As demonstrated by the many diverse presentations in this conference, architecture is in a period of dramatic transformation. These changes are, of course, occurring within the broader transformations of our time. In fact, today, in these early days of the twenty-first century, I believe the "ubiquitous observation" is transformation: cultural, technological, biological, social, and economic transformation. We are in the midst of unprecedented re-alignments and re-articulations of every aspect of our lives. Yes, as the title of the conference suggests life is: In (trans) Formation. Navigating these transformations requires developing modes of measure, modes of locating oneself and one's discipline within our current dynamic geographies. However mutable disciplines may be, they retain certain characteristics against which their transformation may be measured. In this sense, disciplines at once provide the instruments to create transformation and the principles: to measure and withstand its consequences. Today I would like to offer a few brief notes toward comprehending, creating, and navigating this dynamic moment in our discipline and our current geographies. I would like to begin with an early transformative moment in the exchanges between our lives and our spaces.

For millennia, stories in the form of myths provided a means of navigating, a means of comprehending the world and our place within it. Some of the earliest of myths were shared through a form of embodied reenactment, a reenactment done with no audience, all of the participants were within the myth: you would become a snake, a dragon, the sun, and I would become, say...the wind. Together we would reenact the myth, creating a "shared space" of mutual telling. All of the participants were simultaneously, tellers and listeners within the space of the story. This shared space was immersed within the essential telling of nature itself; it existed as a kind of ship made of water. I sometimes think of the participants in this early form of reenactment as being with in / with in the myth and the world. Around 2500 years ago, the birth of Greek theater introduced a separation within this shared space, a separation between the re-en-actors and an audience, between “the tellers” and “the listeners.” Alberto Perez Gomez states, “Greek tragedy, implicitly separated the orchestra or stage from the spectators in the amphitheater, signaling the transformation from a world of fully embodied participation in rituals (where human action...was assumed to be at one with nature) to a world in which the spectator participated vicariously through vision and hearing.” [2]
An interesting thing happened as a consequence of this new form of participation through vision, the landscape beyond the play was pulled into the reenactment; the hills and meadows, behind the stage co-mingled with the story and were understood as part of the myth. This co-mingled understanding was then carried within the participants as they reentered the landscape, constructing a kind of literate geography, aligning the landscape of their lives with the landscape of their stories. Looking out through the play transformed the within/within of previous reenactments, creating a new form of participation, a new mode of constructing coherence of: navigating the literate space of our stories. Perhaps: space became the other half of us? Soon scenery was introduced to the Greek theater; surfaces were built, painted, and placed at the back of the stage to reenact the landscape itself. I imagine, that the creators of the plays recognized the vertical flattening out of the view beyond, and they began to construct mimetic fragments of this landscape, to allow for further articulation and control of the story; they could make it rain when it was sunny. This scenery constructed a second world that hovered within the distance partially blocking the view of the world beyond. The early separation of actor and audience is a critical moment in the development of western civilization. Building a world that partially blocks the world and can be re-articulated as a mode of exchange with the world is linked to the origins of western art, architecture, science, and technology. We can recognize the trajectories of this early moment today. Our current geographies contain a multitude of fragmentary picture planes that at once block pieces of the world and allow its re-articulation through previously un-imaginable views. The lens of computation continuously generating a mathematical interpretation of the world—a complex of occasions, a geography itself, where it can rain when it is sunny. The communicative space of the Internet may be unleashing a new double inhabitation: at once, a primal geography, a new kind of “within/within” where everyone is an actor and everyone is an audience and at the same time producing new distances through multiple forms of mediated experience that at once collapse and expand the spaces between us. We are in uncharted waters, with every surface potentially: lens and mirror, the literate geographies we are navigating, contain a constellation of multiple: station points and focal points, foregrounds and backgrounds.

