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Aleatory architecture: The ethics of chance as design discipline

Robinson, Bobby Neal, M.Arch.

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ALEATORY ARCHITECTURE:
THE ETHICS OF CHANCE AS DESIGN DISCIPLINE

by

B. NEAL ROBINSON

A THESIS SUBMITTED
IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE

MASTER OF ARCHITECTURE

APPROVED, THESIS COMMITTEE

Alan Balfour, Chairman
Dean, School of Architecture

Peter D. Waldman
Professor, School of Architecture

Mark Wamble
Assistant Professor, School of Architecture

Houston, Texas

May 1992
ABSTRACT

Aleatory Architecture:
The Ethics of Chance as Design Discipline

by

B. Neal Robinson

Upon acceptance that what is perceived to be "true" is related specifically to a given circumstance under given conditions in which all variables cannot be known, sustaining a "conviction" in the design process is no longer ethical. Precedent concept as a working goal must be abandoned in a relativistic critique. It is only possible to resign oneself to the methods and discipline of chance as a design directive. Therefore, all information, regardless of perceived significance becomes equally [ir]relevant to subsequent impositions of design decisions. Appropriate versus inappropriate is merely academic and moot. An application of non-methodological chance design is presented herein.
ACKNOWLEDGMENTS

The thoughts contained in this thesis could not have been successfully articulated without the insight and advice offered to me by my Thesis committee. I realize their difficulty in advising me on such a tenuous, non-methodological approach and I appreciate very much their faith in the project and subsequent words of encouragement. Specifically, I am deeply indebted to Alan Balfour for his extraordinary patience and latitude that spanned the lengthy course of this investigation. He increased immeasurably my comprehension of the task at hand. I am also grateful to Peter Waldman for teaching me the value of a good story and a little magic. His research as a scientist would have made Houdini proud. Thanks also goes to Mark Wamble for helping out on such short notice and for his acute understanding of my dilemma. Finally, I want to thank three students who aided me in a way no professor ever could. By admiring their actions and demonstrations of belief-ability, I gained quiet personal courage, motivation and a rejuvenated sense of duty and passion for my own work [or non work as the case may be]. These students are John Herrera, Polly Carpenter, and Jason Young. In closing, I give humorous and sometimes not so humorous thanks to my parents, Bobby and Carolyn for investing in their son's appetite for knowledge only to find out that after eight years of higher education, he knows less now than when he started.
CONTENTS

Abstract ........................................... ii.

Acknowledgments ................................. iii.

Contents ........................................... iv.

Preface ............................................. v.

Entry One ......................................... 1.

Hooks and Ladders ................................. 7.

Line Drawings ...................................... 21.

Ferris Wheels and Other Angels ............. 41.

Bibliography ...................................... 57.

Appendices ......................................... 59.

A. Heisenberg's Principle of Uncertainty ....... 60.

B. Angelus Occidentalis ......................... 61.

C. Reading Rules .................................. 63.

D. Design Directives for Cardinal Windows ... 66.

E. Design Documents .............................. 72.

F. Juror's Comments ............................ 118.
As human beings that exist in a culture awash with multiples of [mis]information, finding and/or constructing one's bearings is often a daunting task. To make this transition easier, mankind, in particular, one of man's kind; a cave dweller from southern France, decided that the creation of systems of symbols would constitute an appropriate successful first venture in grounding oneself as part of a larger, cosmically inclined whole. Whether or not his image, to which we, present day western culture, have assigned the label "bison", would prove to be a success or failure however, was ultimately not for him to decide. That determination was left to some "other" force. He was merely interested in improving his odds for the hunt. Such is the case with this thesis. I am primarily interested in improving my odds for a critical venture into the production of architecture. Given this goal and the educational setting in which it is being attempted, the topics, texts, actions and reactions that follow are submitted as active participants in yet another primary engagement of grounding. Some actions are less fruitful than others but none are superfluous.* Ultimately, regardless of each sections' tangential relation to one another, they are all

* Note: The term "less fruitful" assumes that a reaction did not produce the expected or desired results. But as part of the thesis to follow, my emphasis is the repression of such desired results. Technically, when viewed in this light, for something not to produce the desired result, does not translate into a negative condition. It is simply something else. Therefore, I should say; "All actions/placidity are equally fruit-full/less.
founded upon that common mark executed in the darkness of a damp cave. It
was this initial inscription of a symbol that began my thesis and the many other
circumscriptions that followed.

This scratch which is my thesis, is also testament to my relative status as
newcomer to the world of symbols; a trait that is shared by all mankind thanks to
the concept of evolutionary time. As newcomers, it cannot be expected for us to
navigate the symbolic world with any degree of certainty. This is indeed the case
as many of us are not even aware that we exist in such a medium. We
continually, whether consciously or unconsciously, create symbolic systems of
meaning such as scientific theorems, political ideologies and religious doctrines
and then promptly forget that they are our creations. [Truth is an illusion that we
have forgotten is an illusion.-Nietszsche] We consistently confuse them with the
nonhuman realities they were intended to explain. We construct about
ourselves and within ourselves an environment of symbols and are unable to
differentiate where symbolic representation ends and the nonhuman reality
begins. We can't tell the map from the territory so to speak.

For those of us in the West, this demise is studied by cognitive science
and the body of thinking-about-thinking known as "critical theory." I, hoping to
be a critical architect who aspires to produce critical architecture, must engage
in debating such issues of social symbolism in order to become a responsible
homo-faber. After all, my language of bricks and mortar hardly knows anything
except symbolism. As a cognitive scientist, I am not an objective thinker. That is,
I do not accept that the human mind is capable of an accurate/true,
impersonal/objective, mirrored response to reality. Rather, I possess the belief
that what is affectionately known as the "real world" is nothing more than a complex social creation in continual flux. This "constructivist" line of thinking, of which deconstruction is a part, asserts that we do not, will not, and should never hope to have a "God's eye" perspective of any given circumstance. What we now appear to experience as the objective "real world" is merely the preceding generations' collective construction. And, depending on your ancestors, your symbolic systems may be different than those of your neighbor. Because different groups of people have constructed different sets of stories in different sets of languages that imply different life experiences, the idea of multiple realities is born, thus reinforcing the lack of one, true, objective reality. Even the idea that such a debate can exist makes us entirely different from people who lived only a few decades ago. Mies, LeCorbusier, Speer; They would have never tolerated such a debate! I am much weaker however. Therefore, I engage in such debates and see them as design directives for my architectural work.

In closing this preface, I wish to insert a foreword. It was my first attempt at articulating a "problem statement" upon undertaking the journey that you now hold in your hands. For the most part, it is still "true."

SEPTEMBER 1991

Increasingly, over the past several years of my collegiate education, I have developed a skepticism of the world and the activities occurring on and within, as being operational based on the construct of logic. But this is not an ordinary logic. It is a logic of reason so scientific in methodology that anything
other than the quantitative and detectable is dismissed as superfluous and extraneous to the advancement of "the cause." There is no provision for the angelic in this logic. Everything must either be explained into or out of existence; virtual included. This method of explanation is what I wish to take issue with. My concern is that the persistent system of reason attempts to operate only with those things which are "real" or "knowable:" reason being the foundation of reality. But the term "reality,"¹ by definition, excludes such things as belief, hope, instinct, trust, and faith. It is unfortunate that the word is bound by this disposition because there are instances when reason is no longer useful in explaining the certainty of things.² At these such extremities, the concepts that reason denies are the only tools available for use and they are thus forced into reconciliation with "reality" on very arduous terms. One such moment of reconciliation is the idea of the accident; the unintended; the indeterminate. It is here, within the realm of "chance"³ where the two worlds of the seemingly rational and the ex-human angelic, overlap. It is from within the space of this overlap that I desire to cultivate an architecture. I believe⁴ that by

¹REALITY: 4] That which is real.
REAL: 1] Existing as true; not merely seeming.
²"More clearly than anyone else, it was the French thinkers of the ENCYCLOPEDIA who drew the conclusion that all scientific prediction is like astronomical prediction. Given the whereabouts and speeds of all the heavenly bodies at this instant, Newton had said, we can predict their movements from now to eternity. If that is so, said Laplace, then imagine yourself given the whereabouts and speeds at this instant of every atom in the universe. Given all these, you can forecast the fate of the universe; its molecules and its men, its nebulae and its nations, from now to eternity. And more than this: you can go backward in time as well as forward, and reconstruct the past to eternity." J. Bronowski, THE COMMON SENSE OF SCIENCE, (Harvard University Press, Cambridge MA, 1978.), p. 63.
³It is very important that the reader not confuse the word "chance" with the word "random" or with the emerging science of "chaos". "Random" involves the mathematics of probability and statistic. Usage of the word itself, as an adjective, has recently been called into question by physicist John Makafee of the Georgia Institute of Technology. (NOVA: Adventures in Science PBS Television Broadcast, 09/27/89.) In addition, "Chaos", although tangentially related to the idea of chance, is primarily a mathematical investigation into the emergence of fractals, "theories of everything" and other highly "ordered" phenomena. For further information, see; James Gleick, CHAOS: Making a New Science. (The Penguin Group, New York, NY, 1987).
⁴Now understood to read, "possess the belief".
dealing with chance in such a way so as to acknowledge and preserve its manifestations in both methodology and built form, I will have found a way to fuse the angelic with the rational. I do this both as an attempt to admit my skepticism and openly question the "authentic" and true", and as a means of discovering the limits by which I am bound as an imaginative being/architect. With the ensuing thesis text, an attempt will be made to present as part of the methodology of design; using an approach of circumscription, an argument for the resolution of an architectural problem based on the author's specific notions as to what architecture is, is not, should, should not and can be. This is not simply a proposal for project "X" based on a cumulative progression from "A" to "Z" with reactions 1 and 2 to follow. It is rather, an attempt to provide a sound foundation upon which to construct an architecture through the act of circumscribing an argument/building. This mandates a thesis about the act of building as well as the building itself. This attempt is not intended as a labyrinthine construct that must be mastered in order to comprehend the resultant project. Nor is this writing meant to be a smokescreen that aims to camouflage innumerable weaknesses: both my own and those of the methods and tools that are employed. To the contrary, it is a sincere effort to locate an honest, ethical, acceptable way for me to declare triumph of the architectural deed. A deed which ultimately begins in weakness.5

Admittedly, this journey is a very personal one and at times will focus perhaps a little too long on seemingly trivial specifics. I apologize for such occurrences but defend them as necessary clarifications of a particular frustration. However, by favoring the particulars, I do not intend for this journey to become a private one. Thus, the foreword you are currently reading is an

5See Peter Eisenman
attempt to make what follows more accessible. In accordance, I should advise that often the included texts will not "conclude." That is, they will not offer specific solutions to perceived "problems." [Nor should they] Instead, they exist as ideas about the specifics of certain inscribed aspects of the journey: all of which I contend have a direct application to the built environment. They speak of the indeterminate, the allegorical and the "fuzzy," but are not void of precise intent.

"There Are No Accidents Here."

Nuclear physicist on the description of neutrino tracks as the result of electron collisions in the bubble chamber at Fermilab, Batavia, Illinois.

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6In Objectivity, Relativism and Truth (Cambridge, MA: Cambridge University Press, 1990), Richard Rorty declares himself and other antirepresentationalist as being among the "fuzzies." That is, "...those that do not view knowledge as a matter of getting reality right, but rather as a matter of acquiring habits of action for coping with reality."
SCOURING PREHISTORIC ART: The French government says it will file a complaint and possibly fine a group of do-gooders who damaged ancient cave drawings in their zeal to clean up graffiti. The Cultural Ministry said it is filing the civil complaint against a Protestant youth group for the destruction or degradation of archaeological treasures. On March 15, members of the Eclaireurs de France group got carried away in their mission to clean up a corner of southwest France, scrubbing with steel brushes two 15,000-year-old paintings of bison in the grotto of Mayrières.

- From our staff and news services.

Q: My question concerns the story about the children in France who destroyed ancient cave paintings in their attempt to clean up graffiti. How was this allowed to happen?

Kit Coker, Atlanta

A: That's exactly the question the "Cave Kids" are asking the government in their response to a civil suit charging them with destruction of 15,000-year-old cave paintings of bison. "If the site was so important, why was it not protected better?" ask the youths, who were members of a spelunking club. They say their motive for cleaning up the caves was purely civic responsibility and that the damage is regrettable. There are mixed reports of just how much of the paintings was damaged — from "just a little bit rubbed off" to "all that was left was the tail."
A man in a brown uniform emerges from a brown truck to deliver unto me a brown box [1"-3" x 10" x 4 3/4"]). Markings inscribed onto the box indicate that it has travelled in all cardinal directions at least once as well as the relative directions of Kepler's "up" and Newton's proverbial "down."

