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Notes on Abductive Experimentation

The young man held a gun to the head of God
Stick this holy cow
Put the audience in action
Let the slaughtered take a bow
(Ash, D., Murphy, P., Haskins, D. & Haskins, K., 1983)

*"A mass of facts is before us. We go through them. We examine them. We find them a confused snarl, an impenetrable jungle. We are unable to hold them in our minds. We endeavor to set them down upon paper; but they seem so multiplex intricate that we can satisfy neither ourselves that what we have set down represents the facts, nor can we get any clever idea of what it is that we have set down. But suddenly, while we are poring over our digest of the facts and are endeavoring to set them in order, it occurs to us that if we were to assume something to be true that we do not know to be true, these facts would arrange themselves luminously. That is abduction." (*as cited in Bergman & Paavola, Eds., 2003, Abduction section, para. 13)

Today it is no longer news that the discipline of architecture has acculturated the logics and techniques of other fields including genetics and linguistics, or calculus and philosophy, so we hardly give trans-disciplinarity a second thought. In parallel, with the proliferation of the operating knowledge of three and four-dimensional software, we have become inured to complex geometric formalisms that habitually represent difference with hyper-articulated aplomb. Routinely, in both cutting edge practice and the academy, computation abstracts qualities and quantities into data with ever-increasing facility and speed, generating from it seemingly seamless formalizations. Parameterized information frames and swaddles life in continuous feedback loops yet we are no longer awed. Barely a few decades since the emergence of pioneering computational speculations unleashing architecture into vigorous animation, and with the hard intellectual labors apparently already accomplished, it appears that we have come to take much too much for granted. Barely registering the profundity of trans-disciplinary cyberneticist Gregory Bateson's *(2000)* remark that "the elementary unit of information—is a difference which makes a difference," architecture is caught in a regressive moment passively mirroring cycles of consumption and production while failing to elicit any new ideas or measurable difference *(Bateson 2000, 459)*. Unsurprisingly, representation—or the lowest common denominator of performance—is back and along with it a host of naive humanist concoctions of meaning and function. Nowhere is this more literally evidenced than in biomimicry,

or architecture's latest Golden Calf. Described by historian and critic Sylvia Lavin *(2010)* as the "architectural cult of naturalism," biomimicry is indeed a fallacy in need of "philosophical speculation to keep neofunctionalism from turning back into old-fashioned functionalism" *(Lavin 2010, 137 – 140)*.

To wit, and to escape the representational rut, we should encourage a serious consideration of the scientific method implicit in the conference theme, which radically intertwines life and information, and invites serious exploration of "the ways designers…collect, analyze and assemble information through computational systems that redefine the notions of design performance and optimization, evolutionary and responsive models" *(Acadia, 2010)*. Adopting a post-humanist outlook and appropriating scientific philosopher Charles Sanders Peirce's notion of Abduction, the oft-overlooked and underestimated initial step in scientific reasoning, we might even revitalize a culture of experimentation in which the very nature of information itself is open to new manifestations, relations, and sublimations as "abstract machines" *(Deleuze, 1988, 37)*. Importantly, such consideration forecloses neither Deduction nor Induction, the other two modes of scientific inference, but reminds one that they should not be regarded as experimental default settings. For far too often they are mistakenly construed as the sole provinces of experimentation and despite the best and far-reaching intentions, they merely confirm a priori matters of fact and eclipse the potential for new discoveries, ideas, and knowledge. In this regard Peirce's contradistinctions, are instructive: "Deduction proves that something must be; Induction shows that something actually is operative; Abduction merely suggests that something may be" *(as cited in Bergman & Paavola, 1998, Abduction section, para. 10)*. In other words Abduction is "the process of forming an explanatory hypothesis" and "(i)t is the only logical operation, which introduces any new idea, for induction does nothing but determine a value, and deduction merely evolves the necessary consequence of a pure hypothesis" *(as cited in Bergman & Paavola, 1998, Abduction section, para. 10)*. Bearing this in mind, and suspending pragmatism as a goal without negating its benefits, this essay will develop a contemporary image of abductive experimentation by focusing on a recent gallery exhibition as a point of departure.

