A STRUCTURE FOR ARCHITECTURAL INNOVATION

MINDSHAPING

A project submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy

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Declaration

I certify that where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

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A STRUCTURE FOR ARCHITECTURAL INNOVATION:
MINDSHAPING

Abstract

In the process of research, it is noticed that practice works are morphing from one design emphasis to another.

It is speculated that we are inadvertently mindshaped by our activities and by our environment, and by our actions we reshape the environment and create a culture.

Through concentrated practice, we convert these experiences into metaphors and through heightened combinatory cognitive skills we reassemble these metaphors to arrive at innovation.

The process of innovation is developed from ordinary thinking.

The PhD seeks to clarify the forces that shape our minds and ways to harness these forces through the avenue of practice.
Preamble

This submission contains the concluding thrust of the PhD, which frames the body of research in its relation to practice, whereas the main content of the research, which is contained in the APPENDIX, is a systematic account of an academic research.

Refer also to the APPENDIX for:
- The methodology adopted for the construction of hypothesis.
- The series of literature reviews.
- Research questions.
- Discussion.
- Theoretical conclusion.
- Detailed bibliography.

This submission provides a further sketch of the body of work but directed toward practice in the following manner:

- Wittgensteinian Background. It uses Wittgenstein’s later remarks to provide legitimacy to the thinking adopted for this submission.

- The Topography of Innovation. This summarises the chain of selected contemporary scholarship and provide definitions to terminologies.
- **Changing the Mental Geography.** It uses contemporary ideas to explain the structure of mental geography in the act of innovation, taking away the myths.

- **Creating Mental Contexts.** This summarises the theoretical basis for mindshaping in individual practitioners, using Boden’s work to represent collective thinking behind the theories.

- **Changing the Mental Contexts.** It summarises the role that experience plays in mindshaping.

- **Innovation in the Context of Practice.** It summarises the theoretical position for innovation in practice.

- **Mindshaping in Practice.** This section uses the examples of personal experiences to fortify the theoretical points made in the research: that if any innovation were to happen, it happens out of ordinary thinking and they are externally influenced and changes are incremental.

- **Mindshaping: Wittgenstein’s Perspective.** A loop-back to the Wittgenstein’s perspective to further the discussion of mindshaping in practice.

- **Shaping the External Context.** This discusses the necessity of shaping the external context and the ways it is done.

- **Conclusion.** A picture of the findings in relation to present culture, a summary of what takes place in mindshaping, and calling upon of metaphors to reach beyond the mental limits.
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1. **Wittgensteinian Background**
The search for a structure for architectural innovation as contained in the APPENDIX started as a logical process, which was intended to be objective and rigorous. At the start, the logical process was influenced by Wittgenstein’s early work, *Tractatus Logico-Philosophicus* (1921), adopting Wittgenstein’s method of categorising his explanation into numerals and sub-numerals. The contents eventually followed the attitude of Wittgenstein’s later work, *Philosophical Investigations* (1953), which was like a practical guide to knowing, able to encompass the subjective as well as logical matters. The use of Wittgenstein aphorisms as a springboard was adopted as a continuum of my Masters thesis, which was about critical meanings in architecture, and it was felt that Wittgenstein was suitable to launch the PhD.

Early on in the research, it was felt that Wittgenstein’s *Philosophical Investigations* alone had little to contribute to the search for the structure of innovation and instead had more to do with the search for meaning. So, *Philosophical Investigations* was at first abandoned early on, however, as the search deepened, Wittgenstein was rediscovered and his even later remarks, such as those found in *Zettel* (1980), which was published posthumously decades later, were found to contain ideas that resonated with contemporary scholars like Csikszentmihalyi, who would popularise the word ‘flow’, for example, which rang close to Wittgenstein’s ‘Fluß’. Another modern scholar, Collins, talked about ‘emotional energy’, the description of which was similar to Csikszentmihalyi’s ‘flow’ (APPENDIX, p 48).

It is still ‘commonly’ assumed that Wittgenstein personifies logical descriptions. This assumption is made due to the logical construction of his first thesis,
*Tractatus Logico-Philosophicus*, to the point that it became a factor for the emergence of logical positivism in the early twentieth century. Wittgenstein early thesis also contained many metaphysical axioms, which were curiously overlooked by the positivists. This became more profound toward his later years when metaphysical descriptions began to overtake logical descriptions to the point that Wittgenstein’s later descriptions could only be appreciated from the perciipients own experience and intuition.

For example, with the use of the word ‘flow’, Wittgenstein infers that words have ‘flow’ in the train of thought during a conversation – there is something that goes on in the speaker’s head to make spoken or written words significant. He counsels that, “Words only have meaning in the river of thought and life” *(Wittgenstein, 1980: S 174)* – The river metaphor infers that the significance of a particular utterance is placed within the stream of conversation in the ordinary use of language. In Wittgenstein’s ways all constructs of meaning happen in the mind.

It is in another posthumous collection of Wittgenstein sayings, in *On Certainty* (1969) that he used visual equivalence that is closer to the visiocentricity of architecture. Here he sets his river image as a visual illustration of the nature of boundary of every assertion and also why the background is so hard to describe. The passages begin with the sketch of a word-picture, which is a graphic depiction of his understanding of the world and our place in it. The use of imagery is a consequence of his conception of the word-picture, which can be described in terms of myth, or of the rules of a game that we know mentally but not articulated. This is not explicit analysis because the rules are implicit and
normative rather than explicit and factual: any explicit formulation will not draw out the mentally embedded [ref. APPENDIX, p 16].