Upon removing the reflective adhesive, the discovery of a cloth bag is made. An elastic rope binds the bag. The sack's budget - $15 - is inscribed on a paper tag that hooks the rope.

Within, wrapped in discarded text are five new texts.

Realms of the Unreal: Insane Writings
A Very Old Man with Very Large Wings
Dead Certainties
Guilty
Vanishing Presence

The arrival of these inscriptions are the nexus for all circumscriptions to follow.*

*See Thesis Review
ENTRY ONE

Summation of Thesis Intentions
Revision 4
Neal Robinson
College of Architecture

November 17, 1991

The proposed Thesis topic has two tentative working titles at this time. *Constructing an Accidental Architecture: The Dilemma of Angel Analysis* is the first heading and *Architecture as Demarcation: The Problem of Drawing Lines* is the alternate. While my investigation primarily resides as an architectural undertaking, its generative source or nexus stems from the field of what is perceived to be science. More specifically, it springs from a healthy skepticism of the belief systems advocated as a result of the pursuit of scientific truth as the icon of rationality. These established belief systems, which include causal laws, reasonable explanation, absolute supposition, etc., heavily favor for inclusion only that which is presumed to be "real:" observable, and measurable. By limiting the tools in this way, science aids itself in the establishment of an ability to consistently know [as in fact]. Recently, I have discovered that I favor myself to be among those who openly question this perceived ability and the systems of
belief that are packaged with it. Science has not been selected because other belief systems are immune to this skepticism. Instead, science has been chosen because of its everyday presence in the decision making processes of our lives and is therefore a familiar subject upon which to base the discussion. This thesis is not an attempt to discount the remarkable advancements of the scientific community. It is however, my intention and duty to take issue with the authoritative nature by which science, or any other discipline, advocates itself as bearer of truths. I contend that we, Western society, should not promote the definitive and authoritative assumptions of modern science. To do so would be to inhibit our own freedom of thought and hence science would cease to be an instrument of change and instead become one of repression. We should instead focus our attention on the frames of reference within which beliefs are presented and evaluate them according to the principles of relativism as opposed to absolutism.

The line of questioning proposed by this thesis is very much in the Foucaultian sense of examining the structures within which knowledge exists. It also focuses on the way in which power is associated with the production of truth, and how groups [in this case, science] manipulate notions of knowledge, objectivity, progress and the like to construct a dominance of others. Witness The moralizing actions and writings of early modernists architects. By claiming that their design actions were rational and objective, they attempted to achieve power over the individual who resided in their housing estates. LeCorbusier even went so far as to instruct people how and where to dress themselves. While the humanities have willingly engaged in questioning the merits of the genuine and relative power systems, the sciences, in particular the physical
sciences, continue to operate within the traditional framework of empirical
deduction and propagate power-full assertions about how we should perceive
our environment. These assertions do not allow for the invasion of the angelic.
This is the limiting factor that I perceive to be my point of departure.

In an attempt to aid in the demystification of science's authority and view
it simply as yet another form of social-reality construction, I desire to explore the
accidental instances of "chance" and indeterminacy. I place emphasis on these
conditions, or absence of condition, because it is at these occurrences of edges
that our conventional methods of rational explanation are forced into uneasy
elasticity in order to fully reconcile with our perceptions of a pre-existing reality.
This elasticity sometimes asks us to accept things we do not fully comprehend
thus inducing the act of faith. At such intersections, where the realms of the
rational overlap those of the angelic, exists chance. By acknowledging the
angelic or irrational, the founding assumptions of science become questionable
as objective truths and the line that distinguishes the rational from the faithful
becomes blurred. Measuring coastlines and tracing aurora are actions of
demarcation that attest to the problem of drawing such divisional lines. The
"blur" is much more authentic than complete clarity.

Although this investigation is not an original venture [in the good sense], I
agree with Nietzsche when he states, "Truth is an illusion, that we have forgotten
is an illusion," and contend that I am justifiable in the pursuit of science's further
de-mystification. The manners by which chance and indeterminacy manifest
themselves in the architectural design process will be used to elaborate this
illusion. However, this thesis is bound by the act of circumscribing as opposed
to inscribing as a design approach. That is you can never talk chance. You can only talk about chance. Chance includes but never is. It can never be created, only realized in hindsight. Therefore any such ventures into its realm are blind and are always walking counter and/or multi-directional. The possibility of stumbling is thus greatly amplified.

The buildable manifestation of these ideas will assume the forms of a Trauma Center Annex to Herman Hospital here in Houston, Texas. This "structure for the victims of accidents" will, by necessity of its function, contain spaces where the rational procedures of medicine co-exist with the practice of prayer. This inherent duality mandates an indeterminate or "fuzzy" building and such will be my goal.

The initial step in the design process involves construction of the proper tools for analysis. The method of manufacturing these tools will be governed by reasonable "laws" composed of metaphorical, allegorical, and scientific texts which are not of my own creation. In turn, these texts will then be used in the act of circumscription. Hopefully, by permitting continual shifts of context, a provision for "slippage" in the Duchampian sense, will be provided and chance will be invited. After the initial tools have been secured, they can then be used to build a factual fiction, or work of architecture. It should be noted however that much of the emphasis will be devoted to the act of building as opposed to the building itself. It is not that the physical building is unimportant, it is exactly the opposite. The work will only be as good as the tools used to make it. Therefore, the construction of the initial tools will be of primary importance and it is only after their premise is accepted that building form will begin to evolve. Accident
and slippage will also be encouraged in the design, drawing, and re-reading of the building itself. However, because I do not know exactly how the manifestation will occur, this being a direct outcome of the process, it is impossible to enumerate the expectations at this moment. But, with the help of a few "angels" and precious little logic, I am confident that an ethical and critical construct will emerge.
On a roof I saw large sturdy hooks placed halfway up. Suppose someone falls from a rooftop...couldn't he maybe catch hold of one of those hooks with an arm or a leg? If I fell from a rooftop, I'd plummet to the ground. But if a hook was there, I'd come to a stop halfway down!

Just a little later I might say to myself: "Once an architect planned this hook, and without it I'd be dead. I should be dead, but I'm not at all in fact, I'm alive. A hook was put there."

I understand now - picturing the momentum of falling - that there's nothing in this world unless it meets up with a Hook.

GEORGES BATAILLE
IF SCIENCE IS NOT TO DEGENERATE INTO A MEDLEY OF AD HOC HYPOTHESES, IT MUST BECOME PHILOSOPHICAL AND MUST ENTER UPON A THOROUGH CRITICISM OF ITS OWN FOUNDATIONS.¹

The emergence of modern science in the sixteenth and seventeenth centuries suggested a new mentality based on a changing view of the world derived from the structure of scientific thought. An historical understanding of this mentality is essential for comprehending the profound impact of technology on the modern era. Guided by the development of scientific reasoning, the imaginative contents of man's epistemological context was greatly altered. Within the field of architecture, a fundamental restructuring of traditional understanding occurred. Of major importance was the change in attitude towards the making of objects. This implied a redefinition of the structure of approach and a precise re-evaluation of the specific techniques involved in production.

Prior to the rise of modern science, technical skill constituted the means by which man created artifacts from natural products. Technique was symbolically understood as the connector between nature and man. In determining the physical materialization of the man-made reality, technique simultaneously addressed the realm of mythical thought as well. It incorporated

the physical with the metaphysical by uniting the material existence of things with the sphere of meta-physical thought. As history evolved, an increasingly rational view of how things operated rose to dominate science, philosophy, and human action in general. Technique became primarily understood as a body of knowledge that was increasingly divorced from its mythical origin. It came to be viewed as a science which formed an overall framework for the understanding of technical matters.

The rapid development of technological achievement and scientific determinism placed technique as the connector between physical reality and the rational structure of scientific thought. In this link between science and technology lies the radical transformation of human reason itself. This new science was considered in essence, technological. Technique became the neutral tool for carrying the task of the scientific work. In the field of architecture, this new "tool" strongly affected the techniques of making. Technology became primarily determined by the understanding of technique as a system of methods and procedure, conceptually ordered and rationally invested. Technique as skill was subordinated to the structure of scientific thought; science and technique became considered inseparable entities. This development affected the specific methods of the building process as well as the products of architecture in their expression as built form. As the gradual development of modern science had its effect on the specific techniques of building production, a new approach to the question of form consequently resulted, allowing the underlying meaning of the scientific program to be symbolically depicted. The scientific search for truthful and natural conditions as applied to the production of artifacts, offered a meaningful base for the creation of man-made objects. This search contained
an a priori stipulation of the essence of the object and therefore of objective truth. Such questions involve the metaphysical justification of man's material world, attempting an understanding and conception of the physical structure of his environment.

MATERIAL AND MAGICAL TECHNIQUE

Technical activity in the general sense has been considered one of the earliest expressions of human existence. There are techniques of hunting, fishing, food gathering, the fabrication of weapons, the manufacturing of clothing, and the construction of shelter or building. Historically, technique preceded science. As described by Lewis Mumford in his book *Technics and Civilization*, early human history was marked by the integration of technique in daily life. Technique existed as tradition as was constituted by the transmission of inherited processes that slowly develop through repeated experience and empiricism. This concrete notion of technique has been called material technique, the technique of homo faber: man the maker. But there is also another pre-scientific understanding of technique evolving along another path of "a more or less spiritual order," that is, the notion of technique as magic. Magic is defined as the art of producing a desired result through the use of various processes assuring control of the supernatural and the mystical forces of nature. "Magic displays all the characteristics of technique" in operating as a mediator between man and the "higher powers," just as material technique mediates

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between man and the environment. Through technique, man is able to utilize to his benefit powers which are perceived to be alien or hostile; thus, man establishes a situation of balance between humankind and nature.

"...CHARACTERISTICS OF MATERIAL TECHNIQUE CORRESPOND TO THE CHARACTERISTICS OF MAGICAL TECHNIQUE. THERE, ALSO, MAN IS IN CONFLICT WITH EXTERNAL FORCES, WITH THE WORLD OF MYSTERY, SPIRITUAL POWERS, AND MYSTICAL CURRENTS."\(^5\)

Man, according to Ellul, attempts to tame spiritual forces through the intervention of magical technique; by virtue of magical formulae man mediates his condition of being with what is perceived to be hostile to his state of existence.

The material and magical aspects of technique, although based on similar characteristics, incorporate different aspects for understanding man's system of thought and action. Magical technique is based on imagination emphasizing mystical symbolism whereas material technique operates on rationality oriented towards technical "know-how." Both knowledge based on imagination as well as knowledge derived from reason as deduced from experience are of significance for understanding the early beginnings of science and technology. The gradual developments from magic to science, "empiricism" to "systematic experimentalism," "alchemy" to "chemistry," and "astrology" to "astronomy," were indicative of the fundamental changes within man's system of knowledge.\(^6\) This

\(^{4}\text{Ibid., p.24.}\)
\(^{5}\text{Ibid., p.25}\)
\(^{6}\text{Thomsonke, Lynn, The History of Magic and Experimental Science, (New York: Columbia University Press, 1923-58). In an eight volume work, Thomsonke discusses the importance of many techniques of magical and alchemical practices for the developement of technology and}

phase in history coincides with the transition from the culture of the Middle Ages through the Renaissance to the Age of Reason.⁷

_The aim of magic is to recall natural philosophy from the vanity of speculations to the importance of experiments. Alchemy aims at separating and extracting the heterogeneous elements latent and implicit in natural substances, purifying what is polluted, releasing what is obstructed and bringing to maturation the unripe._⁸

This view was shared by other writers of the time such as Corlelius Agrippa and G.B. Della Porta who placed magical technique within the field of natural science. Agrippa stated that the so-called miracles of magic are not, like the miracles of saints, a violation of natural laws but instead are the results of developing natural powers. G.B. Della Porta valued the practical nature of magical operations as the ultimate manifestation of natural philosophy.⁹ It was in this modification of the inherent meaning of magical technique that historically the procedures of modern science were gradually introduced, with a loss in imaginative forces.

The fantastic and mystical element of imaginary thought, although removed from the magical tradition, remained intact in fables, legends, and above all, in religious belief. The disregard of the mystical component of thought from technical considerations meant the elimination of a significant aspect of experimental science. For the specific reference in the text see Mumford, "The Road Through Magic," TECHNICS AND CIVILIZATION, op. cit., p.39.

⁷Brownowskl, Jacob, MAGIC SCIENCE AND CIVILIZATION,(New York,Columbia University Press, 1978),pp19-37. The first phase of this development from magic to science as a transition from black magic to white magic is described in this publication.


