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Privileging the Sketch:

Coop Himmelblau, Nonlinear Dynamics and the Psychogram

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Introduction

Michael Sorkin's introduction to *Blaubox* (the Architecture Association's Folio of Coop Himmelblau's work) commences with an argument that links Coop Himmelblau's architecture and its development with the dominant culture of its time. As Coop Himmelblau's work developed over three decades Sorkin proposes that it paralleled other important changes that were occurring in science, literature and the arts throughout the same time periods. Although this proposition underlies much of Sorkin's text there is one point at which the critique changes in both style and content. After describing the development of different themes within the work of Coop Himmelblau Sorkin produces a complex critique which links their architecture to the science of nonlinear dynamics. The present paper focuses on this critique and the relationship it proposes exists between Coop Himmelblau's design method and the sciences of nonlinearity. The paper tests Sorkin's claims against both the scientific concepts as well as other interpretations of Coop Himmelblau's design method offered by Aaron Betsky and Charles Jencks. At the heart of this analysis is the psychogram; a celebrated design armature that Coop Himmelblau employed in their work throughout the 1990s. The paper concludes that Sorkin's analysis is at its most accurate when it is concerned with the poetic or spatial qualities of Coop Himmelblau's architecture and least useful when it draws more detailed scientific parallels.

Coop Himmelblau's Design Method

Coop Himmelblau's (1993) design method has long revolved around the creation of an ideographic sketch that they call a psychogram. The rationale behind the psychogram is that it captures the perfect, or unsullied, subconscious desire of the architect. The psychogram acts in much the same way as the surrealist game the Exquisite Corpse (Sorkin 1991). This game is said to free the mind in order to produce, through the use of random generators, a semiotic structure that is devoid of traditional values. Similarly, the production of the psychogram is, apparently at least, an event wherein the mind and the pencil interact directly and



spontaneously. In this event the mind's impulse (or emotion) is processed into an image without passing through an interface or filter. Although the resultant image is not strictly stochastic its aim is to liberate the design from constraints that have become ingrained in the architects' acculturated or educated design practice. Thus, in this sense the psychogram could be described as random at least insofar as it resists the architectural proper (Ingraham 1988). Although this technique is neither original nor necessarily worthy of consideration in isolation, the manner in which Coop Himmelblau privilege the sketch above all other factors has drawn many critics to connect their work to nonlinearity. Sorkin identifies this rigid adherence to the original psychogram as analogous to automatism; the process of composition or design through random or nonlinear processes. Having identified this technique and highlighted its importance for understanding the work of Coop Himmelblau Sorkin then argues that the

[...] true consequence of this journey [of automatism] can be chaos. Chaos may be a little overfamiliar nowadays, especially in its studied inscription in architecture. However, the idea behind this latest upheaval in physics does have real implications for us. (1991a, 346-7)

This statement is noteworthy as Sorkin, almost alone amongst architectural theorists to enter into comparisons with nonlinear dynamics, prefaces his argument with a *caveat emptor* that, despite its misuse, nonlinear dynamics is still an important theory with implications for architecture (Ostwald 2001). This preface also signifies one additional dimension, ironically at odds with the obvious connotations of his paragraph, that Sorkin has a greater understanding of the topic than many of his contemporaries. Few of the architects or theorists who have made tentative or misguided forays into the field of nonlinear dynamics have recognised the superficiality of their acts. As popular culture is subsumed into architecture, so too is popular theory whether it originates in either philosophy or science (Ostwald 1999).

Sorkin proceeds, after his caveat, to provide one of the more lucid and accurate descriptions of the significance of nonlinear dynamics written in architectural theory.