Wittgenstein suggests that we did not get the picture of the world by satisfying ourselves with correctness; instead we distinguish between true and false against the ‘inherited background’. Skirting on the metaphysics, Wittgenstein describes the word-picture as part of mythology (therefore unstable and changeable) and the role of the word-picture is like that of rules of a game, which is learned purely practically [through experience], without learning any explicit rules.

He suggests also that propositions (literary, visual, or otherwise) were not hardened but fluid; and that this relation altered with time, in that: “the fluid propositions hardened, and the hard ones become fluid…. The mythology may change back into a state of flux; the river-bed of thoughts may shift. But I distinguish between the movement of the waters on the river-bed and the shift of the bed itself; though there is not a sharp division of the one from the other” [Wittgenstein, 1969: SS 96, 67].

And to further strengthen the idea of indeterminacy instead of the certainty of logic, he suggests that: “But if someone were to say ‘So logic too is an empirical science’ he would be wrong. Yet this is right: the same propositions may get treated at one time as something to test by experience, at another as a rule of testing…. And the bank of the river consists partly of hard rock, subject to no alteration or only to an imperceptible one, partly of sand, which is one place now in another gets washed away” [Wittgenstein, 1969: SS 98, 99].
Through the assertions above, Wittgenstein holds that change is always possible against a background. It implies indeterminacy in the world; however some things must remain constant. Wittgenstein is to later point to the primacy of the background and its indeterminacy. “If a pattern of life is the basis for the use of a word then the word must contain some amount of indefiniteness. The pattern of life, above all, is not one of exact regularity (Wittgenstein, 1982: S 211). Once indeterminacy is introduced into the picture, the boundary between the subjectivity of the background and the signifiers in the foreground is blurred. He then says in another posthumous collections of axioms in *Philosophical Grammar,* “.... In our study of symbolism there is no foreground and background; it isn’t a matter of tangible sign with an accompanying intangible power of understanding” (Wittgenstein, 1969a: S 43).

The background that Wittgenstein discusses about is an indeterminable pattern of life, which is causal to our thoughts: “Behind our thoughts, true and false, there is always to be found a dark background, which we are only later able to bring into the light and expressed as thought” (Wittgenstein, 1979: 36).

From the layperson’s perspective, what then is this ‘background’ that Wittgenstein speaks about? The idea is repeated in several of Wittgenstein’s posthumous publications. Again in a later publication, Wittgenstein is to similarly assert that: “We judge an action according to its background within human life, and this background is not monochrome.... The background is the bustle of life. And our concept points to something within this bustle.... And it is the very concept ‘bustle’ that brings about this indefiniteness. For a bustle only comes about through constant repetition.... How could human behaviour be described? Surely only by showing the actions of a variety of humans, as they are all mixed up together. Not what one person is doing now, but the whole
hurly-burly, is the background against which we see action, and it determines our judgment, our concepts, and our reactions” (Wittgenstein, 1980a: SS 624-626, 629).

Wittgenstein’s later works assert that the boundary between the background and the explicit foreground of symbols is uncertain, shifting and changing. The uncertainty provides a framework for literature reviews in the APPENDIX based on pitting the ostensive against the hidden. The ostensive, which has its basis on Wittgenstein’s *Philosophical Investigations* becomes the protagonists and the hidden become the antagonists. These are contained in the APPENDIX.

2. **The Topology of Innovation**

In parallel to the chain of investigation along philosophical works that started with Wittgenstein, Leon van Schaik’s *Mastering Architecture* (2005) sparked another chain that was linked to Randall Collins and Howard Gardner, and then to several others. Margaret Boden seemed to provide the clearest picture to what the scholars of this shared perspective were collectively saying.

With reference to the works of contemporary scholars, the APPENDIX at pages 152-158 has arrived at such a conclusion: That the process of innovation is accessible to anyone and that innovators are made and not born. This was first felt in the works of Randall Collins, particularly his Interaction Ritual Theory [ref. Collins, 2004: *Interaction Ritual Chains*, 1998: *The Sociology of Philosophies*]. This also came across unabatedly in the works of Csikszentmihalyi [eg.

Asserting further that innovators are made, Boden distils and asserts that creativity requires the hidden combination of unconscious ideas, with four phases of creativity: Preparation, incubation, illumination, and verification and, she points out that the arts and the sciences achieve their innovations in broadly comparable ways [ref. Boden, 2004: 29, 31]. Distilling and clarifying the mechanisms of creativity further, she points to the necessity of context/culture that supports either: psychological creativity, which she calls 'P-creativity' or, historical creativity, which she calls 'H-creativity'. Both, to her, define creative ideas created by people: "The psychological sense concerns ideas [whether in science, needle work, music, painting, literature....] that are surprising, or perhaps even fundamentally novel, with respect to the individual mind which had the idea.... The historical sense applies to ideas that are novel with respect to the whole of human history.... But whichever type of creativity is involved, it's historically creative only if no one has thought of it before.... Similarly, people can be credited with creativity in two senses. Someone who is P-creative has a [more or less sustained] capacity to produce P-creative ideas. A H-creative person is someone who has come up with one or more H-creative ideas [Boden, 2004: 43].
3. Changing the Mental Geography

Boden suggests that most of artistic innovation is P-creativity (psychological creativity), rarely reaching H-creativity (historical creativity). When H-creativity is arrived at, it often falls by the wayside due to cultural resistance. Boden suggests the change of mental geography for its acceptance: “An H-creative idea sometimes involve such radical change in mental geography, requiring such a different sort of map to represent the new range of computational possibilities, that many people minds cannot immediately accommodate it. And artists of course, cannot bludgeon their critics with independently verifiable facts. They can only seek to persuade them that the mental exploration is intelligible, and therefore – like climbing Mount Everest – justified for its own sake (Boden, 2004: 74-5).