⁹Rossi,P., op. cit.,p.19.
human existence from science and technology. Imagination had always acted as the bridge that united fantasy with early technology. Recalling for instance, man's dream of flying, one of the fantastic human desires, one has to consider the power that such a vision had for those who technically attempted to engage in the enterprise. On the one hand are the stories of Daedalus, the flying carpet, and the legend of Wieland, the German smith who made clothes of feathers. On the other hand we have the undertaking to realize human flight with technical means, such as Leonardo da Vinci's attempts to reproduce the motion of bird's wings. Da Vinci's sketches show various forms of aeronautical machinery such as helicopter models and measuring devices for determining the lifting capacity of wings. Those investigations indicate the strong impact the vision of human flight had on technical development anticipating the achievements of modern science.

THE SCIENCE OF IMAGINATION

With the gradual development of modern science from the seventeenth to the nineteenth centuries, human thought and action became increasingly dominated by rational constructs. The power of rational determination evolved to such an extent that the mind created its own reality of the world corresponds to the structure of the human mind. Consequently, reality as perceived by man could be understood as construct of the human imagination. The question was raised by David Hume in his Enquiring Concerning Human Understanding as to whether the rational propositions of modern science were not to be considered pure results of arbitrary and imaginary thinking. Hume accepted the fact that science in general is knowledge as founded on the relation of cause and effect.
He was of the conviction that the human mind could never possibly find the effect in a supposed cause, even when proceeding by accurate examination. It follows, according to Hume, that the human mind must invent or imagine some event which it ascribes to the cause as its effect. He wrote:

*In a word, then, every effect is a distinct event from its cause. It could not, therefore, be discovered in the cause, and the first invention or conception of it, a priori, must be entirely arbitrary.*

If, according to Hume, the definitions of scientific propositions can be considered arbitrary, it follows that science as a totally rational endeavor is impossible except in the sense of establishing "entirely arbitrary" connections. Scientific thought in this regard, when not directly based on experience, must be founded in the realm of pure imagination.

The concept of modern science, viewed from such a vantage point, offered the possibility for reconsidering the spiritual and symbolic aspect of technique in order to incorporate the notion of the irrational and mythical moment of human understanding. Giambattista Vico (1668-1744), at the beginning of the eighteenth century, was one of the first Western philosophers to speak up for the primordial knowledge that stemmed not from reason but from imagination. Western philosophical thought was dominated by reason with thought processes grounded on the idea of reason coming to terms with the concreteness of perceived experience. Vico broke with that tradition and proposed for science the reconciliation between rational structure and mythical constructs which lie in human imagination. Vico assigned what he called *fantasia* to the imagination which played a primary role in the act of making

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wherein the meaning of things is created through poetic thought.\textsuperscript{11} Imagination, according to Vico, is the power of understanding something from the inner perspective of its existence and is inherent within the poetic act which holds human thought and action together. Technique in this sense, was considered to unify the poetic component of mystical thought with the structure of rational thought therefore embodying the rational-irrational moment of making.

In Vico's \textit{Science of Imagination}, Donald Varene views Vico's propositions in juxtaposition to traditional philosophy.\textsuperscript{12} While not founded on the concept of reason, Vichian philosophy stands outside the Western tradition of thought and proposes other foundations for human understanding:

\begin{quote}
It begins instead with the imagination, with fantasia, as an original and independent power of mind. In Vico's thought, images are not images of something; they are themselves manifestations of original power of spirit which gives fundamental form to mind and life. Images or universal fantastici are not, in Vico's terms, simply concepts in poetic cloaks. The image is not to be understood in relation to the concept. The image is to be understood on its own terms.\textsuperscript{13}
\end{quote}


\textsuperscript{12}According to Varene, Western philosophy developed along two major traditions of thought. The foremost tradition was dominated by the notion of reason. Rational thought constituted the means by which philosophy could come to terms with the concreteness of experience. He writes that Plato's problem with poetic imagery and Aristotle's concern to conceive man as rational, are each in its own way, evidence that conceptual reasoning as supported by rational thought was a predominant concern of Western philosophy. This philosophical tradition constituted the philosophy of des Geistes, the philosophy of mind. The second tradition within Western thought directed its interest towards the question of Being and substituted the philosophy des Geistes with a philosophy of des Lebens, of life and existence. Vico, according to Verene, stands outside both Western traditions; his propositions proceed neither from the notion of Geist nor from the concept of Leben; instead, Verene writes, Vichian philosophy offers another possibility of understanding. See Varene, Donald Phillip, \textit{VICO'S SCIENCE OF IMAGINATION}, (Ithaca, New York: Cornell University Press, 1981), pp.32-33.

\textsuperscript{13}ibid., p.33.
The importance of imagery, of metaphor, and of symbolic meaning in
Vichian philosophy is best expressed in the frontispiece to Vico's *New
Science* [see cover photo.]
\(^{14}\) The world is here represented not as a system of
magnitudes and geometrical order but as a field of relationships between images
of symbolic quality. God appears in the sky as an eye within a triangle,
reflecting his vision onto the breast of a female figure symbolizing the science of
metaphysics. She stands on a globe representing the world of nature.
Illuminated by a ray reflected from her breast is a statue of Homer, the first poet
of Western tradition, surrounded by various man-made objects of the world of
human civilization. The frontispiece depicts itself as an origin alluding to the
images, metaphors, and symbols of the philosophical oeuvre.
\(^{15}\)

According to Vico, the certainties of the human world are 'made' in human
action; what is made is known and intelligible to the maker and therefore is true
to him. The identity and convertibility of the true and the made is stated in Vico's
verum-factum principle. The term fact has its etymological origins in the Latin
word facere, meaning to make or do. Man as the maker of the human world,
according to Vico, is the knower of it, and has a science of it truth.
\(^{16}\) Vico developed a theory of knowledge according to which man knows, or has a

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\(^{14}\) Vico, Giambattista, *The New Science of Giambattista Vico*, unabridged translation of the third

\(^{15}\) For further descriptions of the frontispiece see Vico, G., "Explanation of the Picture Placed as
Frontispiece to serve as Introduction to the Work," in *The New Science*, Ibid., p.3.

\(^{16}\) Fisch, "Introduction." The New Science of Giambattista Vico, op cit., p. xxx. The verum-
factum principle, according to Max Fisch, is based within Vichian philosophy on the medieval
doctrine of God the maker, the creator of the world. Human truth is made comprehensible in
relation to divine making. The is in internal relationship to what it makes, to the product of its
creation, namely nature. Man on the other hand can only stand in external relationship to divine
creation; his world is based on the images of his truths, those of his imagination. To his making
man develops an internal relation in his attempt to approximate the truth of his activity with the
divine.
science of, only what he himself makes and conceives. Science of nature in the strict sense, is reserved for God, who made it. But science of the human world is possible for man because he has made it and its principles or causes "are therefore to be found within the modifications of our own human mind."17 Man, in his ability to know through the act of making, must therefore master his technique for making the world. To be proficient at making means to know how to make it, and 'know-how' is technical knowledge.

Science means 'to know', knowing is to make, and making embodies truth. This sequence of identities is placed within Vico's fantasia which constitutes the element of poetic thought in the act of creation. As the source of imaginary thought, fantasia forms the base for knowledge and scientific thought, for technique and human making. Herein lies the key to Vico's New Science: the act of making, man's attempt to create his world, derives its essence, and its symbolic and meaningful base from the poetic element of imaginary thought. For example, Vico describes the founders of civilization and the human world as poets in the Greek sense of the word, as makers or creators:

In such fashion the first men of the gentile nations, children of nascent mankind, created things according to their own ideas. But this creation was infinitely different from that of God. For God, in his purest intelligence, knows things, and, by knowing them, creates them; but they, in their most robust ignorance, did it by virtue of a wholly corporeal imagination. And because it was quite corporeal, they did it with marvelous sublimity; a sublimity such and so great that it excessively perturbed the very persons who by imagining did the creating, for which they were called 'poets,' which is Greek for 'creators.'18

18Ibid., p.117.
Man's faculty to create and produce within Vichian philosophy originates from his ability to recall the metaphors of his imagination. Historically those were rooted in fables, myths, and fantastic creations of the mind. Vico saw a primary base of educational value in imagination and memory. He argued that an early training in logic was unnatural; instead education must address the sensibilities, feelings, metaphors, and memories upon which human culture was founded. Reason could then develop on the foundations of imagination, allowing a fruitful interaction between the mythical sphere and rational structure. Vico believed that conceptual reasoning as understood in modern science could only develop on the foundations of imaginative thought. Descarte's philosophy for instance, required a base founded on imagination. In vico's view the ingenuity Descartes sought in his fourfold method of truth presupposed the ingenuity of the mind trained in metaphor to produce the grounds on which such a conceptual process could take place.\(^\text{19}\)

Modern science failed to maintain its bonds to the origins of imaginative thought. It became purely conceptual. Similar was the development of technology; the emphasis on rationality in scientific thought became the primary characteristic for technical understanding. Rationality, best exemplified in systematization, division of labor, creation of standards, and production norms, led to the reduction of method to its logical dimension alone, excluding spontaneity, creativity, and imagination. Every intervention of technique became in effect a reduction of facts and principles to the schema of logic.

Technological order in the modern era, following the premises set by the Cartesian model of mind, was functionalized, reduced to efficient procedures, and totally devoid of poetic meaning. Descartes' method was taken as a prescription for a step-by-step organization of thought and action.

The development of contemporary life can be thought of as consulting the progressive transformation of Descartes' four-step formula for thought into formulas for the organization of action. It is widely felt today that the process of technological ordering, as with the techniques of production in architecture, does not address the question of meaning. Rather it seems that all aspects of life are increasingly turned into procedures. Through a process of selection of most efficient means, technique becomes the guiding factor in determining every aspect of life; all human activity is ordered into patterns and prescribed processes. With every new structuring of technical means there occurs a heightened sense of improvement and a widening sense of further applications. Herein lies the implied meaning of contemporary technical production.

Technology must re-address the imaginative content of creative production. Within architecture, the act of making should go beyond the understanding as a purely operational necessity by which to satisfy functional requirements. The process of making should open for the production of architecture the creative and imaginative possibilities of the technical means involved in building construction. This reorientation is not to be based on a nostalgic recreation of past techniques but instead must address the poetic structure of contemporary building methods. These are to be exploited in their own terms, that is by understanding the qualities inherent within the techniques
which are invested in the act of making. The maker must begin modestly with actions which he understands; what he makes must be intelligible to him. He requires knowledge of technique in order to conceive of all possibilities necessary to his means of production. Within the understanding of the instruments, methods, and processes of technical undertaking lies the source of poetic meaning. It is our task to discover the poetic component of technical matters in order to conceive of a meaningful architecture. The structure of conceptual reasoning, which determines contemporary technology, is not to be rejected, but needs to be exposed to imaginative thought. Since imagination constitutes the power to understand things from the inner perspective of their existence, it has the potential to disclose the poetic moment inherent within things and their process of coming to being. Imagination reveals the spiritual and symbolic aspects of technique in a poetic act, that of making.

I EXPECT NO LESS THAN THIS IN THE CONSTRUCTION OF AN ARCHITECTURE.
Bottles on my father's shelf hold some power over me. I am fascinated by the smoke curls that drift across their shiny surfaces. I am frustrated because I can't roll up into those wicked shadows. I want to join their ranks but they stood firmly as a mass, unbeckoning. They react as a group. In their conformity an ugly insensitivity is accentuated. Looking to see what is sustained there in, I find a challenge which is less restrained, yet somber still. I try to turn their voluptuous bellies inside out to enter the Proustian world within. There is something clever about that darkness holding more than this moment in time. Perhaps it is a collage of past and future images, a superimposition that might reveal the fragility of my existence. But because I am infinitely larger than the specks of dust who celebrate a dance of time, I can only strain and pretend to join them.

In the first bottle I see a window is contained. The mysteries of the abysmal world through these panes I will never see. And yet I feel my presence in that dark room. A face I do not know is forced upon me there. The ambiguity of the experience simply holds me there. Like a thousand other moments I have seen in paintings and photographs, detachment becomes part of the pain of belonging. One's surroundings don't always answer back. Familiarity is denied. Nothing is understood in touch. Shafts of light strips are frayed. There are shells of consciousness accepting a desperate cubist imagination. There is warmth in this terror because death and life are one.

Her on my father's shelf I think I have found that underlying rhythm which unites the separate bodies who wait at a bus stop with tombstones. For the moment at least, I treasure the precarious rape of identity. I succumb to the humble power.