Chaos calls into question the idea of linearity, Newtonian classicism, the reductive notion that physical problems can be solved definitively, that simple rules or equations ultimately rule or equate simply. This radical deterministic optimism is summed up by that Pangloss of Newtonianism, Pierre Simon Laplace, who postulated a celestial intelligence which could "embrace in the same formula the movements of the greatest bodies in the universe and those of the lightest atom; for it, nothing would be uncertain and the future, as the past, would be present to its eyes." (1991a, 347)

In this description Sorkin has captured two crucial notions at the core of Chaos Theory; that it is nonlinear and that it negates the Laplacian conceit of certainty. Whilst other descriptions of Chaos Theory in architecture have dwelt on the implications of anarchy in society or natural catastrophes Sorkin avoids this line of reasoning. Similarly Sorkin deftly avoids the next most common analogical connection to complexity, usually



by way of urban chaos and heterotopia (Papadakis 1992; Mayne 1992). Instead Sorkin relates Coop Himmelblau's insistence on the retention of complexity to the Butterfly Effect.

A commonplace of the study of chaos is the so-called "Butterfly Effect" or, more properly, the idea of "sensitive dependence on initial conditions." The image comes from meteorology, a science which has long labored after the Newtonian grail of predictability. In the pre-chaotic model, faith had it that small events were without real consequences, that the system would simply slough them off. The post-chaotic view celebrates these slight contributions: the fluttering of the butterfly's wings over the Ringgrasse redounds above Bedford Square. Systems tend to complexity, not simplicity, or, in Benoit Mandelbrot's phrase, "clouds are not spheres." And this, this voyage from sphere to cloud, is precisely Himmelblau's. (1991a, 347)

Although all of Sorkin's quotations come from a single source (Gleick's popular and flawed account of Chaos Theory) the manner of their use, and the clever association with Mandelbrot's famous description of natural geometry (Gleick 1987; Mandelbrot 1977), serves as an evocative link to Coop Himmelblau's early passion for both clouds and spheres (Coop Himmelblau 1984). The Butterfly Effect has strong implications for Coop Himmelblau's work as it proposes a system that is inherently unpredictable (within certain limits). Coop Himmelblau have used the concept of "open architecture" to describe their efforts to produce an architecture that is "not for a specific purpose". These are "self-sufficient structures that form differentiated spaces, spaces that do not pin down the future user" but promote the idea that the exact use of any space is indeterminate at any given moment in time (Coop Himmelblau 1991, 18). This indeterminacy is related by Sorkin directly to the creation of psychograms and, by inference, to Sorkin's own professed interest in the Exquisite Corpse.

The Psychogram and the Exquisite Corpse

For Coop Himmelblau the act of drawing the psychogram is "the first capturing of the feeling on paper" (1991, 23). The themes expressed in the psychogram then become more legible as they are developed in increasing detail although the original psychogram remains sacrosanct. Coop Himmelblau have, between 1990 and 2000, described the formation of their theoretical position almost entirely in terms of the construction of the psychogram.

In the last five to ten years we have begun to shorten the actual process of design, to condense it. [...] We try to define the feeling, the emotion that the space is later to radiate. And then suddenly we have a drawing, sometimes on a sheet of paper, sometimes on the table[...] (Coop Himmelblau 1991, 19)

The psychogram, usually a drawing but sometimes a model, is the architect's expression of emotion liberated from the constraints that bind conventional architecture. Coop Himmelblau's aim has been to reduce the design process to a single, volatile instant of creativity. They propose that the greater the degree of compression of time between the starting and finishing of a psychogram the greater the validity of the design. "In the last three to four years we have begun to shorten even further this very rapid design process, which can best be compared with coming close to the center of an explosion" (Coop Himmelblau 1991, 21). Anthony