As inferred by Boden, artistic innovation just as architectural innovation is justified for its own sake; it is not verifiable nor can it provide tangible benefit to mankind. It takes a cultural change, or a change of mental geography that can result in the acceptance of an innovation that has no quantifiable value. Boden considers the mental geography as ‘structured space of computational possibilities’. Echoing Wittgenstein, she correlate the movements in the mental geography to a game of chess: “…. ways of selectively – insightfully – moving through the space and/or of transforming it, sometimes by changing their heuristics. ‘Protecting your queen’ directs you into some chess-paths and away from others. And ‘consider the negative’, if applied at a deep level of generative
system, can transform the space so fundamentally that very different sorts of location are created and many previous locations, indeed whole regions, simply cease to exist” (Boden, 2004: 89).

For an innovative idea to be accepted, the architect relies heavily on the scripts in the minds of the audience. To accept even a basic innovative idea, there are many mental gaps that need to be filled as the project is presented explicitly. Reciprocally, without the script-based expectations, the audience would not be able to grasp the creative twists. The audience’s own creativity is to map the conceptual space propositioned by the architect onto a novel, although fundamentally similar mental spaces that are previously defined. To arrive at H-creativity, Boden suggests looking beyond the physical to the program, for example, she suggests a focus on function, which creative architects normally already do: “An architect can focus on functional instead of physical issues. If what one needs to fulfil the various domestic functions carried on in a house is a number of clearly-defined and interconnected spaces, then physical walls are not always necessary. Indeed ‘focus on the function’ is a heuristic that is very often used by architects, designers, and creative engineers to escape from stereotyped thinking” (Boden, 2004: 113).

Gardner says practically the same thing as a strategy to persuade a resisting audience with the offer of an innovative work: “It is not difficult to make an innovative work of art, but it is challenging to create a work or a series of works that resonate with informed audience members and, eventually, with a larger public. Indeed, the twentieth century witnessed any number of artists who were a success with the most sophisticated connoisseurs but who never resonated with the general audience. In our terms, the resistances to these innovative
works prove too great. The artist who would break through to popular acceptance must somehow neutralise the resistances – much as a persuasive storyteller manages to undermine the prevailing counterstories” (Gardner, 2004: 123).

Boden’s prevailing interest is artificial intelligence and her explanation on the workings of the creative mind and means of convincing an audience to accept innovation is slanted toward computational psychology. Pages 80-90 of the APPENDIX explain this in detail. She however draws upon recent knowledge of neural networks, and as Frith [ref. Frith, 2007] suggests through medical research, that everything we know, whether it is about the physical or mental world, comes to us through our brain. From the perspective of computational psychology, creativity is universal and non-magical, and it is natural feature of the human mind, which can be understood in psychological terms. To Boden, creativity is non-mystical, it is part of a common mental process which rely on the ability of neural networks: “We must consider the ability of neural networks to learn to associate (combine) patterns without being explicitly programmed in respect to those patterns…. A computational system that could pick up a regularity, perhaps a very subtle one, without such pre-knowledge…. Likewise a mechanism that could spontaneously link – or even merge – concepts from different sources” (Boden, 2004: 137).

Taking away myths about creativity, Boden suggests that innovators do not have ‘special powers’; only a highly developed version of the power we all share (ref. Boden, 2004: 267). Boden suggests that creativity draws from ordinary human abilities such as: noticing, remembering, seeing, speaking, hearing, understanding language and recognising analogies. “We apply the ability to
redescribe our existing procedural skills on successive representational levels, so that we can transform them in various ways” (Boden, 2004: 261). In any event, we need to do all the above in order to manage our everyday lives, as well as the ability to recognise things all at once. Boden suggests that the difference between the innovator and the rest is that he or she could do it better. Referencing to the field of art (and therefore architecture), Boden suggests that the innovator firstly has more extensive knowledge of the relevant structures. Memory, as noted earlier, stores items in the conceptual spaces within the mind, “The more richly structured [and well-signposted] the spaces, the more possibility of storing items in a discriminating fashion, and recognising their peculiarities…” (Boden, 2004: 268).