CHRISTINE PEMBERTON, 1988

Burlington Institute for the Criminally Insane.
In our culture, the notions of science, rationality, objectivity, and truth are not separate entities but are instead, ideas whose meanings have assembled into a more complicated whole. Science is thought of as being built on "hard," "objective" truth. [Truth equating to reality.] A good example of this occurs when humanists philosophers, theologians, critics and historians expressed constant worry over whether or not they were being "scientific" in their conclusions and whether their arguments, regardless of [in]exactitude were worthy of the term "true." Currently, we tend to identify seeking "objective truth" with the act of using reason. Therefore the national sciences become paradigms of rationality. We also think of rationality as a matter of following incremental procedures that have been mapped well in advance of our journey. So we tend to use "methodical," "rational," "scientific," and "objective" as interchangeable concepts.

'Worries about cognitive status and objectivity are characteristic of a secularized culture in which the scientist replaces the priest.'1 The scientist is now seen as the person who keeps humanity in touch with something beyond itself. As the universe became depersonalized, beauty and moral goodness came to be understood as "subjective." So truth is now thought of as the only point at which human beings are responsible to something nonhuman. A commitment to rationality and method is thought to be a recognition of this

responsibility. The scientist becomes a moral exemplar, who selfishly expresses himself repeatedly to the hardness of fact.

One result of this way of thinking is that any academic discipline which desires universal respect but is unable to offer the predictions and technology provided by the natural sciences, must either pretend to imitate science or find someway of obtaining a type of "cognitive status" minus the necessity of discovering facts. Practitioners of these disciplines must either align themselves with the quasi-priestly order by using terms like "behavioral sciences" or else find something other than facts to be concerned with. People in the humanities typically choose the second option. They either articulate themselves as concerned with "value" as opposed to facts, or as developing and embodying habits of "critical reflection."

However, neither action is satisfactory. No matter how much humanists talk about "objective values." the phrase always sounds a little clouded. It admits objective on one hand and couples it with the word value on the other. The distinction between objective and the subjective was designed to parallel that between fact and value, so an objective value seems a bit like the mythological winged horse. Discussion about the humanists' special skill at critical reflection doesn't seem to fare much better. I do not believe that philosophers or literary critics are better at critical thinking or at assuming broad all encompassing views of things, than theoretical physicists or microbiologists. Nor do I think most of society believes this. As a result, society tends to ignore both kinds of rhetoric. It treats the humanities as being on the same level as the arts, and thinks of both as providing pleasure rather than truth. Both are, to be
sure, thought of as providing "high" rather than "low" pleasures. But an elevated and spiritual kind of pleasure is still a long way from the grasps of a truth.

These distinctions between hard facts and soft values, truth and pleasure, and objectivity and subjectivity are awkward instruments. They are not suited to dividing up culture; They create more difficulties than they resolve. It would be best to find another vocabulary, to start anew. But in order to do so we first have to find a new way of describing the natural sciences. It is not a question of downgrading or dismissing the natural scientist, but simply of no longer seeing him as a priest. We need to stop thinking of science as the place where the human mind confronts the world, and of the scientist as exhibiting proper humility in the face of superhuman forces. We need a way of explaining why scientist are, and deserve to be, moral exemplars which does not depend on a distinction between objective fact and something much more dubious.

To get such a way of thinking, we can begin by distinguishing two senses of the term "rationality." In one sense, the one that has already been mentioned, to be rational is to be methodical: that is, to have criteria for success laid down in advance. We think of poets and painters as using some faculty other than reason in their work because, by their own confession, they are not sure of what they want to do before they have done it. They construct new standards of achievement as the work progresses. By contrast, we think of judges as knowing in advance what criteria a brief will have to satisfy in order to invoke a favorable decision, and of business people as setting well defined goals and being judged by their success in achieving them. Law and business are good examples of rationality, but the scientist, knowing in advance what would count
as disconfirming his hypothesis and prepared to abandon that hypothesis as a result of the unfavorable outcome of a single experiment, seems to be a truly heroic example. Furthermore, we seem to have clear criterion for the success of a scientific theory - namely, its ability to predict, and thereby enable us to control some portion of the world. If to be rational means to be able to lay down criteria in advance, then it is plausible to take natural science as the paradigm of rationality.

The trouble is that in this sense of "rational" the humanities are never going to qualify as rational activities. If the humanities are concerned with ends rather than means, then there is no way to evaluate their success in terms of antecedently specified criteria. If we already knew what criteria it was we wanted to satisfy, we would not worry about whether we were pursuing the right ends. If we thought we knew the goal of culture and society in advance, we would have no use for the humanities and would become a totalitarian society. It is characteristic of democratic and pluralistic societies to continually redefine their goals. But if to be rational means to satisfy criteria, then this process of redefinition is bound to be nonrational. So if the humanities are to be viewed as rational activities, rationality will have to be thought of as something other than the satisfaction of criteria which are discernable in advance.

Another meaning for "rational" is available. In this case, the word means something like "sane" or "reasonable" rather than "methodical." It names a set of moral virtues: tolerance, respect for the opinions of those around you, willingness to listen, reliance on persuasion rather than force. These are the virtues which members of a civilized society must possess if the society is to
endure. In this sense of "rational," the word means something more like "civilized" rather than "methodical." When viewed in this light, the distinction between the rational and the irrational has nothing to do with the difference between the arts and the sciences. Using this construction, to be rational is simply to discuss any subject - religious, literary, or scientific - in a way which eschews dogmatism, defensiveness, and righteous indignation.

There is no problem about whether, in this latter, weaker, sense, the humanities are "rational disciplines." Usually the humanists display the moral virtues in question. Not always, but then sometimes scientists don't either. Yet these moral virtues are felt to be not enough. Both humanists and the public desire rationality in the first, stronger sense of the term: a sense which is associated with objective truth, correspondence to reality, and method, and criteria.

WE SHOULD NOT TRY TO SATISFY THIS DESIRE BUT RATHER, ERADICATE IT!
Regardless of one's opinion of the secularization of a culture, it was a mistake to try to make the natural scientist into a new sort of priest, a link between the human and nonhuman. So was the idea that some sorts of truths are "objective" whereas others are merely "subjective" or "relative" - the attempt to divide up the set of true sentences into "genuine knowledge" and "mere opinion," or into the "factual" and "judgmental." So was the idea that the scientists has a special method which, if only the humanists would apply it to the ultimate values, would give us the same kind of self confidence about moral ends as we now have about technological means. I suggest that we content ourselves with the second, "weaker" conception of rationality, and avoid the first, "stronger"
conception. We should avoid the idea that there is a special virtue in knowing in advance what criteria you are going to satisfy, in having standards by which to measure progress.

One can make these issues somewhat more concrete by taking up the controversy among philosophers about the "rationality of science." For some twenty years, ever since the publication of Thomas Kuhn's book *The Structure of Scientific Revolutions*, philosophers have been debating whether or not science is rational. Attacks on Kuhn for being an "irrationalist" have been as frequent and as urgent as were, in the thirties and forties, attacks on the logical positivist for saying that moral judgements were "meaningless." We are constantly being warned of the danger of "relativism," which will beset us if we give up our attachment to objectivity, and to the idea of rationality as obedience to criteria.

Whereas Kuhn's enemies routinely accuse him of reducing science to "mob psychology," and pride themselves on having [by a new theory of meaning, or reference, or verisimilitude] vindicated the "rationality of science," his pragmatist friends routinely congratulate him on having softened the distinction between science and nonscience. It is fairly easy to show that the enemies are attacking a man of straw. But it is much more difficult for him to save himself from those that agree with him. For he has said that "there is no theory independent way to reconstruct phrases like 'really there.'"2 He has asked whether it really helps "to imagine that there is some one full, objective, true account of nature and that the proper measure of scientific achievement is the extent to which it brings us closer to that ultimate goal."3 Pragmatists quote

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3Ibid., p. 171,
these passages incessantly in the course of claiming Kuhn to be in their campaign to drop the objective-subjective distinction altogether.

What is called pragmatism might also be called "left-wing Kuhnianism." It is also sometimes called the "new fuzziness" because it is an attempt to blur just those distinctions between the objective and the subjective and between fact and value from which the critical conception of rationality has developed. The "fuzzies" would like to substitute the idea of "unforced agreement" for that of "objectivity."

To say that unforced agreement is enough raises the specter of relativism. For those who say that a pragmatic view of rationality is unwholesomely relativistic pose the question: "Unforced agreement among whom? Us? Any arbitrary culture or group?" The answer is "us." This necessarily ethnocentric response simply states that we must work by our own lights. Beliefs suggested by another culture must be tested by attempting to weave them together with beliefs we already have. On the other hand, we can always enlarge the scope of "us" by regarding other people, or cultures, as members of the same community of enquiry as ourselves - by treating them as part of the group among whom unforced agreement is to be sought. What we cannot do is rise above all human communities, actual and possible. We cannot find a skyhook which lifts us out of mere coherence - mere agreement - to something like "correspondence with reality as it is in itself."

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4Rorty, p.38.
* NOTE: The architect Peter Eisenman often uses such concepts in the design process and like Kuhn, attempts to maintain a "weak" relationship to his work.
One reason that dropping this later notion strikes many people as "relativistic" is that it denies the necessity that inquiry should someday converge to a single point - that Truth is "out there," up in front of us, waiting for us to reach it. Kant and Hegel would disagree. This latter image seems to pragmatists as an unfortunate attempt to carry a religious view of the world over in to an increasingly secular culture. All that is worth preserving of the claim that rational inquiry will converge to a single point is the claim that we must be able to explain why past false views were held in the past, and thus explain how to go about reeducating our ancestors. To say that we think we are headed in the right direction is just to say, with Kuhn, that we can, by hindsight, tell the story of the past as a story of progress.

But the fact that we can trace such a direction and tell such a story does not mean that we have moved any closer to the "goal" that is waiting for us. We cannot imagine a moment at which the human race could settle back and say, "Now that we've finally arrived at the Truth, we can relax." We should cherish the thought that the sciences as well as the arts will always provide a spectacle of fierce competition between alternative theories, movements, and schools. The end of human activity is not rest, but rather richer and better human activity.

Another way of characterizing this line of thought is to say that pragmatists would like to drop the idea that human beings are responsible to a nonhuman power. We hope for a culture in which questions about the "objectivity of value" or the "rationality of science" would seem equally unintelligible. Pragmatists would like to replace the desire for objectivity - the desire to be in touch with a reality which is more than some community with
which we identify ourselves - with the desire for solidarity with that community. They think that the habits of relying on persuasion rather than force, of respect for the opinions of colleagues, of curiosity and eagerness for new data and ideas, are the *only* virtues which scientists have. They do not think that there is an intellectual virtue called "rationality" over and above these moral virtues.

On this view there is no reason to praise scientists for being more "objective" or "logical" or "methodical" or "devoted to truth" than other people. But there is plenty of reason to praise the institutions they have developed and within which they work, and to use these as models for the rest of culture. For these institutions give concreteness and detail to the idea of "unforced agreement" Reference to such institutions fleshes out the idea of a "free and open encounter" - the sort of encounter in which truth cannot fail to win. THIS IS THE CHANCE CONDITION - a free and open encounter. With this view, to say that the=ruth will win in such an encounter is not to make a metaphysical claim about the connection between human reason and the nature of things. It is merely to say that the best way to find out what to believe is to listen to as many suggestions and arguments that you can.

My rejection of traditional notions of rationality can be summed up by saying that the only sense in which science is exemplary is that it is a model of human solidarity. We should think of the institutions and practices which make up various scientific communities as providing suggestions about the way in which the rest of culture might organize itself. When we say that our legislatures are "unrepresentative" or "dominated by special interests," or that the art worked is dominated by "fashion," we are contrasting these areas of culture with areas
which seem to be in better order. The natural sciences strike us as being such areas. But, with this view, we shall not explain this better order by thinking of the scientist as having a "method" which the rest of us will do well to imitate, not as benefiting from the desirable hardness of their subjects compared with the undesirable softness of other subjects. If we say that sociology or literary criticism "is not a science," we shall mean merely that the amount of agreement among sociologists or literary critics on what counts as significant work, work which needs following up, is less than among, say, microbiologists.

Pragmatists will not attempt to explain this later phenomenon by saying that societies or literary texts are more nebulous than molecules, or that the human sciences cannot be as "value-free" as the natural sciences, or that the sociologists and critics have not yet found their paradigms. Nor will they assume that "a science" is necessarily something that we want sociology to be. One consequence of their view is the suggestion that perhaps "the human sciences" should look quite different than the natural sciences. This suggestion is not based on epistemological or metaphysical considerations which show that inquiry into societies must be different from inquiry into things. Instead, it is based on the observation that natural scientists are interested primarily in predicting and controlling the behavior of things, and that prediction and control may not be what we want from our sociologists, literary critics and architects.