Vidler describes the production of the psychogram as a kind of automatic writing “operating through blind gesture translated into line and three-dimensional form” (1992, 70). The Architect’s act of creation, Vidler submits, is deliberately embodied within this process of automated production. “Coop Himmelblau’s projects attempt to recuperate an immediate connection between body language and space, the unconscious and its habitat” (1992, XII). In this, Vidler’s reading of the significance of the psychogram, the act mediates between the body, space and mind. The production of the psychogram, it is argued, is not the record of chaotic or random emotion for the purpose of achieving indeterminacy rather it is for the purpose of rendering the building metaphorically organic and defined in terms of an amorphous but distinctly human condition. Thus in Vidler’s reading of Coop Himmelblau the psychogram is an attempt to project a bodily metaphor into the building, rather than the endeavour to capture an aleatory moment of time. The ambiguity in Coop Himmelblau’s design methodology is evident in the twin translations of the psychogram as bodily or chaotic metaphor. Sorkin deliberately, and for reasons relating to his own design predilections, chooses the latter interpretation.

Sorkin’s model for chaos, in either architecture or urban design, is the philological rendering of the Surrealist’s collaborative game of hidden precedents. This game, usually called the Exquisite Corpse, as described by Breton consists of a folded paper exercise whereby participants add their own words to a piece of paper without knowledge of those preceding (Sorkin 1991b). By then folding these phrases into the paper, and out of sight, another participant in the game may add their words to the paper. The outcome of this exercise was thought to provide an exemplar for liberating the minds metaphorical activity. The combination of random and yet still confined elements (each word is random but all are still words) created a simple machine to produce unfettered works. The game, a form of automatism, was named after one of the first sentences revealed; “the exquisite corpse will drink new wine.” The inference is, therefore, that a series of iterative rules while not restricting the creative process had assisted in the creation of a collective image (or design) whose final complex and preternatural imagery was beyond the predictable outcomes of any single component (Ostwald 1992).

Although Sorkin never makes the connection, the Exquisite Corpse machine closely mirrors the creation of fractal geometric form; the geometry of nonlinear dynamics. Both processes rely upon a seemingly linear sequence of iterations, each stage repeating the last, but the complexity of the outcome of each stage, in either words or numbers, is ultimately highly detailed. However, despite such broad similarities, the relationship can not be extended any further. While the words chosen for the Exquisite Corpse are random (within predetermined limits), the fractal geometry produced through the iterative process is not random, rather it is just complex and self-similar (Barnsley 1988). It could be argued though that the output of the Exquisite Corpse game was a string of words and therefore that commonality of signs was a form of order. This argument would rely upon an understanding that language may only be analysed through systems of language. Attempts in mathematics to derive first-order axiomatic languages have resulted in the realisation that such attempts are self-referential and consequently unstable (Hofstadter 1979). Thus both the iteration of language and the iteration of geometry are, in this sense, linked to scaling; although this relationship is both complex and outside the bounds of this paper. Despite this, the similarity between Sorkin’s Exquisite Corpse, Coop



Himmelblau's psychogrammatic indeterminacy and nonlinear dynamic's Butterfly Effect is notable. The final outcome of each of these automated acts is seemingly unpredictable because at each iteration the sequence is randomised, or at least undergoes complex elaboration. Thus the final stage or outcome is sensitively dependent on the first stage. To return to Coop Himmelblau and predictability Sorkin states the their Open House project

[...] is a shrine to the sensitive dependence on initial conditions. The impetus to retain—with utter fidelity—the character of the first sketch is exactly this. Instead of trying to smooth things out, rationalize an impulse without ready quantification, Himmelblau trusts the evidence of their sensibility, and then struggles to retain it—whatever the consequences. [...] Instead of retreating into the tactic of the impossibility of building, they attempt to build the impossible. (1991a, 347)