Sharing the same perspective as Csikszentmihalyi, Weinsberg, Collins and Gardner, Boden suggests that H-creative people have a better sense of domain relevance than P-creative people. Within the domain, she deduces that their mental structures are more “wide-ranging, more many-levelled, and more richly detailed than ours. And their exploratory strategies are probably more subtle, and more powerful” (Boden, 2004: 270). Elaborating on this, “These rare individuals, then, can search – transform – high-level spaces much larger and more complex than those explored by the other people. They are in a sense more free than us, for they can generate possibilities that we cannot imagine. Yet they respect constraints more than we do, not less. Where we can do nothing, or at best mentally toss a coin, they are guided by powerful domain-relevant principles onto promising pathways which we cannot even see” (Boden, 2004: 270).
Although Boden eschews anything supernatural about creativity, she however accedes that there is something about the innovator’s brain that makes it exceptionally efficient at picking up domain regularities and exploring them at that and that there is some evidence that artistic ability is to some extent innate. She explains that inborn factors may help certain individuals to develop the conceptual structures required and that some structures may even be inaccessible in the absence of the innate ability. In the absence of the innate ability, no amount of education or commitment can make the person into an innovator. Boden thinks that the innate abilities are more efficient mechanisms that everyone shares – not something profoundly different [ref. Boden, 2004: 275].

To demonstrate this in architecture, Boden takes Frank Lloyd Wright as an example, taking away the myths. She explains that Wright’s works are explicit and can be explained. Boden first of all dismisses the notion that Wright’s works are intuitive. She derides the view of other scholars (eg. Koning and Eizenberg) that there is something mysterious (‘occult’) about Wright’s ability. She instead argues that Wright’s works merely capture the shape grammar of prairie-style designs. Wright’s architectural grammar allows a range of choices allowing the architect to move into various regions of conceptual space. For example, as the ‘grammarians’ responsible put it, varying the number of fireplaces generates ‘a veritable prairie village of distinct but interacting prairie-style designs’, all within a single building [ref. Boden, 2004: 310].

To Boden, what Wright had done was to show “the full potential of a given genre even though he did not invent it in the first place” [ref. Boden 2004: 269]. Taking another architectural example, she describes the Palladian villa as a
general class of conceptual space, having a rectangular outline and preferred numerical proportions and dimensions, with the internal walls dividing the plan into smaller rectangles, and the rooms are positioned and proportioned only in certain ways. Similar to Wright, Palladio essentially used his basic theme to design many variations. To Boden, the Palladian program wants a ‘shape grammar’ that will generate only allowable ['grammatical'] structures [ref. Boden, 2004: 308-9].

In Boden’s texts, ‘shape grammar’ and ‘grammatical structures’ are operational through conceptual spaces, mental maps, frames and semantic nets. All of these are visually interpreted, just as the examples used by Boden are visually orientated. Her interpretations are also categorical, structural and ostensive in the sense that the discussions do not bleed into matters that are subjective, such as discussions on consciousness. Her goal is to provide a material and ostensive description of creativity so that it can be accessible and attainable to everyone. Refer to APPENDIX, pages 111-127 for technical interrogation on thought structures, particularly to works by Briggs and Chomsky. Briggs work on ‘Feeling Tones’ and Chomsky’s ‘Deep Structure’ and ‘Surface Structure’ resonate closely with Boden’s computational psychology.

4. Creating Mental Contexts

Contemporary scholars on creativity, including Boden and the others already mentioned, advocate a period of concentrated practice by the creators before innovation is achieved. “In short, a persons needs time, and enormous effort to
amass mental structures and to explore their potential” (Boden, 2004: 270). According to Boden the time needed is around 12-years. It is unimaginable that inborn factors do not play a part to develop the conceptual structures required, so Boden suggests that the innovators simply have more efficient versions of the mental mechanism we all share, stressing that the ability to innovate is not a mysterious one. Leon van Schaik in *Mastering Architecture* mentions the period of concentrated practice as the 10-year rule. Collins, Gardner, Weinsberg and Csikszentmihalyi suggest the same. The 10-year rule is traced back to the work of Chase and Simon from their work on chess mastery as an extension of De Root’s earlier work on the same subject (ref: Weinsberg, 2006: 173).

Briggs suggests that generally ‘a long time’ is required before the creator’s context shifts enough for the *magnum opus* to emerge. Cultivating the ability to think oppositionally allows the motivator to transform contexts, break prevailing operating mindset to plumb the materials from new angles. For example in architecture, Wright had taken 12 years from his first break from classicism to the first Prairie House (ref. McCarter, 1977: 35) and Palladio’s formative years was 12 years (ref. Ackerman, 1966: 31). Briggs description of what happens echoes Boden’s ‘conceptual spaces’ in greater detail. What is achieved through the shift of mental context according to Briggs, with reference to the ‘inward voice that decides’ is that: “The whole movement to evolve that inward voice entails linking feedback loops which join talent and vision, with the problem or material the creator is focussing on, with insight strategies, and with the tradition of the creative field. These interlocking loops, at a certain point (indicated in some creators by a ‘crystallising’ moment) interact to form what system theorists call a ‘self-organising structure” (Briggs, 2000: 265).
The shift of the mental context is a continuous one, evolving from one *magnum opus* to the next. Towards the end anything can happen – the vision may be different in the early stages from the late stages. Many things happen during the slow shift of the mental context according to Briggs: “Vision evolves, the creator evolves, the *magnum opus* leads to a new *magnum opus* – otherwise the creative life dies. The completion of a work, the acceptance of a work by its intended audience, changes in the creator’s personal life, historical changes – all have an effect on the further development of the creative enterprise…. Anything can happen. The vision may be different in the early stages from the later stages” (Briggs, 2000: 268).

