

The Alchemist's Tort: A Series of Doubtful Investigations

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INTRODUCTION

The rapidly developing globalization of the world in recent years has precipitated entirely new sets of relationships. These involve cultural, economic, social as well as technologically driven multi-disciplinary conditions. The increasing role of computer technologies together with the Internet provide immediate world-wide accessibility. Consequently, as Fritjof Capra has argued in both *The Tao of Physics* as well as his subsequent publication, *The Turning Point*, a paradigm shift is occurring—one based on previous notions of knowledge as building, to that of knowledge as network. Capra notes that previous periods and cultures have traditionally seen knowledge and its acquisition through the metaphor of building, particularly in the sciences.¹ No longer seen, however as something which has a solid foundation, knowledge may be perceived through a continuous shifting set of relationships forming networks.

Overlapping this shifting paradigm is the notion of contradiction, even doubt, beginning as early as Aristotle.² Descartes' use of doubt to establish his observation *cogito, ergo sum* is well known. More recently Terence Riley observed the necessity for doubt as the basis for discovery.³ The search can be serendipitous and like the grotesque, be constantly in motion encouraging interpretation and translation.⁴

The question then, is how to structure inquiries in architecture and the academy that are based on the notion of shifting paradigms, metaphor and doubt? The focus of our design studio was based on these assumptions and involved the relationship of elements that occur simultaneously. For this upper year theoretical design studio, we used a metaphor of alchemy. Starting with the assumption that architecture is comprised of aspects of evolution and transformation and are constantly in a state of flux. Furthermore, through transition and recombination of substances it is possible to locate elements that create a dichotomy of relationships at their intersections. The collision of these aspects can give birth to concepts of architecture.

The metaphor of alchemy initiated a studio that could be primarily reflective and speculative. It encouraged the open-ended investigation suggestive of the medieval alchemists. Although experimenting with chemical reactions to turn base metal into gold, the process was instead an opportunity to speculate, to find allusions by observing the smoke patterns appearing in their torts. Inherent to designing architecture is the ability to define what we are describing and prescribing. This requires the 'definition of a thing'. The definition is the place to start to question the approach of that 'thing', since all architecture is definition through

the making. John William Miller writes; "A static definition is neither experimentally nor logically possible."⁵ Thus, the studio's pedagogical premise was a search for meaning in the making and experiencing. Although we used the metaphor of alchemy to structure the studio, we assigned various exercises to start the students thought processes and to ensure the recombination and connection throughout the process.

Our pedagogical approach, when preparing the initial assignments, was an analogy similar to chemistry, where the short projects could initiate a chemical reaction, a transmutation of elements. This analogy also requires a catalyst to re-figure the molecular structure. Thus, the comparisons with chemistry, alchemy and genetic biology became vehicles for a reaction: a series of interconnections. Rather than a typical studio that poses a problem to be "solved" by the students individually with architectural form and space, we approached this studio as a chain of events that both transformed and multiplied. The search was the goal and each project was the impetus for what followed. The projects were seen as a continuous thread, one builds on the ones before it, blending the concepts of the former with the latter. The students were paired and re-paired to infect concepts similar to genetic parentage. To find meaning the students were to consider the various components that comprise the architectural statement that can be brought into a holistic framework: design process, program, systems, structures and materials of construction. We wanted students in this upper year theoretical studio to question scale, beliefs, ethics and basically how to think about architecture as part of tectonic experience.

THE PROJECTS

The first project involved *Kinesthetic Movement*. To elicit a response, the students were to locate a 'found' object that spoke about the kinesthetic experience of their bodies moving through space. They were to find a 'site' in the Graduate School of Architecture Building and present a performance concentrating on the senses of sight, sound and touch. The second project was titled *Kinesthetic Oxymoron*. This project was intended to initiate an exploration of doubt. It was a chance to explore unresolved contradictions, suspensions of judgement or ambiguities as well as 'non-closure'. The students were asked to consider their bodies as an architectonic framework to describe experiences that contained co-existing contradictory elements (physical, mental or spiritual). As a further exploration, the third project, we included the concept of *Self Envelope* as an extension of a physical or virtual envelope,

one that could be likened to the enclosure of architecture. This kind of *self-envelope* could represent a thought as well as an emotionally based prosthesis. The extension was to demonstrate the paradoxical nature of the kinesthetic movement of the body.

One of the first projects, *Kinesthetic Movement*, by Jess Hulse, Eric Thompson and Steve Wunderlich was built as a mechanism for motion.