Despite the encouragement he has given it, however, Kuhn draws back from this pragmatists position. He does so when he asks for an explanation of "why science works." The request for such an explanation binds him together with his opponents and separates him from his leftwing friends. Anti-Kuhnians
tend to unite in support of the claim that "merely psychological or sociological reasons" will not explain why natural science is so good at predicting. Kuhn joins them when he says that he shares "Hume's itch" - the desire for "an explanation of the viability of the whole language game that involves "induction" and underpins the form of life we live."  

Pragmatists think that one will suffer from Hume's itch only if one has been scratching oneself with what has sometimes been called "Hume's fork" - the distinction between "relations of ideas" and "matters of fact." This distinction survives in contemporary philosophy as the distinction between "questions of language" and "questions of fact." Pragmatist think that philosophers of language such as Wittgenstein, Quine, Goodman, Davidson, and others have shown us how to get along without these distinctions. Once one has lived without them for a while, one learns to live without those between knowledge and opinion, or between subjective and objective, as well. The purposes served by the latter distinctions come to be served by the unproblematic sociological distinction between areas in which unforced agreement is relatively infrequent and areas in which it is relatively frequent. So they do not itch for an explanation of the success of recent Western science any more than for the success of Western politics. That is why the fuzzies applaud Kuhn when he says that "one does not know what a person who denies the rationality of learning from experience is trying to say," but are startled when he continues to ask the question of why "we have nonrational alternatives to learning from experience."  

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6Ibid., pp.569-70.
On the pragmatists view, the contrast between "relations of ideas" and "matters of fact" is a special case of the bad seventeenth century contrasts between being "in us" and being "out there," between subject and object, between our beliefs and what those beliefs [moral, scientific, theological, etc.] are trying to get right. Pragmatists avoid the latter contrast by instead comparing our belief with proposed alternative beliefs. They recommend that we worry only about the choice between two hypotheses, rather than about whether there is something which "makes" either true. To take this stance would rid us of questions about the objectivity of value, the rationality of science, and the causes of the viability of our language games. All such theoretical questions would be replaced with practical questions about whether we ought keep our present values, theories, and practices or try to replace them with others. Given such a replacement, there would be nothing to be responsible to except ourselves.

This may sound like fantasy, but the pragmatist regards it as an alternative account of the nature of intellectual and moral responsibility. He is suggesting that instead of invoking anything like the idea-fact, of language-fact, or mind-world, or subject-object distinctions to explicate our intuition that there is something out there to be responsible to, we just drop that intuition. We should drop it in favor of the thought that we might be better than we presently are - in the sense of being better scientific theorists, of citizens, or friends. The backup for this intuition would be the actual of imagined existence of other human beings who were already better [utopian fantasies or actual experiences]. On this account, to be responsible is a matter of "contrite fallibilism" rather than of respect for something beyond. The desire for "objectivity" comes down to a
desire to acquire beliefs which will eventually receive unforced agreement in the course of a free and open encounter with people holding other beliefs.

Pragmatists interpret the goal of inquiry in any sphere of culture, as the attainment of an appropriate mixture of unforced agreement with tolerant disagreement [where what counts as appropriate is determined, within that sphere, by trial and error]. Such a reinterpretation of our sense of responsibility would, if carried through, gradually make unintelligible the subject-object model of inquiry, the child-parent model of moral obligation, and the correspondence theory of truth. A world in which those models, and that theory, no longer had any intuitive appeal would be a pragmatist's paradise.

When Dewey urged that we try to create such a paradise, he was said to be irresponsible. For, it was said, he left us bereft of weapons to use against our enemies; he gave us nothing with which to "answer the Nazis." When new "fuzzies" attempt to revive Dewey's rejection of criteriology, they are said to be "relativistic." They must, people say, believe that every coherent view is as good as every other, because we have no "outside" touchstone for choice among such views. They are said to leave the general public defenseless against the witch doctor, the defender of creationism, or anyone else who is clever and patient enough to deduce a consistent and wide ranging set of theorems from his "alternative first principles."

Nobody is convinced when the fuzzies say that they can be just as morally indignant as the next philosopher. They are suspected of being contritely fallibilist when their is a call for righteous fury. Even when they
actually display appropriate emotions, they get nowhere, for they are told they have no right to such emotions. When they suggest that one of the few things we know [or need to know] about truth is that when it wins in a free and open encounter, they are told that "true" has been defined as "satisfies the standards of our community." But I do not believe the pragmatist hold such a relativist view. They do not infer from "there is no way to step outside communities to a neutral standpoint" that "there is no rational way to justify liberal communities over totalitarian communities." That interference involves simply the notion of rationality as a set of ahistorical principles which pragmatists reject. What pragmatists infer is that there is no way to beat totalitarians in argument by appealing to shared common premises, and no point in pretending that a common human nature makes the totalitarians unconsciously hold such premises.

The claim that the fuzzies have no right to be furious at moral evil, no right to commend their views as true unless they simultaneously refute themselves by claiming that there are objects out there which make those views true, begs all theoretical questions. However, it does get right to the heart of the matter. This is the question of whether notions like "unforced agreement" and "free and open encounter" - descriptions of social situations - can take the place in our moral lives of notions like "the world," "the will of God," "the moral law," "what our beliefs are trying to represent accurately," and "what makes our beliefs true." All the philosophical presuppositions which make Hume's fork seem inevitable, are ways of suggesting that human communities must justify their existence by striving to attain a nonhuman goal. To suggest that we can forget about Hume's fork, forget about being responsible to what is "out there," is to
suggest that human communities can only justify their existence by comparisons with other actual and possible human communities.

To make the contrast a bit more concrete, ask whether free and open encounters, and the kind of community which permits and encourages such encounters, are for the sake of truth and goodness, or whether "the quest for truth and goodness" is simply the quest for that kind of community. Is the sort of community which is exemplified by groups of scientific inquiries and by democratic political institutions a means to an end, or is the formation of such communities the only goal we need? Dewey thought that it was the only goal we needed, and I tend to believe that he was right. But whether he was or not, this question is where the debates about Kuhn's "irrationalism" and the new fuzzies' "relativism" must eventually arrive.

Dewey was accuse of blowing up the optimism and flexibility of a parochial way of life [American] into a philosophical system. So he did, but his reply was that any philosophical system is going to be an attempt to express the ideas of some community's way of life. He was quite ready to admit that the virtue of his philosophy was, indeed, nothing more that the virtue of the way of life which it commended. On this view, philosophy does not justify affiliation with a community in the light of something ahistorical called "reason" of transcultural principles." It simply expatiates on the special advantages of that community over other communities.

What would it be like to be less fuzzy than this? It would be to become less genial, tolerant, open-minded, and fallibilist than we presently are. In the
nontrivial since of ethnocentric, the since in which we congratulate ourselves on
being less ethnocentric now than our ancestors were three hundred years ago,
the way to avoid ethnocentricism is precisely to abandon the sort of thing the
relativists are accused of abandoning. It is to have only the most tenuous and
cursory formulations of criteria for changing our beliefs, only the loosest and
most flexible standards. Suppose that for the last three hundred years we had
been using an explicit algorithm for determining just how a society was, and how
good a physical theory was. Would we have developed either parliamentary
democracy or relative physics? Suppose that we had the set of "weapons"
against the fascists of which Dewey was said to deprive us - firm, unrevisable,
moral principles which were not merely "ours" but "universal" and "objective."
How could we avoid having these weapons turn in our hands and destroy all of
the tolerance from our own heads?

Imagine, to use a second example, that in a few years, you open the
paper and read that philosophers, in an assembled convention, have
unanimously agreed that values are objective, science is rational, truth is a
matter of correspondence to reality, and so on. Recent breakthroughs in
semantics and meta-ethics, have caused the last of the noncognitivist in ethics
to retreat. Similar breakthroughs in the philosophy of science have lead Kuhn to
give up his claim that there is no theory-in3pendent way to reconstruct "really
there" statements. All of Rorty's fuzzies have repudiated their former views. By
way of making amends for the intellectual confusion which the philosophical
profession has recently caused, the philosophers have adopted a short set of
standards for morality and rationality. The following year, the convention is
expected to adopt the report of the committee charged with formulating a standard of aesthetic taste.

Most assuredly, the public reaction to this news would not be "Saved!" but rather "who on earth do these philosophers think they are?" It is one of the best things about intellectual life we Western liberals lead that this would be our reaction. Regardless of how much we moan about the disorder and confusion of the current scene, we would not have things any other way. What prevents us from relaxing and enjoying the condition is perhaps no more than cultural lag, the fact that the rhetoric of the Enlightenment praised the emerging natural sciences in a vocabulary which was left over from a less liberal and tolerant era. This rhetoric enshrined all the old philosophical oppositions between mind and world, appearance and reality, subject and object, truth and pleasure. Dewey thought that it was the continued prevalence of such oppositions which prevented us from seeing that modern science was a new and promising invention, a way of life which had not existed before and which ought to be encouraged and imitated, something which required a new rhetoric rather than justification by an old one.

Suppose that Dewey was right about this, and eventually we learn to find the fuzziness which results from breaking down such oppositions spiritually comforting rather than morally offensive. What would the rhetoric of the culture, and in particular of the humanities, sound like? Presumably it would be more Kuhnian, in the sense that it would mention particular concrete achievement - paradigms - more, and "method" less. There would be less talk about rigor and more about originality. The image of the great scientist would not be that of
someone who got it right but of somebody who made it new. The new rhetoric would draw more on the vocabulary of socialist politics, and less on that of Greek metaphysics, religious morality, or Enlightenment scientism. A scientist would rely on a sense of solidarity with the rest of the profession, rather than an image of himself as battling through the veils of illusion, guided by the light of reason.

If all this happened, the term "science," and thus the oppositions between the humanities, the arts, and the sciences, might gradually fade away. On "science" was deprived of an honorific sense, we might not need it for taxonomy. We might feel no more need for a term which groups together paleontology, physics, anthropology, and psychology than we do for one which groups together engineering, law, social work, and medicine. The people now called "scientists" would no longer think of themselves as members of a quasi-priestly order, nor would the public think of themselves as in the care of such an order.

In this situation, the humanities would no longer think of themselves as such, nor would they share a common rhetoric. Each of the disciplines which now fall under the humanities label, would worry as little about its method or cognitive status as do mathematics, civil engineering, and sculpture. It would worry as little about its philosophical foundations. For terms which denote disciplines would not be thought to divide "subject-matters," chunks of the world which had interfaces with each other. Rather, they would be thought to denote communities whose boundaries were as fluid as the interests of their members. In this heyday of the relativist, there would be as little reason to be self conscious about the nature and status of one discipline as, in the ideal
democratic community, about the nature and status of one's race or sex. For one's ultimate loyalty would be to the larger community which permitted and encouraged this kind of freedom. This community would serve no higher end than its own preservation and self-improvement, the preservation and enhancement of civilization. It would identify rationality with that effort, rather than with the desire for objectivity. So it would feel no need for a foundation more solid than reciprocal loyalty.

I EXPECT NO LESS THAN THIS IN THE CONSTRUCTION OF AN ARCHITECTURE.
Every morning starts with a moment of truth, an instant of terror. You can't separate left-over dreams from reality. A life waits to be resumed. Empty clothes on the backs of chairs attest to that. But whose life is this and how did it get to the point where it was to be broken off yesterday, and does the muddle of sensations in bed, gradually cohering into a person, fit whatever fragment of the world that might be outside the window?

PETER CONRAD
Although everything in the physical world seems to change quickly enough, everything physical is stable in comparison with the absolute insanity of images in the mind. They cannot be retained unchanged for an instant, nor recalled at any subsequent time. This absolute flux of mental images is annoying in life and melancholy in reflection. There are instincts, and ideals and intelligible truths which make a background for that flux of sensibility, as the moon and stars make a background for the drifting clouds. The moon and stars move also, but not so quickly, nor at the rate we may attribute to them by an optical illusion, when we but half see them behind moving veils. But just because we and our interests endure, we lament the lapse of those vivid perceptions which have been the filling of our lives, the material, as it were, of our being. With survive them with a certain sense of emptiness and futility, as if we were surviving ourselves. For the very reason that the higher functions of the human mind have some kinship with the eternal [and the abstract superstructure of thought and expression can endure], we are disconcerted to find that the rest is gone

GEORGE SANTAYANA, 1912

In the last one hundred years, despite nostalgic attempts to resurrect such tasks, architecture seems to have completely lost any connection with building as a mediator between man and nature, or as a ritualistic representation of human society, and has become instead a rationalized engine of change itself. Architecture is tending towards a situation in which it will no longer merely control or contain modernization, but will be modernization, or rather, its projection. The question may then be asked: if this identification is about to be achieved, has architecture not lost its autonomy and purpose? Is there such a thing as architecture anymore? Is there an alternative definition of architecture?
Central to a discussion of these questions is the realization that architecture has had a choice, at least since the late nineteenth century, of confronting this situation, or avoiding it. This dilemma similarly exists in the social sphere. Although this choice was originally defined by the question of the ownership of the means of production, it is now becoming clear that the central issue is one of empowerment: who controls modernization itself? The role of architecture has been to contain, perpetuate in physical form, and thus conceal such control. Can architecture instead work towards the atomization of such control, thus helping to change the nature of modernization itself? To do so, it must first neither control, contain nor conceal, but represent the "beast" that is modernization in its fullest form. Ironically, it must first fulfill the project of the modern, and, in so doing, turn it into a visible artifact that can then be critically altered by its users, inhabitants, and respondents.