Juan Azulay/Matter Management's "Vivarium" was an installation on view at the gallery of the Southern California Institute of Architecture (SCI-Arc) in Los Angeles in spring 2010 *(Sharif, 2010)*. On entering the gallery, the audience confronted a massive, distressed graphite pyramid flipped on its side at the end of the double-height room, glowering; its base lodged in the wall and its vacuum-formed, permeable panels molting as if its contents were under assault. Closer to the door were two mounds of salt, the culprits in this monochromatic crime scene, and a bank of computer monitors streaming collaged real-time and fabricated imagery of the imperiled, unseen inhabitants of the pyramid– purportedly, fresh and saltwater algae, beetles, crickets, robots and brine shrimp. It transpired that the salt performed catalytically: undertaking the clandestine and pernicious task of slowly dehumidifying the gallery air, thus impairing the ability of the pyramid's oblivious inhabitants to draw water from its atmosphere ultimately to disrupt their homeostatic drives. Perhaps the pyramid's peeling panels were themselves double agents secreting the deadly

sodium accelerant into its depths? By a similar token one wondered if the audience had become an unwitting accomplice to the sinister experiment by intermittently skewing the ambient temperature of the gallery thus hastening the pyramid-dwellers's demise. More disturbingly, they half-knowingly bore witness to the controlled slow-motion race between a mix of species and mummification processes beyond their control. Hanging over the two overlapping habitats of observers and observed was an eerie soundtrack, which further amplified the foreboding air.

Real and not, the scene exuded the a forensic aura in the midst of which one sensed the spectral influence and presence of what Azulay refers to as the architecture of "no shadows" *(Azulay & Moss, 2010)*; for this assemblage of partial totem, wired props, sound effects, and actors of variant species amounted to apparitions and fragments impossible to unite as a tangible whole. Instead, "Vivarium" put the holy trinity of 'Firmitas,' 'Utilitas,' and 'Venustas' into an iconoclastic, suspenseful play between form and formlessness. Like Cold War cloak and dagger adversaries all were ambivalently suspended in triangulated worlds, their fragile landscapes held together only invisibly with the unfathomable fear of mutually assured destruction. Further exacerbating Azulay's intentional frustration of direct correlations between one thing and the next was his subterfuge of the surveillance monitors through montage techniques that put in question the duration, sequence, and veracity of unfolding events and associated technologies. The instantiation of fiction as the sole constant within "Vivarium" was paradoxically present in the tainted film, rendering the only visible evidence of events as disinformation and misinformation in black, white, and digital green camouflage.

Certainly "Vivarium" was quite unlike many of the automatically, algorithmically derived installations to which audiences have become accustomed in architecture exhibitions over the past few years -- verily the proving grounds of computationally driven speculations. While his design protocols and techniques appeared to derive from the same computational milieu, Azulay implicitly adopted philosopher Giorgio Agamben's *(2007)* call to "Profanation," swerving away from the creeping neofunctionalism and homogeneity of recent generative design culture with darker manner and matter *(p. 92)*. Utilizing film as mediative artifice, Azulay operated abductively, activating unlikely combinations of time and events. Though solemn and suggestive of otherworldly rituals, this was no church of performative prototypes, no temple for the exaltation of scripting as Scripture. Employing the term fabrication nefariously, "Vivarium" spun a performance akin to an Artaudian 'Theatre of Cruelty' whose bleak mise-en-scène brought the audience in close quarters with a discomforting experiment—drawing them into a pensive sci-fi setting with the unsettling narrative of life becoming death. By so intermingling the audience and events, "Vivarium" subverted the specter of in vivo testing and implicated the disciplinary pathologies expanded by Agamben's *(2009)* notion of the 'Apparatus' in his rethinking of philosopher Michel Foucault's, "Dispositif" *(Agamben, p. 2)*. Indeed when referring to it as "whatever it is that Juan has done," SCI Arc director Eric Owen Moss best captured the 'whodunit?' state of affairs, hinting at its broader abductive import *(Azulay & Moss, 2010)*.