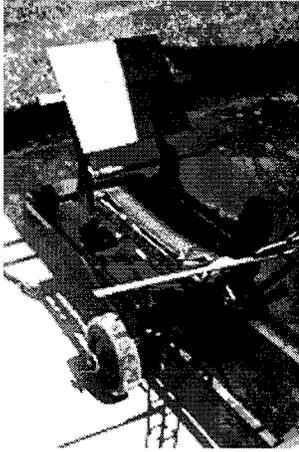


Fig. 1. *The Machine*

The Bonneville Salt Flats located near the Great Salt Lake, known as a speed track, was the catalyst for this project. The mechanism, meant to carry a human body, was hand powered and geared in a way that maximum human exertion translated to very slow motion. The students made a windshield consisting of a video of lights and kinetics that helped disorient the sense of speed as paradox along with the emotional envelope of motion.

In another first project, *Kinesthetic Movement*, by Brett Kearney, the body's movements in space were explored utilizing video images.



Fig. 2. *The Body*

Initially only body movements were tracked. Later (in the *Kinesthetic Oxymoron* project), however, linear "stick extensions," much in the manner of Oskar Schlemmer's work at the Bauhaus, were introduced by Brett in an attempt to explore notions of prosthesis – extensions beyond the body that could explore and express those "effects" of which the body is incapable. Later, Brett and Peter Meuzelaar introduced mechanical devices that transformed the students' body movements through mechanical levers (*Self Envelope* project), much like a piano's keys, together with sounds.⁶

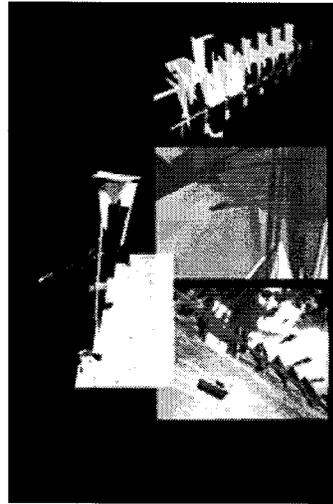


Fig. 3. *Mechanical Levers*

Collectively the mechanical levers and the sounds as mechanistic devices utilized a kind of alchemy – dual responses to the body that produced another reading through the concept of "kinesthetic."

In the fourth project, *Genetic Fusion*, we asked the students to consider transformations through negotiation. This process entailed the fusing of two ideas to formulate a child. In her essay "Interactive Evolutionary Algorithms in Design," Jeanine Graf observes that the existence of the phenotype and the genotype are basic concepts for biological evolution that ultimately fuse in forming a new being.⁷ Furthermore there is the necessity for an interactive relationship to exist in order for selection, survival, and reproduction to occur. This analogy to genetic reproduction explores the parents with all of their individual characteristics capable of producing an offspring child with DNA in new combinations – a reflection of each with recombined traits. In this pairing process, the students were asked to select an envelope partner, taking into account the contradictory aspects of the pairings. They were to model the offspring as a tectonic child/embryo, considering how an infant both assimilates information from the outside as well as conveys its own internal characteristics. Again, the pairings were a pedagogical technique to ensure infusion of foreign elements that would make the students rethink and transform their concepts.

Four students, Liza Hart, Jeffery Farnum, Solim Gasparik and Steve Wunderlich, merged their genetics (*Genetic Fusion* project) to construct a fabric wall they titled the "Veiling and Unveiling."

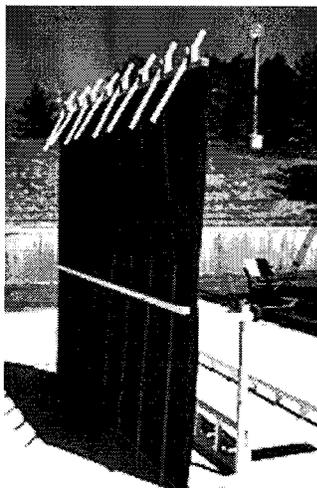


Fig. 4. *Veiling and Unveiling*

The conceptual point of departure for the project was the consideration of states of dress and undress and their relation to eroticism. These students reached the conclusion that it is the state of flux between the veiled and the unveiled that is erotic. They sought to express this eroticism in an architectural installation. They considered aspects of ephemeral architecture, and how perceptions can be interpreted as solid dissolves into void. This layering of fabric constantly captures glimpses of sky, ground and people. The translucency of layering expressed their experiential extension and provided the animation of a kinesthetic envelope. The state of transition created liminal qualities. Interestingly, the genetic history of the project could be traced through the genealogy of the class. In the re-pairing Steve brought with him the motion and perceptual kinesthetics from the paradoxical vehicle, *Kinesthetic Movement* project. Liza brought an element of wrapped fabric from the kinesthetic envelope, the *Self-envelope* project, and Solim, working earlier on a zoetrope, *Kinesthetic Movement* project, with Steve Randall, instigated issues of perceptual motion. Together they merged the projects to produce not a piece of each but a new transmutation that brought about new substances at their intersections.