In 1893, Chicago asked for the first time the question whether or not the American people knew where they were headed. On reflecting under the shadow of Richard Hunt's architecture of the 1893 World Columbian Exposition, Henry Adams decide that the American people probably knew no more than he did: but that they may still be drifting unconsciously toward some point in thought, as their solar system was said to be drifting towards some point in space: and that possibly, if relations enough could be observed, this point might be fixed. Chicago was the first expression of American thought as being unified: one must start there.¹

What Adams saw was a unified image of American culture in a condition of modernization using the medium of architecture. The World's Columbian Exposition was not meant to mirror or represent American society at large, but to express one version of it from the fixed perspective of those in control. As Alan Trachtenberg has described in his essay "White City," the exhibition was meant literally to build the notion of the manifest destiny of American Industrial society.

The new world of freedom and untold possibilities had to be controlled - scale, familiar forms, rhythms and hierarchys - by an agreed upon civil authority. This culture control was married to progressive and rational politics, education, and other values by which the ruling class of late nineteenth and early twentieth century justified itself and its control. What could not be controlled was exiled: exiled from architecture, culture, and the center of the fair. Beyond the peristyle was that which was to be operated upon, the new and chaotic nature to be conquered and subdued by technology, and covered with culture. But the Midway was the place of complete freedom, where the masses could cavort. It was the place of chaos, non-linearity, technology, and of endless, diffused, and instantaneous possibilities. The structures that resided here were not bound by the standards of decency and "architecture." Ironically, it was also the place of complete clarity. At the center of the midway one could board the Ferris Wheel and rise up over the entire construct of the fair to put into context the whole of the layout. At the base of this "wheel of escape," Eadweard Muybridge exhibited his time-lapse photography, a prototype of the cinema that brought objects and scenes of far away places and times to all, not just the privileged few. Inherent

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in those photographs was a quest to eradicate "angels," "the scientific mystery of" or the "blur" if you will [In his case, the blur was the mystery of movement.] It is from here, the center of chaos, the place of potential complete clarity that the fuzziness of architecture begins.

All of us have had the experience of picking up an envelope of photographs from the Fotomat or drugstore, examining the pictures one by one, and declaring, "This one is great, it's so clear," or "We can throw this one out. So-and-so moved, it's too blurry." In terms of art photography, these same standards are applied: the work most cherished by the public at large is that by photographers such as Jacques-Henri Lartigue and Henri Cartier-Bresson, who magically discovered and froze the "decisive moment" so that we can contemplate the unrepeatable "event"; or that by photographers who have championed clarity of vision and largely avoided moving subjects altogether, among them Alfred Stieglitz, Edward Weston, and Ansel Adams. While both types of photographers have radically different approaches and working methods, both believe that the world has an underlying order awaiting discovery, an order that can be structured in sharp and concise visual terms.

Why is it that Western culture, particularly American culture, has prized this clarity of vision? Today, the concept of good photography is virtually synonymous with sharp focus. Blurred and out-of-focus images, however, are as inherent to the medium as those which are crisp, clear, and instantaneous. Therefore, one must separate how the medium is typically used from what it is capable of.
In etymological terms, the word *blur* has two general senses. One, going back to the early seventeenth century, connotes "a smear which partially obscures," or, in later usage, "an indistinct appearance." But by the middle of the sixteenth century, blur had also taken on strong moralistic connotations: "a stain which mars moral or ideal purity, a blemish; an aspersion on character," or, in its verb form, "to stain, sully, blot the purity or truth of anything; to disfigure, befoul, defile, asperse."\(^4\) To one nineteenth-century critic, for example, commenting on blur and the photographing of waves at the seashore, "The exposure was not sufficiently instantaneous. . . . Their outlines are a little blurred and softened. Perhaps a cap with a trigger might have remedied this evil."\(^5\) Hence, blur, from its early conception as an indistinct appearance and an obstacle to truth to its nineteenth-century association with movement in photograph, has had negative associations which continue to qualify our thinking about photography today.

The notion that a photograph should be sharp is also related to the convention of one-point perspective with which the camera sees. From the time of its development in fifteenth-century Italian painting, one-point perspective was a means of achieving an exact imitation of mature. This involved the depiction of a single point of view at a single moment or, as the painter John Constable later put it, "one brief moment caught from fleeting time, a lasting, sober existence."\(^6\)

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As is painting, so is photography: instantaneity - the precise rendering of a moment in time- was the bearer of truth.

But observers of the first photographic images, while they marveled endlessly at the plethora of recorded visual facts, were also greatly disappointed to find that "nature in motion cannot reproduce herself." In early daguerreotypes and calotypes, which required long, multi-minute exposures, what should have been busy city views appeared as pictures of ghost towns, for the photographic materials were not sufficiently light sensitive to capture the movement of street traffic. In other images, subjects that remained still for part of the exposure and then moved-frequently, babies and animals - disconcertingly appeared to be strange disembodied apparitions known as "ghost images". Such accidental actions created disturbing effects; for example, one viewer noted in 1839 that, "two coach-horses were standing by the curb, one unfortunately moved his head during the short operation; the animal is headless." Imperfect results of this sort led photographers to devalue and hence avoid making blurred and ghost images. Thus, from photography's inception, inventors and entrepreneurs were challenged to freeze movement by making so-called instantaneous photographs, so that the medium would more accurately reflect "nature herself."

The inventors of photography, such as William Henry Fox Talbot, saw life as transient and photography as a means to triumph over time itself. "The most transitory of things, a shadow, the proverbial emblem of all that is fleeting and momentary . . . may be fixed forever in the position which it seemed only

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8Ibid.
destined for a single instant to occupy.\textsuperscript{9} While it is clear that Talbot and others held the fixing of a moment and permanence to be desirable, they did not take it for granted (as we do today). They seemed to understand such photographs to be abstractions of time - monuments to time's fugitiveness.\textsuperscript{10}

Throughout the nineteenth century, innumerable accidental blurred and ghost images were made. However, relatively few survive from the 1840s and 1850s, photography's earliest decades; the majority were no doubt purposely destroyed as defective. Many others were retouched to eliminate the offending movement. Occasionally a photographer brazenly made a blurred or ghost image the center of visual attention, as in Charles Megre's early attempts at motion studies in his market scenes at the Hotel de Ville, Paris and Edouard-Denis Baldus's Pont de la Mulatiere and Travaux de Massonerie d'un Pont. These works, however, survive as curiosities and as anticipations of photographic feats yet to come.\textsuperscript{11}

Photography reflected the ambivalence of the time in which it was invented. As a student of the Victorian era wrote: "To think it strange that the


\textsuperscript{11}In Gustave Le Gray's album \textit{Souvenir du Camp de Chalons au General Montebello} (1857) in the Bibliothèque Nationale, Paris, for example, there is an image of a soldier holding a wine bottle, in which his face, arms, and the bottle itself were retouched to disguise the movement. Le Gray also used retouching to delineate clearly horses and a dog on the foreground of other photographs. It is interesting to compare these to Le Gray's pictures that show figures moving in the distant background. Such ghostly figures may have been considered picturesque because of the way they blend into the haze and dust of the remote landscape.

Whether a photographer kept of destroyed a seemingly abberant image probably depended on what he thought was the main subject of the picture. Negre, for example, was interested in movement itself, while Baldus was documenting the Chemin du Fer du Nord and thus may have considered a ghost image to be beside the point.
great age of optimism was also an age of anxiety is to overlook the ambivalent reaction which the main social and intellectual tendencies of the period provoked. Expanding business, the growth of democracy, and the decline of Christianity were sources of distress as well as satisfaction."\(^\text{12}\)

Victorian society may have spurned blurred images because they evoked, on some level, the unsettling turmoil associated with the Industrial Revolution; nineteenth-century viewers and photographers alike preferred the medium's capacity for depicting clearly delineated information, for it offered comforting evidence of technological progress. Even though "ghost images" had the potential to capture the contradictory forces of motion and stability, to suggest "the process of change itself," they also suggested the limitations of nineteenth-century technology and, consequently, the limitations of human control over the economic, social, cultural, and physical environment. Hence, they were disparaged as imperfections, and photography was used largely to confirm the seemingly timeless facts of the visible world.\(^\text{13}\)

Oddly enough, during the second half of the nineteenth century the number of ghost images seems to have increased rather than decreased. This is especially remarkable considering that the speed of photographic lenses and plates had greatly improved, thus making instantaneous pictures easier to achieve. The increase may be explained in part by a lowering of standards, as


\(^{13}\)Blurred and ghost images caused optimism for some, in that they seemed to offer proof of an enduring, transcendent, metaphysical, and spiritual realm. Beginning in the 1860's a popular craze commonly known as "spirit photography," arose. This phenomenon made use of ghost images to offer supposed proof of a spirit world; see for example, Fred Getting, Ghosts in Photographs: The Extraordinary Story of Spirit Photography (New York: Harmony Books, 1978),
more and more entrepreneurs joined the ranks, or it may have been that the desire to capture a particular subject or personal or historical import—such as a Civil War scene—was more important than the flaws that might have resulted.

While photographers did not enthusiastically embrace the use of such apparitions in their images, there were a number who used blurred and ghost images to aesthetic advantage. Julia Margaret Cameron, as one contemporary reviewer noted, was "the first person to see that her mistakes were her success." In her portraits and allegories, Cameron employed a variety of accidental effects, often created because she did not use the headrest required during that period to keep sitters still. Consequently, movement was inevitable, since her subjects, children and adults alike, considered the long sittings to be torturous. "Mrs. Cameron was so obsessed by the spiritual equality of her pictures," photographic historian Helmut Gernsheim has pointed out, "that she paid too little attention to whether the image was sharp or not, whether the sitter had moved, or whether the plate was covered with blemishes." Regardless of whether they began as mistakes or as part of her absentminded disregard for quality, it is obvious that in the long run Cameron found her results to be acceptable. Most significant perhaps is the question she asked her friend the renowned scientist, Sir John Herschel in 1866, a year after she began photographing: "WHAT IS FOCUS - AND WHO HAS THE RIGHT TO SAY WHAT IS LEGITIMATE FOCUS?"

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15 Ibid., p.70.
16 Ibid.
In Alphonse Liebert's Hotel de Ville Incendie, a dramatic image which may have been a singular accident, the photographer seems to have considered blur aesthetically acceptable. This picture, with its flitting and transparent congregation of spectators examining the aftermath of a conflagration, is an appropriate visual metaphor for the destruction wrought by the Federalists during their Bloody Week attacks against the Paris Commune. The stirring, gloomy, ill-defined figures suggest the frightening, frequent upheavals during this period of war and internal political strife. The fact that this image was the first in a presentation album of one hundred views that documented the attacks and was assembled possibly by the photographer himself indicates that the picture, ghost images and all, was regarded as a legitimate and perhaps even a desirable representation of this devastating event.17

Eugene Atget, who began photographing at the turn of the century and is known for his detailed documentation of Paris and its environs, used a view camera and tripod as well as a lens and plates that required long exposures. As photographic historian Beaumont Newhall has observed, his "technical approach was, therefore, that of the nineteenth century and, looking at his prints, it is often hard to believe that he did most of his work after 1900."18 Of the thousands of images Atget produced, a number depict the city's inhabitants as blurs. He normally photographed early in the morning to avoid busy street, and the people in most of his photographs seem consciously posed. Atget was probably not interested in ghost images for their own sake. However, in those cases where moving figures were difficult to avoid, particularly in markets or in shots taken

later in the day, he used the consequent apparitions in a haunting, evocative manner. Atget was poignantly aware of the destruction of Old Paris and a way of life that was disappearing forever. While the storefronts, buildings, and monuments in his images mutely represent the charm of Old Paris and the portraits tell of those who inhabited the city, the ghost images whisper of the transitional process itself.