Sensing the profound re-articulations of life within our current geographies requires a brief sketch of the complex relation between capital and technology. A good place to begin this sketch is the birth of modern incorporations. Modern Incorporations were born out of ships and navigation. Individual ship owners grouped together and incorporated the ownership of their ships allowing the predictable burden of loss arising from the uncertainty of the long voyages to be distributed through the corporate structure. When individual ship owners lost their ship at sea, they were sunk in business; if twenty individuals agreed to bind together and share the ownership of their twenty ships, when one ship was lost, the incorporation remained buoyant—it still owned nineteen ships and could redistribute the load of this new value among the shared holders (shareholders) of the incorporation. These early incorporations were promises about time and value, they worked because they were no one individual, they were structures that served as a second self, absorbing the load of losses. This structure of risk distribution reflects
the structure of the ships themselves, which could be understood as physical manifestations of
the second selves of incorporation. Each structure is a set of promises made in advance from the
shore, one in materials, one in words, two expressions of the same will to navigate uncertainty and
conquer time. This double structure, Half material (displacing water) Half temporal (Displacing
the individual ship owner) creates two forms of buoyancy transporting value across time. The
ships and the incorporations are time promises; they mirror and manifest the principles of risk
management and distribution; they are expressions of the same will to control the unpredictable,
to conquer time. This early mirroring of physical and mental structures speaks to the larger
parallel growth of capital and technology. While the seeds of our current knots of capital and
technology lie in the early mirroring of ships and their incorporation, it is clear that today we are
within a new dimension. Over the past thirty years we have seen a dramatic transformation in the
calculus of global capital. Today, the majority of financial instruments are exchanged and traded
within vast frameworks of information technologies. A relatively new practice called "algorithmic
trading" employs massive computational technologies emulating neural networks to monitor the
markets and carry out billions of trades a day with no human knowledge of the individual positions
being bought or sold. Within this the frequency of the positions held is often in milli seconds and
would not be conceivable as a human activity. The Equity markets are now overwhelmingly traded
algorithmically. Perhaps as much as 90% is done that way.[3] These developments have opened
up the world of trading to a wide range of ideas borrowed from mathematics, computer science,
genetics, physics, logic, etc. Algorithmic trading is one aspect of the new ‘time promise’ universe
of computation based global capital markets where all manner of new tools allow time to be cut,
packed, broken down, and reordered with the same speed and precision of particle physics. The new
paradigm of global capital, has found its ships in information technologies. The risk distribution
and collective judgment born in binding together of risk and reward within the early shipping routes
is now largely held within the neural networks of computational exchanges. A kind of ship made of
water, a computational double mirror of capital and technology, where algorithms read and write
each other in the constant navigation of the geographies of global capital exchange (Figure 1,
Figure 2). Unlike the early double structure of ships and their incorporation, this double structure
can be traced to a single defining event. Perhaps the most seminal event of the twentieth century
was The Manhattan Project—the building of the first atomic bomb. Linking: Capital, Politics,
Technology, Life and Death, the Manhattan Project simultaneously produced nuclear weapons and
Information technologies. The mathematical demands of splitting the atom, led to the birth of
digital computation. The complexity of atomic catastrophe required: Numbers that could make
Numbers. Perhaps the first verifiable act of alchemy, Robert Oppenheimer’s faustian bargain of
number, substance and energy launched a radically new Janus face of capital and technology.

I have often thought of the odd symmetry of the Sun (in the sky) being an enormous life
giving fusion event, and fragments of the sun on earth (nuclear weapons) being the direct inverse
(enormous life taking fusion events). The gigantic nuclear fusion event of the SUN is ultimately the
only external input that continually adds to the resources of the planet. If the sun is thought of
as a source, at the other end of the economy is debt; the cost of debt is not a source but a sink.
What I find remarkable is that the sum aggregate total of the world’s debt is secured in a direct
line by nuclear fusion devices. World trade, like many forms of consensus, contains agreements
that are enforceable; this means that they are maintained by force. In a ‘chilling symmetry’ to the
gift of the sun, these technological fragments of the sun on earth are the collateral, at bottom,
securing every loan. The threat of total consumption is the anchor of the entire economy. The
Manhattan Project originated both the collateral at bottom, binding together the globes debt and
the computational ships, transporting value from computer port to computer port at the speed
of light. Comprehending this new double headed mirror of capital and technology is assisted by
looking at the most elemental definition of mimesis or the mimetic, which Dalibor Vesely has
defined as: The “re-enactment of movement as a significant gesture” Looking at the current horizons of technology we can identify a number of significant gestures that may be understood as: “re-enactments of the movement of capital.” From the early mirroring of ships and incorporations.... to the inverse technological mirror of the sun on earth found in the collateral of nuclear weapons, to the latest nonhuman; genetic time trading grounded in information technologies, we see the “re-enactment of the movements of capital as a significant technological gesture. [4] It is quite possible that the construction of a technological globe that we are witnessing, is not solely the result of a reciprocity or mimetic exchange between us (humans) and the world but more between incorporations and capital. Perhaps the model, which positions humans perceiving the world and engaging in a mimetic exchange has to a large extent been displaced by a model which positions the second selves of incorporations viewing not the world, per say, but capital and the intermediary plane of exchange is technology. (Figure 3) It is quite possible that technology is the other half of capital, that it completes it, allowing it to manifest its movements into the world. While the original will to overcome the unexpected by constructing entities that collapse time was certainly human perhaps the double trajectories of Incorporations and Capital have become two picture planes that are facing each other; a double mirror to infinity, producing a flickering constellation of station points, focal points, foregrounds and backgrounds. This cacophony of second selves is a new “time promise land”, a commingled geography of algorithms and metabolisms. Bringing us to ask: Does the world fit? Does the full spectrum of the world fit within this commingled geography? Do we fit? Does the full spectrum of our humanity fit within the “promise land” of capital and technology?