5. Changing the Mental Context

In simplified worldview, what was described as exemplified by Briggs and also by Boden, was heightened experience and building up of mental capital. Both acknowledge that innate ability or talent play a part. Real world practice suggests that these are incomplete to arrive at the point of innovation. What the scholars have offered are merely theoretical positions. Gadamer, for instance suggests that, “The truth of experience always implies an orientation toward a new experience. That is why a person who is called experienced has become so not only through experience but is also open to new experience” (Gadamer, 2004: 350). Here, Gadamer infers that a person can be radically undogmatic because of the many experiences and knowledge he has drawn
from them. From this perspective the dialectic of experiences enable openness and invention.

Similar to Boden’s P-creativity and H-creativity, Gadamer suggests that historical distance validates innovation, but it is psychological experiences that produce innovation. With this comes the importance that he places on ‘practice’, which he regards as a necessity over ‘method’. Compared to practice, method merely creates confusion. Practice could negotiate with things that are considered as indeterminate to arrive at the ‘concreteness of the case’ with ‘highest of universality’, to guard against ‘technological self-understanding’, which he associates with method. This is a continuum of Bacon’s laboratory method, which leads to knowing by experience and observation, as opposed to speculation through logical deduction. This is generic in Asian thinking as exemplified by Lin Yutang’s writings [Lin, Y: 1935, 1937] and also in Wittgenstein’s later philosophy: “Thoughts rise to the surface slowly, like bubbles. [Sometimes it is as though you could see a thought, an idea, as an indistinct point far away in the horizon; and then it often approaches with astonishing swiftness]” [Wittgenstein, 1977: 63e]. For further amplification, refer to Richard Nisbett’s The Geography of Thought (2003).

6. Innovation in Context of Practice

With regard to architectural practice, the dominant thinking that has emerged from the studies made on contemporary scholars as recorded in the APPENDIX and as outlined above is that:
Design in architecture emerges out of ordinary thinking and that experience serves as the crucial component on which creative thinking operates.

Ordinary thinking involves the following:
1. Remembering.
2. Imagining.
3. Planning.
4. Deciding.

The general characteristics of ordinary thinking are as follows:
Our thinking has a structure in the sense that our thoughts follow one from another and are related to one from another.
1. Our thoughts have a past and ordinary thinking depends on our knowledge capital.
2. Concepts direct ordinary thinking and it is a top-down process.
3. Our thoughts are conditioned by the external environment. It could equally be said that our ordinary thinking is culturally influenced.

What then does an encouraging environment need to have? (Ref. van Schaik, 2005: 235):

2. A patron who understands the need for formal ritual behaviours of a community.
3. A process of knowledge-capture that ensures that cultural capital is not lost.
4. A cockpit for the discourse that feeds the development of three clearly different positions or fields within the domain”.

What are the characteristics of architectural innovation?

1. The architecture is novel and has value for both the practitioner and for the culture. [Contemporary scholars also qualified that all creative products are less than completely novel].

2. The architecture is unconventional in that it has rejected or modified prevailing ideas. [Contemporary scholars also qualified that all creative products are incremental advances].

What distinguishes an innovator to that of the ordinary person is as follows (see also page 220 of the APPENDIX):

1. The innovator has a developed expertise in problem finding and that the process is heuristic [rather than systematic].

2. There is a period of coaching, incubation and mastery, sometimes known as the 10-year rule [or, 12-year rule]. It is an extended period of analysis and experience.

3. Having a high degree of self-discipline, the ability to delay gratification, a tolerance for ambiguity, and perseverance in the face of frustration and lack of success.

4. Independence of judgment, a high degree of autonomy, an internal locus of control, a high level of self-initiated striving of excellence and absence of dependence on social approval.

5. Willingness to take risk.
7. Openness.

Costa and McCrae (1985) made distinctions among several different kinds of openness, depending on the type of experience that was the focus (ref. Weinsberg, 2006: 509):

1. Openness to fantasy: refers to a willingness to explore one’s inner world and to let one’s mind wonder.
2. Openness to aesthetics: refers to an appreciation for artistic expression.
3. Openness to feelings: involves a willingness to accept one’s emotions, both positive and negative.
4. Openness to actions: refers to willingness to try new activities.
5. Openness to ideas: is intellectually curious and willingness to consider new ideas.
6. Openness to value: refers to a willingness to examine the fundamental values on which one bases one’s life.

7. Mindshaping in Practice

In linking practice with research, I would use my own practice to examine the remark that has emerged out of this research. That:
Design in architecture emerges out of ordinary thinking and that experience serves as the crucial component on which creative thinking operate.

During the course of the PhD, I had to occasionally examine the historical works of the practice while attempting to make practical sense of the body of writing – particularly the writing that now appears in the APPENDIX. Nearing the end of the writing, it gradually appeared that the character of practical work was changing in tandem with my own psychological state as well as with the prevailing cultural milieu. Some of the changes had to do with my prevailing activities outside of practice. Wittgenstein aptly described what seemed to have happened when he remarked that: “Thoughts rise to the surface slowly, like bubbles. [Sometimes it is as though you could see a thought, an idea, as an indistinct point far away in the horizon; and then it often approaches with astonishing swiftness)” (Wittgenstein, 1977: 63e).

In capturing the characteristics of the office’s works, I have categorised them into the following:


This was during the early years of the practice, when Malaysia underwent massive industrialisation and the country was having a GDP growth rate of over 10% between 1990 and 1997. It was a time when the construction industry was led by governmental ambition, fuelled by the vision and an economic target that the country could reach first world status by the year 2020.

