-mades, computers, light, gravity, and evolution in ways that are sparsely connected making parts of it barely coherent. As exuberant, young, inspired people often do, I tried to do too much. What is a short paper could have been a book, which is the opposite of many books today which are no more than extended essays. While I can justify the relationships among the various topics I discuss, admittedly they needed more fleshing out.

Reading it now the syntax is so strange to me that I barely recognize the author. It reads more like a manifesto than a thesis. Perhaps I was overly influenced by the call-to-arms style of the idealized intellectualism of futurists like [McLuhan](#) and [Toffler](#). There's more than a fair amount of simplistic, didactic "AI or die!" rhapsodies.

I'm still not sure about the contents of the new paradigm I was proposing – the so-called "four parts" of this ontology – and whether structuring the paper this way makes any sense. I was trying to organize many different things into an outline that made a cohesive whole. But it felt forced then and still seems that way to me now.

On the other hand...

While it is indeed a short paper for the subject it attempts to tackle, if it were possible to cram all of my ideas into a single sentence, I would have. I took great pains to be as concise and clear as possible with my writing style in an attempt to comfortably convey concepts that are immensely complicated. I've always admired and preferred simplicity in writing.

I limited my references, consciously giving deference to first-hand sources - lectures, interviews, panel discussions - rather than written materials. I thought that by traveling to conferences to hear from the horse's mouth, to meet some of the leading thinkers of the day, it would demonstrate my serious dedication and commitment to the effort. Above and beyond the call of duty, as it were.

I was very sensitive about copy-cat-ism and worried that using so many references of ideas and theories from others would not be perceived as good research, but would rather make the paper seem derivative. My paper bumps up against this potential flaw. But there are two ideas that were truly my own and came from no one else.

One idea of mine that was original was my use of the term "singularity." In 2007 I read the book [“The Singularity is Near”](#) by Ray Kurzweil because I was intrigued by its title. I recognized the term. When I scanned through the introductory first pages, I couldn't believe what I was reading.

Here's Mr. Kurzweil's definition of singularity in his book:

“[The singularity is] an era in which our intelligence will become increasingly nonbiological and trillions of times more powerful than it is today—the dawning of a new civilization that will enable us to transcend our biological limitations and amplify our creativity.”

Here's my definition from my thesis:

“The word ‘singularity’ connotes to me a union, a state in which all things merge into a cohesive whole. The world of aesthetics stands at the brink of an event horizon brought on by what we so feebly call ‘artificial intelligence’ represented by computers, our externalized minds.”

Spooky action at a distance? Not verbatim but close enough for government work.

"The Singularity Is Near" is a monumental work – more than 600 pages in length with copious notes and references – and, for my money, one of the most consequential books since Marshal McLuhan's "[Understanding Media](#)." Compared to Mr. Kurzweil's book, my paper is pathetically paltry. I make no pretensions otherwise. But nevertheless I think that [I was on to something](#) back then.

The other original idea is my definition of information. My description transcends McLuhan's signal/data transmission into something that resembles something that is more of an ethereal state or condition (force?) rather than a tangible thing. And although in my paper I am the source of this concept, it was a revelation even to me. Like the Kurzweil comparison above, I have since read [almost identical definitions of information](#) from numerous [authors](#) and [theorists](#). It pleases me that I came to this concept independently. It's the strongest.

The basic premise of my thesis, that artificial intelligence would change humans and the world, and most specifically with regards to the kind of thinking associated with aesthetics, seemed, at least to me then, plainly obvious, and in the early 1980's I felt desperately behind. Many of the speculations that I suggested more than thirty five years ago seem positively quaint in retrospect even though they are still being written about and debated today, so I wasn't exactly in the back of the pack. Who now would argue against the usefulness, indeed the utter dependence upon, computers? That humans are rapidly evolving into something else seems hardly debatable.

What purpose does all this serve? I don't know. Perhaps none. The ideas that I dealt with then are long past their usefulness, at least for me. What was radical thought then resides now in the ubiquity of popular media. It too has dissolved and expanded. It is now mostly entertainment. And I've long since moved on to other things. I've graduated. But like a most savory addiction, I continue to be interested in what I don't know. The question remains for me, as it always has, what now?



island, Vicksburg, Mississippi, 2017