At root: Architecture is an empathetic discipline with the capacity to mediate an exchange between: our lives and the structure and spaces we inhabit. These exchanges, are reciprocal, and mediating this reciprocity is an essential characteristic of the discipline of architecture. This mediation affords architecture the capacity to construct shelter and sanctuary for our: mental, emotional, psychic and physical lives. It is quite possible that space is the other half of us, that as Alberto Perez Gomez has so beautifully articulated space “completes us”, and allows us to understand ourselves and others. In asking how do these spaces complete us? How does architecture mediate the inhabitation of our current geographies? The debates should not be limited to being for or against computation in architecture. The for position is always framed as open to new possibilities and part of the inevitable future, the against is thought of as nostalgic and holding on to the past. These divisions mute all kinds of dialogue, it seems that, talking about the computer as “just another tool” is also not precise enough. This discourse asserts a false sense of neutrality. The porosity of being offers no such shelter from the perceptual and cognitive shifts of our current transformations. The profound shifts in architectural ideation and production that have come with information technologies are occurring within / within the eclipsing double mirrors of global capital and technology and the broad transformations of our time.
The interweaving of information technologies into the structure and content of architecture is perhaps signaling a transformation that we do not yet comprehend. Perhaps, it is not that information technology is becoming a significant aspect of architecture, but architecture is becoming an aspect of information technology. Perhaps architecture itself is becoming “just another tool” within the double mirror of capital and technology. Today architecture and humanity share the same predicament: architecture is as irreducible as we are. Bringing us to a fundamental question: WHERE ARE WE? What is the nature of life and space today? If space is a participant in our thoughts and actions, can space, conceived wholly within a mathematical interpretation of the world, complete us? If architecture opens a communicative exchange between our being and the spaces we inhabit? Does the creation of architecture within a mathematical interpretation of the world assert that the world itself could exist within this mathematical interpretation? That life and space itself are information. The promise and challenge for Architecture today is to imagine and craft: Meaningful human exchanges with and within our current geographies. Perhaps navigating, measuring and comprehending our new geographies, begins with the parts that don’t fit within the mathematical interpretation of computation. Perhaps the spatial/material imagination inherent to architecture provides a measure of our current transformations. In this sense, architecture is a life sustaining discipline; A nuanced viscous discipline for a nuanced viscous humanity. As we move into the 21st century perhaps architecture will discover itself anew, not as a mirroring expression of the capital market exchange but as a deeply human exchange of life and space.

Endnotes

(1) Large parts of this essay were originally developed as a lecture entitled: “Globe Double: Mimetic Capital; technology” presented in 2007 at the ‘Ineffable’ conference organized by Bradley Horn and held at the City College of New York (CCNY) School of Architecture, Urban Design and Landscape Architecture. I am grateful for the challenge this conference provided in working out these questions.

(2) Alberto Perez Gomez and Louis Pelletier, Architectural representation and the perspective hinge. (Cambridge, Massachusetts, MIT press), pg. 10

(3) This discussion of the capital markets and algorithmic trading in particular has benefited greatly from extensive conversations with Farid Moslehi. I am truly thankful for his enormous generosity and patience.

(4) Dalibor Vesely, ‘Architecture in the Age of Divided Representation’(Cambridge, Massachusetts, MIT press), pg. 287

“In principle, it is possible to say that mimesis is a creative imitation in which something with the potential to exist is recognized and reenacted as a significant gesture; it may be sound, as song or music; visible reality, as image or picture; or ideas, as an articulated and structured experience.”