At the time the Kuala Lumpur city skyline was filled with tower cranes to the point that the Prime Minister remarked in jest that the country ought to adopt a new logo, that of the ubiquitous tower crane. It was also a time that the industrialised countries were undergoing an economic slow down, and many expertise and skills found their way to the country. There were floods of migrants seeking work in the country, with blue-collar workers coming mainly from Indonesia, Thailand and the Philippines and white-collar workers from mainly Europe, Australia as well as the Philippines. Malaysia became one of the popular destinations for the international architectural carpetbaggers.

It was during this time that a new generation of architectural practices, with their own individual identity emerged from a generic kind of corporate architecture that dominated the Malaysian architectural field. A handful of medium-size practices were already making an impact in the Asian region. Our practice was then identified as one of the emerging young practices. In 1995, our practice was identified by the Malaysian Institute of Architects as among ‘The New Generation’ together with 10 other emerging practices in a publication that coincided with an exhibition at the Institute.
Architectural activities in the country captured the attention of the international architectural media. Together with several other Asian practices our work appeared in the September 1994 issue of the Architectural Review. The project that was featured was the Jerai International Park project which remained unbuilt.

Being inclined toward logical deduction, and in the pursuit of the ‘perfect’ grand narrative, we were then reducing architecture to the optimal ‘singular statement’. It was the quest of the single story line that ‘tells a perfect story’. On hindsight it was a mistake as it had taken away the variety of narratives in architecture. Architecture was treated as objects rather than experiences and form was taking precedence over spatial quality. It was the architecture of the spectacle, being thin on meanings.

Jerai International Park was to be the first comprehensive experiment on sustainability in the country and one of the first in the world at the time. It was the time before worries over global warming became an issue and the time that preceded the ‘green building index’. The various components that make up the measurement of the ‘green building index’ today, such as rainwater harvesting, ways of producing energy for local use, local farming and the production of energy crops, low energy transportation and the control of radiant and convectional heat were all part of the programme for this development in the early 1990s. It was a typically ‘visionary’ and ambitious project, which was also to be self-funded – it was to be one of the projects that typified the ambition of the country at the time. Due to opposing political interest, the project did not materialise but caused political upheaval at the local state level instead.
Influenced by Girardet’s *The Gaia Atlas of Cities – New Directions for Sustainable Urban Living* (1992), together with British engineers, we conceived the theme of sustainability for the development. The practice was appointed to lead a team of designers, scientists and engineers to realise the green ambition of the project up to the point when the project was called off. While the master plan was conceived by the practice with input of expertise from various parts of the world, the intention was to firstly devise a framework with guidelines, and then only coordinate and let other designers carry out most of the packages. However, the projects which the office had design interest were the main stadium and the indoor stadium, which were to be the iconic buildings of the project.

**Project Description: The Main Stadium at the Jerai International Park**

The main stadium at the Jerai International Park was the flagship of the project and it was to exemplify the theme of sustainability. It was to be constructed with local materials within the site. The site on which the project sat was a large paddy field, which was soggy and flat with deep underlying bedrock.

The outer body of the stadium was to be built up with soil excavated from its immediate vicinity, forming a shallow cone, with external circulation formed out of a series of spiralling ramps, leading to entrance pods at various levels alongside the external surface of the cone. The cavities left behind by the excavations would become lakes for recreation around the site. The inner core of the stadium was to be an inverted concrete shell. This would become the stadium terraces for seating.
The stadium would eventually have a capacity of 60,000; however as there was no initial need for such a capacity, the stadium would be built up in phases, starting with a capacity of 20,000. When the stadium reaches its maximum capacity, it would be capped by a concrete roof made up of compression rings, and reinforced by teardrop indentations.

The stadium was reduced to a perfect, symmetrically spiralling plan, taking its cue from the spiral galaxy. It turned out also that the building was reminiscent of a volcano rising out of an exotic tropical setting, although this was not part of the design agenda. The shape was entirely formal and metaphorical – it anxiously avoided nationalist symbolism, which was popular with public buildings in Malaysia at the time. Still it was another symbolic building, an unconscious reflection of cultural norms at the time for public buildings. The building stood monumentally over a flat landscape, with the visual power that can derive with singular statements.

Devoid of phenomenology qualities, and devoid of multiple meanings, and without contextual prominence, a building of this kind is regarded as mistaken by the practice today. Other than its probable poetic symbolism, there isn’t much else to say about a building of singular statements. All other descriptions are technical, particularly, its structure of inverted shell and a ring roof, and its ecological qualities, which had yet to be tested at the time.

7.2 Search for Significant Form: Merely Game Playing With Light and Shapes (1996 – 1999)
With the calling off of the Jerai International Park project after extensive resources were ploughed into the project, a psychological vacuum was created in the practice, with a sense of dissatisfaction over the mere production of architecture without meaning. There was a psychological need to slow down the design process in search for a more fulfilling design agenda, moving away from instantaneous design solutions.

Examining past works, and the state of Malaysian architecture at the time, it was thought that part of the problem was the regular descent into symbolism and reductive forms that resulted in the loss of layers of meanings. The practice consciously looked toward an alternative formal approach, and we experimented with layered formal meanings.