The final project was not prescribed, instead we asked the students to make additional pairings and further explorations in a self-initiated project, *Independent Explorations*. Evidence of such mergers was found in the work of Brett Kearney and Pete Meuzelaar, two students who previously explored kinesthetic transformations in their *Self-envelope* project. For their final project, (*Independent Explorations*) entitled “Kinesiology,” they attempted to fuse motion with an architectural construct that they located on a precipice.



Fig. 5 Kinesiology

Here the consideration of architecture as an instrument of movement as well as a synchronic construct enabled them to express both literal and implied transmutations within a place of stasis. The project also questioned the ability to adapt, and therefore survive, at least theoretically, within the constraints of a static setting.

Heather and Steve Randall’s project, *Independent Explorations*, titled “Hybrids: Zoetrope and Motion Frame as Envelopes,” was an extension developed from the *Genetic Fusion* and *Kinesthetic Movement* projects.

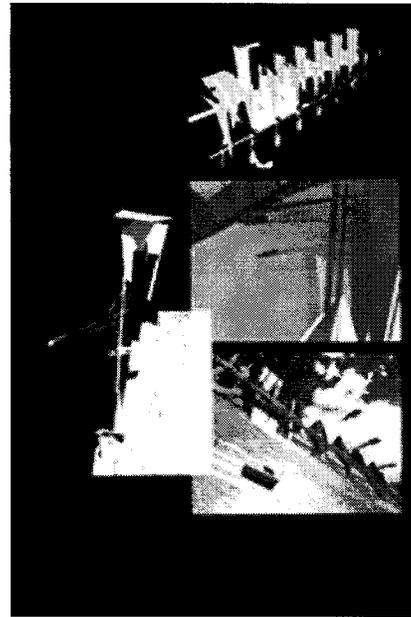


Fig. 6 Hybrids: Zoetrope and Motion Frame as Envelopes

Here the intersection they explored was understood through a linear sequence of movement. Steve, having been involved in the zoetrope project (*Kinesthetic Movement*), brought to this proposal a mechanism for animating the inanimate. Heather, having brought ideas of dance, (through the *Kinesthetic Oxymoron*) contributed to the concepts of the train as a way of perceiving space as a choreography of motion. Together they explored the paradox of a motion frame, which attempts to capture moments of simultaneous movement in order to reconstruct a space that would envelop the body in action. It was the oscillation between place and motion, statics and movement that prompted the design of a series of commuter train stops. The commuter train provided a demonstration of a keyframe, the cinematic experience of linkage formed by incremental frames.

Another *Independent Explorations* project, “Downtown Installation,” emerged from the pairing of the earlier veiling project (*Genetic Fusion*), paradox vehicle and the zoetrope, both *Kinesthetic Movement* projects.

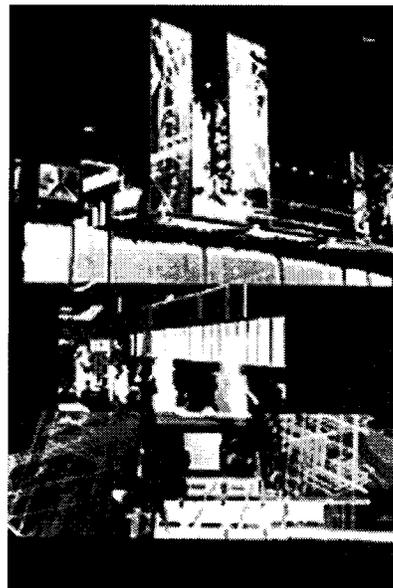


Fig. 7 Downtown installation

Here Jeffrey Farnum, Thomas Thorum, Steve Wunderlich and Solim Gasparik became interested in what is layered and revealed in a city. They were concerned with perceptual movement through space and explored what is visible or hidden, both visually and culturally, within the urban fabric. After building a scale model, they realized the need for a full-site installation to create the environmental and experiential qualities they were envisioning. Consequently, they chose an urban park in the center of downtown Salt Lake City. Their work involved both politically based strategies such as municipal park use permits, and civic spectacle as they located and built the environments in a public place visible to the entire city.⁸ To enhance the experience of the screening, they used both literal "smoke" producing machines as well as the "veil" of night itself. Within this multi-layered urban environment, the group produced a participatory event that engaged both body and mind, public and private experiences of the city.