Despite the aesthetic or metaphysical value of these "accidents," the major thrust by photographic innovators was toward sharp instantaneity. In the United States, Eadweard Muybridge was the photographer who did the most to realize the dream of instantaneity. In 1872 he first achieved recognition for his motion photographs, which proved that a horse at full gallop had all four hooves off the ground at a certain point during its stride. By the time he published his exhaustive study Animal Locomotion (1887), he had made as many as 30,000 negatives, using a battery of between twelve and twenty-four cameras with shutter, a clockwork timing mechanism which could vary the interval between exposures, and new high-speed dry plates. Muybridge's photographs were step-by-step visual analyses of motion; one segment of movement was recorded in each separate frame, a system that emphasized the incremental aspect of time. Although he demonstrated that these images could recreate motion through the zoopraziscope—a primitive forerunner of the motion picture projector—the images themselves were isolated freezes in time.

In considering Muybridge's reductivist method of photographing motion, the logical conclusion to draw is that the briefer the moment captured, the closer

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one is to securing and serving the truth. But if this were truly the case, the mid-
twentieth-century stroboscopic photographs by such experimenters as Harold
Edgerton, which halt, for example, a speeding bullet would reveal the greatest
truth. While an instantaneous photograph does provide information that would
otherwise be invisible to the naked eye, such an image bears only a partial truth-
for we do not typically experience time in a stroboscopic succession of stop-
action flashes; nor as if we had lost our glasses, that is, as a series of blurry,
shifting states. Thus, while instantaneous photographs give us the illusion that
time is comprehensible, time exposures yielding a continuum of motion suggest
that time is mysterious and beyond comprehension.

The French physiologist Etienne-Jules Marey, Muybridge's contemporary,
produced photographic studies that suggested a synthesis of movement rather
than an analysis of it. Whereas Muybridge made separate exposures on a
number of plates, Marcey's "chronophotographs" are multiple exposures of a
figure in motion on a single plate. This approach to photographing movement
was taken up the American painter Thomas Eakins as well. It seems that Eakins
and Muybridge together experimented with the photographic gun Marey used to
produce these multiple-exposure plates; Muybridge, however, turned back to his
one-camera-one-image method, while Eakins pursued Marcy's technique.

Eakin's studies of a man walking show the body in motion to be a series
of overlapping, indistinct, and semitransparent forms ineffably appearing from
and disappearing into the darkness. Such images reveal consecutive phase-by-
phase movement but also allude to the continuity of action. They suggest
contradiction and limitation. Contradiction in the sense that instantaneous
images are completely still and thus do not imply movement; while in long time exposures a subject loses all clarity and definition. Limitation in that the attempt to grasp the meaning of time and space in visual terms through the optics, mechanics, and chemistry of photography is ultimately frustrated. In his movement studies Eakins settled for a visual compromise - the figures are frozen, but they also, through the use of multiple ghost images, imply continuous motion.

The idea of continuous motion as an expression of time follows from Henri Bergson's proposition that time cannot be comprehended through abstract means. The French philosopher, writing in the early twentieth century, maintained the, "Real duration is experienced; we learn that time unfolds and, moreover, we are unable to measure it without converting it into space. . . . But it is impossible mentally to spatialize only a part."20 He further conceived of time as "the continuation of what precedes into what follows and the uninterrupted transition, multiplicity without divisibility and succession without separation."21

The purposeful exploitation of continuous movement and blur in photography for aesthetic effect coincided with the development of Cubism and Futurism, just after the turn of the century. Cubism concerned itself with the depicting of simultaneity-showing many different viewpoints of a subject in a single work as if they had been seen at a single moment; in short, a revolt against Renaissance perspective. But the Cubist were as interested in the description of shapes and forms as in the process of movement. The Futurist, on the other hand, were concerned more with the velocity of the Industrial Age.

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21Ibid., p. 44.
itself. As F.T. Marinetti wrote in "The Founding and Manifesto of Futurism" in 1909: "We affirm that the world's magnificence has been enriched by a new beauty: the beauty of speed. . . . We stand on the last promontory of the centuries. . . . Why should we look back, when what we want is to break down the mysterious doors of the Impossible? Time and Space died yesterday. We already live in the absolute, because we have created eternal, omnipresent speed."

The Cubo-Futurist influence on photography is seen in the vortographs of Alvin Langdon Coburn, produced in 1916 and 1917 under the sway of the poet Ezra Pound. Most of Coburn's vortographs - so-called because of their connection to Vorticist art, the English school of Cubo-Futurism-deal with issues of spatial dimensionality and therefore are visually more akin to the formal abstract concerns of Analytical Cubism. However, the multiple portraits of Ezra Pound owe much to Futurist ideas in the way they suggest the shattering of space and time through the relentlessly mesmerizing, seesaw recession and advancement of the nearly expressionless features of the poet's face.

During the early decades of the twentieth century, the four Bragaglia brothers - Anton Giulio, Arturo, Carlo Ludovico, and Alberto - were closely connected with key Futurist artists. Anton Giulio, Arturo, and Carlo Ludovico were photographers, and around 1911 developed a process they termed "photodynamism." The theoretical foundation of photodynamism was probably based on Marcy's experiments as well as on Anton Giulio's intimate familiarity with cinematography and the concept of the persistence of vision-a phenomenon created when the retina of the eye links separate images presented in rapid
succession, thereby creating the illusion of movement. However, in his manifesto "Futurist Photodynamism" (1911), Anton Giulio clearly stated that photodynamism, while it had affinities both with chromophotography and film, was technically and aesthetically different. The Bragaglias aimed at a "reconstruction" of movement itself in an attempt to capture "the intermovemental fractions existing in the passages between seconds." They wanted to overcome the highly restrictive "instantaneous exposure" because it is a "ridiculous and brutal negative element... which has been presented as a great scientific strength when in fact it is a laughable absurdity." In their minds, even the work of Marey, although it "does not use frames to divide movement which is already scanned and broken up into instantaneous shots, still shatter action." Photodynamism was neither photography or film but rather a new medium altogether.

Bragaglia images such as Salutando (1911) are attempts to "enter into" motion itself, unkie earlier accidental words that show the moving figure as an element of a much larger environment. As manifestations of Futurist theory, photodynamic images are concerned with the close-up depiction of fluid motion. In an attempt to deal with movement itself, they study simple activities, such as typing, smoking, sawing, and greeting. Though they show continuous activity, they are not streamlined and uniform but rather irregular currents which depict and "infinite number of minor variations." In their simplicity, photodynamic pictures often resemble chromophotographs; however, the Bragaglias liked the

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23Ibid., p. 44.
24Ibid., p. 39.
25Ibid., p. 42.
distortion that would have been disparaged by photographers such as Marey
and Eakins. "The more the image is distorted, the less real it will be. It will be
more ideal and lyrical, further extracted from its personality and closer to type."\textsuperscript{26}
Photodynamism was not intended as a transcription of an outer reality but as an
expression of an inner one. "We seek the interior essence of things: pure
movement; and we prefer to see everything in motion, since as things are
dematerialized in motion they become idealized, while still retaining, deep down,
a strong skeleton fo truth."\textsuperscript{27}

The Bragaglias' artistic interest differ from Thomas Eakin's concern for the
underlying scientific principles of beauty and art and from Alvin Langdon
Coburn's belief in mystical and symbolic abstraction. Their work, like that of the
other Futurists, had a political dimension. "[The picture] . . . can be obsessed by
the subject to the extent that it energetically invades and obsesses the public
with its own values. It will not exist as a passive object over which an
unconcerned public can take control for its own enjoyment. It will be an active
thing that imposes its own extremely free essence on the public, through this will
not be graspable with the insipid facility common to all images that are too
faithful to ordinary reality."\textsuperscript{28} The Bragaglias' photographs go beyond attacking
established convening for depicting visual reality. Their chaotic, unruly images
are "evidence" that the visual world need not be seen as inviolable. Their work
constitutes a revolt against order, be it aesthetic or, by extension, social,
political, or economic. For it encourages viewers to see the world and human
institutions alike as fluid and mutable.

\textsuperscript{26}ibid., p. 40.
\textsuperscript{27}ibid., p. 44.
\textsuperscript{28}ibid.
I expect no less than this in the construction of an architecture.
"You have demonstrated a very skillful way of designing a building but I think that you will find even more pleasure in the act of constructing the building itself."

ALBERT POPE
WORKS CONSULTED


APPENDICES

Heisenberg Uncertainty Principle
Angelus Occidentalis
Reading Rules
Design Directives for Cardinal Windows
Design Documentation
Juror’s Comments
APPENDIX A
HEISENBERG UNCERTAINTY PRINCIPLE

In 1927, the German physicist M. Heisenberg showed that every description of nature contains some essential and irremovable uncertainty. For example, the more accurately we try to measure the position of a fundamental particle of an electron say, the less certain will we be of its speed. The more accurately we try to measure its speed, the more uncertain we will be of its precise position. Therefore we never predict the future of the particle with complete certainty: because as a matter of fact, we cannot be completely certain of its present.
Angelus Occidentalis: The scientific name for the genus of any number of species of angels found in monotheistic religions [of the West]. For example, Judaism, Zoroastrianism, Christianity and Islam.

NOTE: Eastern religions as a rule, generally have no belief in Angels as revelers of the truth. Instead, reincarnations of holy sages assume this function.

Angel: Originates from a Greek translation of the original Hebrew" mal'akh - "shadow side of God"
-later it came to mean "messenger."

Hierarchy of Angels"

GOD
I. Seraphim - in direct contact with God. They are beings of pure light and thought.
-According to Isaiah, they have six wings and four heads.
-From Hebrew: ser- higher being or guardian agent
 rapha- healer, doctor or surgeon.

Cherubim: Charioteers.
Orphanim or Galgallim: In Jewish lore, they are described as "the great wheels" or "many eyed ones."
-From Hebrew: gagal- wheel or pupil of the eye.
 Chariots.
 [Angels as vehicles in the shape of very large wheels.]

II. Dominations:
 Virtues:
 Powers:

III. Principalities:
 Archangels:
 Angels:

EARTH
Raphael- Angel of Science and Knowledge. He presented Noah with the
BOOK OF THE ANGEL RAZIEL.

BOOK OF THE ANGEL RAZIEL. - This book contains all celestial and earthly
knowledge. There are 1,500 keys to the mysteries of the universe in the
book but they are in a secret writing that even many angels do not
understand.

Raziel gave the book to Adam
Adam passed it to Enoch
Enoch then passed it to Noah who used the Book to find out how he
should build the ark.
The Book disappeared with Solomon
It resurfaced under the authorship of the Eleazer of Worms, a medieval
writer. He claims to have divided the original into several pieces
and spread them among the continents.
The following instructions for reading the initial generative texts were constructed in order to reduce the volume of information contained in each book so as to facilitate chance pieces of each within the time frame of a collegiate semester system.

**SECURING DESIGN DIRECTIVES**

I. Number each book as it is removed from the arrival package beginning with the numbers 1 through 5 and record the number of pages in each.

II. Record the next five numbers that are audible to you regardless of their source and enumerate them from 1 to 5 beginning with the first audible series of digits.

III. Pair book 1 with audible number 1; Book 2 with audible number 2, etc. and determine which sections of each text you will be dealing with.

To determine the usable passages of each book, attempt to "divide" the audible number into the number of pages of the corresponding book following the example below.

Begin counting each digit until the number represented by the group of consecutive digits exceeds the total number of pages in the book and recede one digit. For example:

Using Book One which has 248 pages and the phone number 1-800-252-2900; we begin to count the consecutive digits of the audible number.

<table>
<thead>
<tr>
<th>Digits</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OK</td>
</tr>
<tr>
<td>18</td>
<td>OK</td>
</tr>
<tr>
<td>180</td>
<td>OK</td>
</tr>
<tr>
<td>1800</td>
<td>Wait! The number represented by 1800 exceeds the total number of pages in book One (248) so we recede one digit to return to 180.</td>
</tr>
<tr>
<td>180</td>
<td>Mark this page number in Book one and note the chapter or group of information it is contained in. i.e. Is page 180 part of an index, a chapter heading, a photograph, or a page of a chapter. THE INFORMATION SURROUNDING THIS PAGE NUMBER BECOMES A DESIGN DIRECTIVE.</td>
</tr>
</tbody>
</table>

Continue this procedure until all digits in the audible number have been used.

For example. The next page marking for Book one is as follows:

<table>
<thead>
<tr>
<th>Digits</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>OK</td>
</tr>
</tbody>
</table>
02   OK
025  OK
0252 NOT OK - 0252 exceeds 248 therefore recede one digit and use 025.
025  Mark this page and its neighboring information as above.

The next acceptable numbers, using the same logic are 229 and 00.

IV. Repeat the steps above for each Book/audible number pairing.
V. Enumerate each design directive group beginning with the number 1 within each book.