This was the period when the country's most iconic buildings were built. Two among them were the Petronas Twin Towers and the Kuala International Airport, both of which were completed in 1998. Having experienced the failure of large projects, the practice avoided large projects and was contented with pursuing small projects and, for the first time, the practice began to design small houses. It was however a small industrial building (Wisma Laju) that gained international prominence, with its appearance in a 1998 issue of the Domus magazine.

**Project Description: Pat’s House**

However, the building that gained international attention first, and then widespread local attention was Pat’s House, which was completed in 1999. Pat’s House had specific philosophical, environmental and aesthetic agendas, where the function of the house was merely a by-product. It looked to the works
of past modernist masters but infused the work in a specific geographical locale. It was an experiment in formal inflection, where some of the major components of the building, like floor and walls were inflected to draw emotive responses on the part of the observer. The idea was that: as the walls turned upward and inflected in plan, the tonality of light would likewise change, causing a poetic rendition to what was seen. Tactility was avoided to keep the intention pure, in that it was to do with light on pure plane and form. Very atypical of Malaysian buildings at the time, the spaces were completely flexible and the house was considered as one large space when the large sliding panels for rooms were opened. The building appeared in several international publications. It did not fit in with recognisable Malaysian paradigm at the time and there was an obvious lack of refinement as far as tactility went, so when it was presented for local architectural awards, it did not receive any.

It was also the time when I expanded my own cultural milieu from local to a more global one. This was largely encouraged by William Lim through various activities in AA Asia. I also began to establish liaison with several Japanese architects of similar age at the time, particular a group led by Tetsuo Furuichi. Included in the group were Waro Kishi, Hiroshi Naito, Koh Kitayama, Hisashi Hara and Nobuaki Furuya. I organised an exhibition for them at the Institute of Architects in 1995 and visited their works in Japan the following year. All the while Frank Ling and Pilar Gonzales were in the picture as fellow learners and companions. When Furuichi and Furuya invited us as architectural critics at Waseda University in 1996, I realised that that there was essentially no difference in ability between Japanese students and Malaysian students, or for that matter, students from anywhere else. The studio sessions and the critique sessions seemed the same as in most other schools. It appeared that it was
cultural differences that set practitioners apart when they begin to operate in the real world after graduation. I had also just started a school of architecture at the University of Malaya in 1994 together with Professor Ghauth Jasmon, who was then the Dean of the Faculty of Engineering. I subsequently detached myself from the school except for taking studio classes for the later year students and occasional lectures. It is now reduced to occasional lectures. Although administration work was one of the main repellent for avoiding further involvement with the school, the other reason was the psychological need for time and freedom to make possible discoveries in architecture and to remain connected with practice.

The recognition of Pat’s House in the local field had taken several years although the Journal of the Singapore Institute had published it in 1999. With the appearance of Pat’s House in publications, and especially, works of those of the ‘New Generation’, modern works began to reappear in Malaysia, gradually replacing the then popular corporate vernacular. Being deep in formal games at the time, and not understanding the wider meanings of formal games, I began to be disillusioned with my own limitations, and the limitations of the industry to produce works of greater refinement. Patronage for experiments were limited at the time, most of which were given to better connected practices. Pat’s House exemplified the limits of the practice’s ability at formal games and in the end it was just a repeated play of the light and shapes. Options began to appear to take off from architectural practice, however, instead of taking up the options, I began an academic journey to find out for myself what entails critical meanings in architecture – I thought that it was the most important thing that architects need to do: That is, find out the critical
meanings of their work; otherwise, could there be gratification in the work of architecture at all?


The search for critical meanings in architecture became a work of a Masters thesis with the University of Malaya. There were enormous difficulties in the beginning as the university was unable to identify a suitable supervisor anywhere in the country. The only seemingly suitable supervisor was a professor of linguistics at the University of Malaya. This liaison was a complete failure as the work was not understood nor appreciated. The thesis was embarked without regular supervision, but two drafts were presented at different times and passed to several professors, including those from other universities. James Steele, who was visiting the university in 2002 together with his students from the University of Southern California, provided helpful comments. When the work was finally examined, one of the key examiners was a professor of graphic design from another university who had taken a year to examine the thesis.

The key inspiration at the early part of the research for the Masters thesis was Wittgenstein’s *Tractatus Logico-Philosophicus* (1921), which resonated with my frame of mind at that moment. All the while, I had the impression that the ideal process of architectural design was a logical construction, and that there was a certainty about the process of architecture, and that the key was to get the process right – In other words, state the intentions and then follow the
intentions like a logical guide toward the end. Contrary to popular assumptions [example, by the positivists] that *Tractatus* epitomised logical construction; it was not the case at all – instead it was more like a logical description of essence. Simply put, for example, Wittgenstein asserted that the ‘picture’, which we construct in our head, is uncertain – in other words, an illusion, which I saw with the assumed merits of architectural aesthetics at the time.