CONCLUSIONS

The studio addressed several issues that provide a framework for our conclusions. First, we emphasized the notions of *shifting paradigms, contradiction and doubt* as the initial subject matter. Applied to the studio, these notions created a pluralistic condition of design, one that was not easily accomplished. This condition required the students to address notions of ambiguity, pair seemingly disparate parts, and work with the discomfort of open-ended statements. This placed a parallel demand on the faculty, namely the ability (and effort) to respond to differing subject matter, and the development of the ambiguous conclusions anticipated in the pedagogical approach.

Second, the *process of interpretation* presented us with several issues. These involved meanings concerning shifting paradigms and metaphor as they pertained to alchemy, its translations in chemistry and finally, genetic fusion. As faculty we were as much in search of interpretations as the students were. Consequently, elements of doubt, "uncertainty, the deliberate suspensions of belief" and even suspense became part of the teaching process.⁹

Third, the problem of how to address *genetic memory* suggested a complex series of paths to observe the "genealogical histories" of the students. Following the evolution of one student's concepts as they were adapted to another student's concepts, we could only rely on circuitous wayfindings analogous to the DNA genetic codes.

Finally, the notion of a defined building program was deliberately omitted from the studio agenda. The students were therefore confronted with a series of explorations based on both *intuitive as well as rational thought processes* to define their concepts. As tectonic statements these explorations were devoid of programmatic content. The studio focused rather, on mental processes expressed, in the physical realm that might metaphorically parallel the alchemist's gaze.

We would like to conclude that the transformation from authority to observation is considered by some to be the defining paradigm shift of the millennium.¹⁰ As Francis Bacon observed; "If a man will begin with certainties, he shall end in doubts, but if he will be content to begin

with doubts, he shall end in certainties."¹¹ We began this studio with the notion that doubt is a valid premise for inquiry as part of a shifting paradigm, our cultural condition now based on knowledge as a network and not building as a solid based metaphor. The question of whether or not the resulting projects reinforce Bacon's notion of "certainties" remains problematic and ironically in doubt, just as the building metaphor remains suspect within our emerging information based society. If there exists any notion of certainty, perhaps it resides in our willingness as students and faculty to pursue what Richard Powers calls the "vesting of authority in experiment" for better or worse.¹²

NOTES

¹Fritjof Capra, *The Tao of Physics* (Boston: Shambhala, 1991). 323-341.

²Aristotle states in the *Categories on Interpretation*, but what is most characteristic of substance appears to be this, "that, although it remains, notwithstanding, numerically one and the same, it is capable of being the recipient of contrary qualifications." Harold P. Cooke, *The Categories on Interpretation* (Cambridge: Harvard University Press, 1938). 33.

³Terence Riley states in *Mutant Materials in Contemporary Design* (New York: The Museum of Modern Art, 1995). 18. "While the Latin *invenire* means "to find," Manzini asserts that a "material of invention" is no longer a "found material" but rather one that is calculated and engineered to achieve a specific performance. And we may add, if the point of departure for design was once the material itself, today it is the mutable quality of materials. If this is so, designers must return to ground zero, where double is the basis of discovery."

⁴See Geoffrey Galt Harpham, *On the Grotesque* (Princeton: Princeton University press, 1982).

⁵John William Miller, *The Definition of the Thing* (New York: WW Norton, 1980). 42.

⁶For more discussion on the work of Oskar Schlemmer at the Bauhaus see Nancy Troy, "The Art of Reconciliation: Oskar Schlemmer's Work for the Theatre." A. Lehman and B. Richardson, editors, *Oskar Schlemmer* (Baltimore: Baltimore Museum of Art, 1986). 127-148. Also, the discovery of the keyboard as an intuitive as well as infinitely complex mechanical instrument (an ergonomic design) capable of transmitting music is commented on in David Gelernter's essay "Bound to Succeed" *The New York Times Magazine* (April 18, 1999): 132.

⁷Jeanine Graf, "Interactive Evolutionary Algorithms in Design," *Artificial Neural Nets and Genetic Algorithms* (New York and Wein: Springer/Verlag, 1995).

⁸Strategies that recall the work of Christo as he attempted to realize both aesthetic and political properties in his environmental projects such as "Running Wall" and "Wrapping the Reichstag."

⁹*Webster's Ninth New Collegiate Dictionary*. 378.

¹⁰Richard Powers, "Eyes Wide Open," *The New York Times Magazine* (April 16, 1999). 80-83.

¹¹Francis Bacon, *The Advancement of Learning* (London: Oxford University Press, 1974). 35.

¹²Powers. 83.