It is here that the first flaws appear in Sorkin's argument. Although the random, surrealist, psychogram is the initial condition it is also, as far as Coop Himmelblau can make it, the final condition. Coop Himmelblau's aim is to match the building as closely as possible to the psychogram. This is contrary to the implications of the Butterfly Effect as this law suggests that the final condition of the system, both architectural and meteorological, is unpredictable owing to the immeasurability, or perpetually unknown nature, of the starting condition. Rather like the perpetual failure of any search for mythical origins (Pfau and Jones 1987), the search for origins in Coop Himmelblau's work should be shrouded in mystery, not recorded statically as identical from first to last stage. In Coop Himmelblau's work the iterations, which start out with a random operation, then strive to remain static, stable and faithful to this initial cast of the die. In nonlinear dynamics, each iteration results in the creation of a new related psychogram; each iteration builds upon the last, or more correctly, looks more and more closely at the last and reinscribes itself within the old psychogram. Thus although, initially at least, Coop Himmelblau's architecture is concerned with chaos and unpredictability after the production of the ideogram the process returns to the predictable and to the Newtonian or Laplacian fixation on certainty. Ultimately Coop Himmelblau's adherence to the initial condition of the system reduces any tendency towards sensitive dependence. Despite this, Sorkin's reasons still possess a degree of descriptive accuracy. Even though the two systems, one natural, the other architectural have similarities and differences a sufficient number of additional cues exist for Sorkin to draw his parallels even if the production of a psychogram does not support claims of sensitive dependence.

The Open House

Coop Himmelblau's claim that “[s]paces are indeterminate, as are enclosures” (Betsky 1990, 114) is the central axiom of the Open House. At no other time do Coop Himmelblau provide a more lucid description of the relationship between their work and nonlinear dynamics; yet even here the terminology and the sentiment suggests the very relationship Sorkin has proposed but never confirms it. The Open House is the built manifestation of the original psychogram with a deliberate lack of regard for controls, either natural or artificial. In this sense, as previously demonstrated, the design process is undoubtedly linear. A design process based on Chaos Theory would exhibit both its sensitive dependence on starting conditions as well as other



properties of fractal geometry including scaling (Eisenman 1986). In the Open House Sorkin describes the construction and detailing of the wing in such a way as to recall images of the Butterfly Effect and field theory (Hayles 1985; Capra 1977). As Betsky notes:

[t]he construction of the wing is made possible by a truss in tension, a stretched fabrication of steel anchored at the highest point. The myriad thin members of this truss, and of most of Coop Himmelblau's structures, diffuse loads to the point where they become competing poles of attraction instead of fixed points of reference. These thin members also make the underlying order of architecture transparent, leaving a series of overlapping planes, shimmering and sheer coverings that may be either ceiling or wall. (1990, 114-115)

The construction of the wing is not immediately expressive of the forces involved, or the resolution of these forces. The visual imagery of overlapping fine members may recall events within the quantum field, in the sense that they are linked but unpredictably so, however this could equally well be said of many other architect's works. Jencks offers a similar description of Coop Himmelblau's wing devices as constructed. Jencks, although familiar with the concept of nonlinear dynamics, does not make any direct comparison between architectural and scientific theories although his terminology might suggest it. Jencks states that, [n]onetheless the thin steel lines, which slightly bow and stretch, have a taut beauty. Their counterpoint is so tense that it seems the architecture would explode into life if one tendon were cut. Perhaps it would. In any case this is the image of dynamic, moving, balancing forces frozen into architecture. (1990, 277)

Jencks suggests that the final state of the architecture represents a snapshot of a system of dynamic or chaotic forms. In support of this view Coop Himmelblau's 1983 work *Architecture is Now*, an installation and text roughly contemporaneous to the Open House, reveals their theoretical predisposition.