For Example: Chapter Five of my first found design directive group which includes the page numbered 180, in Book one would be labeled 1:1

The preface which contains the page numbered 25 would be labeled 1:2
The Index which contains page 229 is 1:3
The copyright notice which is on page 00 is labeled 1:4

If our first design directive group in Book two would be labeled: 2:1

READING THE TEXTS

VI. Read and record* each text according to the results of coin tosses as governed in the following example:

Beginning with Design Directive 1:1, record the first sentence. STOP.
The decision to continue recording is governed by the results of a coin toss+

A) Toss the coin. 1) HEADS: Continue recording in the same Directive Group and toss the coin again.
a)HEADS: Record the next available sentence or text entry. STOP. Proceed to step B.
b)TAILS: Skip the next Sentence and move to the first sentence of the next consecutive design directive group within the same text. Toss the coin again.
   Heads: Follow instructions of A,1,a.
   Tails: Follow instructions of A,1,b.

2) TAILS: Move to the first Directive Group of the next consecutive Book and toss the coin again.
   HEADS: Follow instructions of A,1,a.

Mallarme's Azure as seen by Joseph Cornell

* Note: All recording is to be done on standard 8-1/2" x 11" college ruled note paper in the reader's own handwriting. No use of computer word processing is allowed.
+ The preferred coin to toss is a 1966 Mexican brass angel ignot.
TAILS: Follow instructions of A,1,b.

B] If the quantity of the recorded information is greater than 33" in length, return to step A.

If the quantity of the recorded information is 33" or less, STOP. You have completed the reading of the texts and must discard the original books. See the employed architect for further instructions.
"How uncomfortable to leave all those nooks and corners in which I am accustomed to nestle now. My care for nothing. my hotel room, my solitary promenades, my free and easy office with its after dinner and evening rocking chair. A place to sit out on the porch. The world had been sad since Tuesday. Sea and sky were a single ash grey. A travelling carnival arrived with a flying acrobat who buzzed over the crowd several times, but no one pays any attention to him because his wings were not those of an angel but, rather, those of a bat. The owners of the house had no reason to lament. With the money they saved they built a two story mansion with balconies and gardens and high netting so that crabs wouldn't get in during the winter, and with gold bars on the windows so that angels wouldn't get in. There were books, several wheels and so forth that were wound up spastic, like a madman in the street. Just stop! Spotted over the whole country in four different places: were great medallions of the founding fathers. He appeared twice in profile and straight on. All of us are beings. Once he drove up to a luncheonette, parked, opened the door on the curb side carefully arranged. The guest then began the quest up the great hill. Yesterday, curtains of windswept lakes' surfaces beyond second view seen in the mist. A west-urn garden. Water not sand. Six feet four, mind a whirlwind. Green house off the kitchen began falling apart. Irish workmen had carefully put insufficient cement in the mortar. No sooner were the walls up than they began to crumble. The blur of movement can be viewed as evidence of an
implied criticism of nineteenth century notions of faithful replication. For what ultimately became clear in the course of the century was that photography was not the art of describing that its inventors envisioned. Limits mean safety. Ask any tightrope walker in training to deny this. Struggling with eighty pound bed frames inside 100 degree weather. After all the bombs have fallen, we knew quite well when his door was shut not to disturb him. Everyone expected something strange to happen. 'If he does anything upsetting, take him out.' Family saga: The animal appears and he disappears: to reappear in it. So when you see these things arriving, you conclude that the master will soon come. The fast drumming had begun and was audible through the closed door. 'His dance was very very sinuous.' Birds' wings on her head. No one lived for miles around. The only way to reach the beach is to go through the heard of elk."

"Charles Jackson, whose standing as an unimpeachable authority, had suffered from the e[i]ther controversy. The angel was the only one who took no part in his own act. Six, Eight, or Ten in formation, the windows of the house would quiver and rattle. I would sit there at the edge and get lost in the ...'oh, what's the word I'm looking for?' No morning passes without his opening the book. Day begins. There are a few markings. The paper pages have begun to feel like cloth. The state of the servants' house will tell you clearly whether his master has decided to visit. Old brushes aren't thrown away. They become recognized in detail. 'Oh, there you are escalator.' Removed his shoes and
sent them up. Choose any one that you want. Greedy friend took twelve. Instruments for new navigation. Constructing using precious materials, marble, fire wood, bonze, glass. To assemble them he employed Irish craftsmen. Few have ben shown. While it occurred something was known anew about where and how the best in life transpires. Beyond it, he danced on a ledge. The receptive brings about sublime success furthering perseverance. If the supervisor man undertakes something and tries to lead, he goes astray; if he follows, he finds guidance. Quiet perseverance brings good fortune. Dive deep, O mind, dive deep in the ocean. The painting paints itself. Child is born. Our activities are peripheral [we make love; a pregnant mother follows a certain regimen: asked to construct a spine or brain or heart she'd say 'I can't.' The key! The key! Where's the Key to the back door? Third, the floors are swept clean. My reflections on chance are in the margin of thought development. All the same, we can't make them more radical. Descending as far as possible, they pull out the rug from underneath us. It's true, the omnipotence of reason limits luck's power. I should like to leave this labyrinthine world of mental ill health which rules upon the zoological classifications of the 'Readers' Indigestion' and to realize my dream of becoming wealthy in the recognition of my incompatible intellect and, in spite.... All of modern day mathematical calculus is based on a certain principle known as the 'central limit theorem.' And, lots of our technological culture depends on this 'calculus'. Visual evidence shown with vagueness of form expresses the process of becoming and of changing relationships, whatever the intent of the photographer might have been."

-pane III.
"And yet they were men of science. Certain evidence had been presented; they could not deny it. And the opening of the new building in 1846, on Dr. Parkman's land, with its grand spaces, laboratories and dissecting rooms, encouraged him to imagine a new world of instruction: benches crammed with eager diligent, respectful ticket paying students. And the crate was AZURE, Mallarme's azure. A poor woman who since childhood had been counting her heartbeats, and had run out of numbers; a Portuguese man who couldn't sleep because the noise of the stars disturbed him; a sleepwalker who got up at night to undo the order of the stars. The blur in photography is not merely an error, nor is it only evidence of time's passage within things frozen forever; it may also be regarded as a sort of photographic conscience about the machine's relation to artistry. Thinking stops for me, I'm in sunlight. No more worry. Where is the way out except for pincers and branding irons? At least they'd confer legitimacy on my body; which can't in truth, be separated from them. ALLGEBRAH!? You don't say!! What does that mean? O, how fine is the Fohn answer: Allgebrah is Music! Anything visible or invisible to the human eye can be transformed by means of the well educated human mind, good will, hard work and existing, suitable material into music-song-text and that goes from smallest to the biggest object or non-object. How come black eyed susans grow with such profusion about a place stained by sin and crime? The family would come to the cell and place there two friends in coffins that were then placed at an angle so that the blood could run down and they would not be discolored in the least. Harriet too is out to her new house and grounds. I thought the death disgraceful as it was. ...would have deterred her from being seen abroad. It's different to think otherwise. 'Two and two are four,' is a truth that applies to every reality, every possibility! If this is insisted on...there is nothing else to be
discovered in the empty reaches of the universe other than this obvious formula. No artist having an entirely different background paid a visit to the family when they were staying in Ireland. He registered as a conscientious objector. Brick walls reflect the heat of the fire into the room. Laying the fires, taking out the ashes, the house is a chalice that has a lid on it. Who are you and why don't you speak? Why don't you do this to me. The garden is not like the one in Mexico. The reason's this: any one or number of the elements can change into the opposite. I must close the door, for if I leave it open nothing will happen. Head downward. The scientists were very pleased on the end of the gold plated boom."

IV.

"Boston Doric, the usual thing: a lofty pediment, a daunting flight of steps: not a temple but a courthouse. How to make myself spontaneous and free and hope-ful of enjoyment as when a boy. I make say half my evenings, in that view. 'He's an angel,' she told them. The blur of movement can be viewed as evidence of an implied criticism of nineteenth century notions of faithful replication, for what ultimately became clear in the course of the century was that photography was not the act of description its inventors envisioned. In the taverns, they called me 'resurrection man' and said that I had dug up fresh graves." [Michael] "Coffins. I never liked it, having to sell cadavers to the students for dissection at twenty-five dollars a body, but how was I and Caroline to live on the pittance the college gave me? What surprised her most was that his wings were clipped. The jungle around the house was cleared up. He had
removed them all and had stood up in a chair in order to reach the box with the vase pieces. Five strands of golden hair blew taught in the breezes. Well, the fact that it had lain outside the laboratory all week quite unconcealed was surely evidence that until something foreign had been introduced it was quite innocuous. After all, what had it held other than his chemical vessels he used homeward in Cambridge and packed up for his move to Boston. Hadn't someone at Appleton's, the organ builders, mentioned how the doctor had looked when he came to see the work being done for the lunatic asylum? Theories of relativity and flux and chaos infiltrate modern consciousness and popular imagination in the form of theories of logical randomness and poetical instability. Such ideas allow us to confer on photographic mistakes from a previous age of empiricism and positivism, an expression of the speculative dimension. Where does the power of images lie except in the images' capacity to allow us to dream into it? The object of ecstasy is the absence of an outside answer. The inexplicable presence of man is the answer the will gives itself suspended in the void of unknowable Night. This night, through and through, has the shamelessness of a roof hook. A calculated use of words, the negation of poetry, destroys chance and reduces things to what they are. The path to chance is hard to follow. It's threatened by and inseparable from horror and death."
APPENDIX E:
DESIGN DOCUMENTATION

Construction Documents    73
Building Sections         82
Perspectives + Details    90
CONSTRUCTION DOCUMENT: Foundations
Structural Detail [top] and Foundation Detail [bottom]
Foundation Details
Site Sections
West ELEVATION
West ELEVATION with back porch extension
South ELEVATION
SECTION facing South
EAST LOBBY: entry ramp, curtain wall and second floor balcony
NORTH AVIARY with sixth and seventh floor balconies
BOOK OF THE ANGEL RAZIEL [housed in the basement library]
Structural Support for BASEMENT LIBRARY: entry level view.
X-RAY CABINET: Dr. Leary's Office
VICTIM'S VIEW OF AVIARY looking downward from the roof.
BASEMENT and STRUCTURAL FLOORING for levels 1, 2 + 3.
View into the ANNEX LOBBY from a patient's room in Herman Hospital
EAST LOBBY as seen from parking garage portal
Fiberglass ROOF ANCHOR with elevator shaft in background.
Section through ELEVATOR SHAFT with concrete guide column
SPRING loaded WINDOW
private REHABILITATION BALCONIES [6th & 7th floors]
Burn Victim BATHing Area
suspended Outpatient Rooms showing double hulled structural WALL and FLOOR DRAINS
DETAIL: Interior Door
DETAIL: Pediatrics WINDOW SILL: Afternoon, looking west
KEY: side door
FLOOR PLAN: Herman Hospital. as seen from third floor of east annex lobby
DETAIL: 1 of 17 Maple WINDOW SLATS
View of BASEMENT as seen from Main Street sidewalk ventilation grill
LANDINGS: 3rd, 4th, and 5th floors
Victim’s View from operating table: O.R. 1
View from Helipad.
APPENDIX F:
JUROR’S COMMENTS

The following is a sample of jury comments as noted by Leisl Chin.

Neal Skeptical-of rationality of world Structure
CHANCE as a response to God- Truth is and has been dead for
quite some time.

Circumscription rather than inscription.

Trauma Center for Herman Hospital - any reference is fair game.

Mark Wamble. The texts are collapsed boxes?
Neal Yes, but there are four cardinal windows for the five boxed texts.

Peter Waldman You gave up trying to specify these documents and went to the
third dimension. Ultimately, Building is a rational thing. Perhaps
there are a few truths. Perhaps all is true as opposed to nothing is
true.

Albert Pope This is about fair game.
The last drawing is the emptiest.
In fact the drawings are almost irrelevant. They are not as
confident in philosophical intent as your boxes are. Architecturally
can you speak about your boxes more?

Bill Sherman The drawings are readable though. We as architects can "read"
and translate these independent of you now that we know the
code.

The code -invention of the author- allows for two ways of
involvement: a forced involvement ,thus denying the possibility of
architecture or that of chance involvement. You need to leap back
towards architecture through yourself. You are denying yourself on
one and projecting yourself on the other.

How do you translate the model? Is it a scale model?

Mark Wamble This brings up the question of representation and what is the best
way to do this. I think this is perhaps the correct way to convey
these ideas. We see football pumps, thread, and screws but that's
not what they are. we're over that,
Peter Waldman: The minute you begin to describe the back porch and the lobby, you have the building. I think it just changing the scale. maybe a sliding scale and building it. It's here.

Just have an inventory of the parts.

Albert Pope: You have demonstrated a very skillful way of designing a building but I think that you will find even more pleasure in the act of constructing the building itself.