Like any laboratory experiment worth its proverbial salt, "Vivarium" flirted with the unknown, taking on a vast array of sizable and complex issues. As a socio-technical network of interplay, of both animate and inanimate protagonists, it brought to mind sociologist Bruno Latour's *(2004)* call for a "second empiricism". That is a scientific quest resolutely unconcerned with starting or ending at unswerving facts because they are "a poor proxy of experience and of experimentation," devoid of complexly layered existences and histories *(p. 245)*. As a microcosmic laboratory whose specimens and equipment were both co-apparent and co-extensive, "Vivarium" set the stage for thinking abductively about information, comprehending it as "fragile and thus in great need of care and caution" to be carefully engaged as a "matter of concern" rather than a "matter of fact"

(p. 225). Overlapping and informing this attitude is Latour's *(2004)* compelling reconsideration of philosopher Martin Heidegger's distinction between lowly 'Objects' and auratic 'Things.' By focusing on Heidegger's etymological study of 'Thing,' Latour reintroduces 'Gathering,' one of its undervalued proto-spatial roots, as that which connotes both something outside of us and something in which we gather *(Latour, p. 233)*. This shift enables a new perception towards alternative horizons where "all entities, including computers, cease to be objects defined simply by their inputs and outputs and become again things, mediating, assembling, gathering many more folds than (Heidegger's) united four" *(p. 248)*. Thus expanding the 'Object,' Latour *(2009)* pushes it beyond phenomenological provincialism towards a relational political realm, which he identifies as 'Dingpolitik' (or Thing Politic).

In approximate sum, "Vivarium" simulated a global 'Dingpolitik,' or perhaps less felicitously, the 'Super Wicked Problem' in and on which we reside: its systems out of control, caught in a race against the clock, derailed despite our best intentions and interventions and its long-term processes at volatile odds with our short-term ones *(as cited in Lazarus, 2009, footnote 10)*. In miniature, it both intensified the incomprehensibility of the architect's context and its entangled diagrams and made palpable the double bind of power and impotence at the heart of the discipline. Yet despite the implicit futility of things, it did not stand as a prohibitive injunction but operated instead as an analogical prelude, or what it might mean to think paradigmatically before acting in and on a world whose systems, natural and synthetic, are at best to us but abbreviated and a world in which no one medium has extinguished another. Following Agamben's *(2009)* definition of the paradigm as "a form of knowledge that is neither inductive nor deductive but analogical," we can imagine the architect as an abductor, embedded in a new kind of patient research before, during and beyond computation *(p. 31)*. Wedged in a vital mix of competitive and cooperative forms, functions, and forces and welcoming information as raw material comprised of irreducible, unstable amalgams where 'Objects' have become 'Things,' multi-liminal and multifarious, we can imagine the architect becoming attuned to Deleuze's notion of an intermediary diagram as an interventionist agent with alternative goals to neo-liberalist use-value. Understanding that such a diagrammatic state "has nothing to do with a transcendent idea or with an ideological superstructure, or even with an economic infrastructure, which is already qualified by its substance and defined by its form and use," and that it is "highly unstable or fluid, continually churning up matter and functions in a way likely to create change," the architect would be strategically positioned to engage profound ideas of adaptation, resilience and tolerance without resort to representation or functionalism *(1988, p. 35 - 37)*.

Given this we might conjecture that abductors are "second empiricists" who act on the powerful hunch that beneath reason there "lies delirium, and drift;" and that reason is "always a region carved out of the irrational— not sheltered from the irrational at all, but traversed by it and only defined by a particular kind of relationship among irrational factors" *(p. 144)*. As

suggested by "Vivarium," abductors speculate in the midst of circumstances, in the fog and haze of myriad diagrammatic overlays. They crisscross multiple mediums with agility and flexibility aspiring to fabricate robust interfaces with the composite world at hand. Welcoming risks by inviting the interjections of unforeseeable variables they learn and unlearn so as to posit adaptable and civil systems both empirically and empathically inclined. With the doors and windows of their laboratories always ajar, abductive practices are imaginaria with operating platforms both analog and digital, software both proprietary and shareware, abductively dredging the ad-hoc for a post-hoc. Versed in media and techniques like non-linear narrative filmmaking, their scripts are vehicles of provocative fictions and plural temporalities *(Nagel & Wood, 2010, p. 11).* Hyper-alert to ontological ambiguity, they seek out moments when seemingly unmappable etherealities appear dimensionally or when measurable corporealities diffuse ethereally. Observing that information is always in formation they dream of new assemblages, new life support systems and new techniques in the guise of intermediary diagrams with non-representational agency. In many ways abductive experimentation is not new to the discipline. Indeed we might pause and rewind every once in a while to remind ourselves *(Fisher, 2008).* But then only if we promised to fast forward really quickly.

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