Architecture is not accommodating. Because accommodation and classification are—in architecture as well as in social living an expression of reactionary and rigid attitude. An attitude that turns life to ice. Just as propriety and remaining in the past petrify everything that lives. However, architecture lives for seconds at the moment of conception. It can never be Past, because at conception it becomes Future. The instant of conception differentiates and decides. Is this instant free from pressure, cliché, ideology and formalism, then architecture becomes free. Then the circumstantial pressures crumble. Causality is overturned. (Coop Himmelblau 1984, 11)

The metaphorical images record frozen moments in time and petrified seconds; each narrows the time span to that distinct ossified moment. As Himmelblau strive to capture the instantaneous "architecture of now"; they forfeit the ability of their architecture to exhibit nonlinearity. The final refrain, "[c]ausality is overturned", is both a strategy to accept indeterminacy and at the same time deny its ultimate dominance of any man-made artefact. In this sense Coop Himmelblau's work has come full circle; the Open House is a frozen image generated from an (un)predictable psychogram. The house is thus the chaotic image "frozen into architecture". In contrast the early works of Coop Himmelblau do not exist as an end state. The wing project in Graz was



made to blaze and then to decay. It was not meant as a lifeless, static monument to the aspirations of the designer. The proposal for another wing over Munich, a wing that “rises and falls —flaps or flickers” in response to the changing state of nature, is the most powerful evocation of nonlinearity in Himmelblau’s work; to use an analogy from quantum mechanics, the end state of the system(architecture) is unpredictable owing to the interrelatedness of natural systems. Ultimately this means that the early projects captured the totality of nonlinear dynamics far more effectively than the more recent.

Coop Himmelblau’s Open House sought to place itself outside the systems of nature and to record its exact starting conditions. This is a patently utopian act as the architect strives to ignore the complexity of reality in favour of the idealised vision. This process ignores the tendencies of natural systems and the inevitability of the failure of this dream. From this analysis of Coop Himmelblau’s theoretical position, and its development, it is ironic that Sorkin should choose the Open House as his exemplar of nonlinear dynamics in the work of Coop Himmelblau. In contrast, Jencks argues that the work of Coop Himmelblau is well suited to be described as violated perfection because it relies upon the perversion of pure and predictable geometric forms;

the perfect white cube suddenly smashed, skewed and skewered into a frenzy of oppositional forms. Another such crescendo occurs in the adjacent power house where the chimneys suddenly tilt off the right angle. In both cases a rational predictable solution is partly violated by an expressive outburst and the balance of one and the other is mutually heightening. (Jencks 1990, 277)

Like Sorkin, Betsky and Cook, Jencks insistently describes Coop Himmelblau’s geometry as unpredictable, irrational and random. However, unlike these other critics Jencks avoids the temptation to relate this to nonlinearity. Jencks, somewhat simplistically, classifies Coop Himmelblau’s architecture as consisting of a “frenzied cacophony”; the building forms “jump about and cross in contradiction” but they are not related to the science of nonlinear dynamics (Jencks 1990, 277).

Coop Himmelblau have asked; “how should we think, plan and build in a world that is becoming daily more and more fragmented? Should we turn a blind eye to this fragmentation and take refuge in an ‘ideal’ world of architecture?” (1991, 18) Their response is to become part of the fragmentation they perceive in urban life and certain natural systems including fire and decay. Their strategies, though possessing the imagery of nonlinear dynamics are intricately linked not to science but to phenomenology and anthropomorphism. Their conceptual aims are perceptive in that they have captured the essence of nonlinearity and sensitive dependence; their methodology nevertheless is distinctly linear.

Those areas of Coop Himmelblau’s work which most closely recall, and are related to, nonlinear dynamics are often those ideas which they have explored in an attempt to redefine the building as body, a common strategy of de-anthropomorphism. Coop Himmelblau’s efforts to create an architecture which is aleatory, through its immersion in fire, destruction by heart-beat, changes in temperature, urban space and wind, are those which most clearly link architecture and chaotic, natural systems. However, in the work of Coop Himmelblau there is a network of possible connections between nonlinear dynamics and architecture that they never fully



acknowledge. Their tacit acceptance of the claims made by Sorkin does not imply any agreement; rather Coop Himmelblau's work itself changes and develops constantly in an attempt to resist simple interpretation. Sorkin's opening note in the *Blaubox* essay contains a clear note of caution that suggests that he too understands the tenuous nature of his claims.

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