He said that the ‘picture’ had an uncertain nature and inferred that signs of communication are uncertain: There is no certainty in appearance, and by inference, there is no objective certainty. Ultimately he inferred that true meaning could not be constructed in a logical deterministic way. Hence, while generic society tended to give linguistic meanings to aesthetic things, including works of architecture as the way to quantify experience, there was something underlying the aesthetics that was indeterminate, incomprehensible and impossible to conceptualise through the mind. However, the early Wittgenstein left us with an opening, a path towards subjective reasoning: “What a picture represents is its sense” [Wittgenstein, 1921: S 2.221], and: “The agreement or disagreement of its sense with reality constitutes its truth or falsity” [Wittgenstein, 1921: S 2.222], and that we cannot rely on objective reality to depict truth: “In order to tell whether a picture is true or false we cannot compare it with reality” [Wittgenstein, 1921: S 2.223]. This inferred in architecture that, a picture of a work of architecture represented only the sense of it. The appearance of architecture told us neither its truth nor its falsity: we cannot depend on appearance. This discovery in Wittgenstein launched the Masters thesis in a journey which concluded with his later work, *Philosophical Investigations* [1953].
Wittgenstein’s reasoning that truth lies in the senses: “What a picture represents is its sense” opens the way to have architectural meanings through the senses instead of logical constructions. In practice, the architecture of the senses is translated into phenomenological architecture that gives priority to visceral experiences rather than logical deduction. It was during the writing of the thesis that the practice’s work shifted from intentional simple logical aphorisms toward a more complex and layered architecture with meanings laid over one another: House X1 was representative of this approach, although the games with light and shapes still remained in the design vocabulary.

**Project Description: House X1**

The house started as a logical construction: with an imaginary spatial cube used as a generator for other forms of the house. The generating cube was the courtyard and main entrance was located right at the middle of the house, at the centre of a sloping site. The most important room, being the living room was also a cube, which mirrored the invisible one next to it. The living room was then floated over another spatial cube, which was the undercroft. Another cube, being the family room floated over the courtyard. Passageways were then constructed to pass by the spatial and formal cube, and the other areas were either parked behind the passages or wrapped over or below the series of cubes.

While doing the logical constructions, we were mindful about the experiences that could come along with each individual space. The central courtyard became a tropical courtyard, with the inclusion of a pond and water feature emanating sound of water to gently break the silence. The sound and sight of water, foliage and sunlight at the courtyard permeate into all the other living
spaces and the spaces become connected. Compared to the previous buildings, this building has tactility along the walls and floors. When the rays of light wash against the walls or floors, the texture come across like the rough canvass of a painting.

Its formal expression contains a variety of meanings. The metal struts echo the bamboos that are planted along the fringe of the site to provide privacy. The more public elevation is fragmented and broken, allowing visual and spatial penetration, whereas the utility and private elevation is coherent but closed.

The route through the building contains a variety of experiences, with the route to the basement an external one, brushing against the leaves of the bamboo trees on the way to the floors below the living room. While the main route is straight, at the two ends of the house where the stairs turn, an unexpected experience is created.

The building is created from its context. The terrain provides the main constraint as the house straddles on the slope completely. The tropical climate enables the house to remain open most of the time. The large overhanging eaves enable the rain to be kept out while allowing ventilation to pass through. When all the doors and windows are shut, the house becomes a natural breezeway, with air discharging through a wind funnel at the top.

It could be argued that all the while, games are played in the design of the house – whether they are formal semantic games or experiential games. However, these are probably more than ‘mere games’ as they seem to have
phenomenological qualities about them. The deeper meanings that the house might have appear to contain phenomenological qualities.

The house was completed at around the time that the Masters thesis concluded. The studies of Wittgenstein remarks in *Philosophical Investigations* in the end also clarified the philosophy of ‘games’, which earlier was a point of grief in architectural practice when I thought that it was no more than ‘merely games’, which was not particularly meaningful. Wittgenstein’s revelation was simple, in that ‘games’ were simply an inextricable part of the mental makeup. It is rule-following and there is something commonsensical and obvious about it. He dismissively referred to it as simply ‘psychological compulsion’. At the end of the discourse on rule-following, he summarised the solution to the paradox of rule-following as follows: “The rule can only seem to me to produce all its consequences in advance if I draw them as a *matter of course*” [Wittgenstein, 1953: S 238].

Drawing further on Wittgenstein’s ‘games’, there were parts of the conclusion of the Masters thesis which were to become a springboard to interrogate innovation for this thesis. Wittgenstein’s insight affected the Masters thesis’ prognosis between ‘appearances’ and ‘beyond appearances’; between ‘external meanings’ and ‘internal (critical) meaning’; between ‘meaning’ and ‘a meaning’.... It is more than the change from mere rule-conforming to rule-obeying. The isolated innate model of architecture is not viable, as we cannot make sense of a rule independently of the *matter of course* reactions that we share with others.
In Wittgenstein’s ‘games’, whether the novice performs correctly or not is the central issue. Only under social contingent is the action of the novice correctable, wherein the ideological community is the arbiter of what is correct. This is possible due to the fact that the master’s own inclinations are in harmony with the inclinations and judgments of the community of which he is a part. His judgments have authority because they are representative of the judgment of the community. Therefore what we take as shared skills are obvious ways to proceed in the use of rules, paradigm and standards; otherwise nothing can function as a rule, paradigm or standard. Therefore there is no avoiding the inference that meaning is cultural.

7.4 Search for Structure of Innovation: Letting the Fly Out of the Fly Bottle (2005 - Present)

It was pointed out that aspects of the conclusion of the Masters are similar to Leon van Schaik’s Mastering Architecture (2005). Both touched on architectural innovation although Mastering Architecture had a clearer rendition of it. The PhD was to interrogate architectural innovation and to clarify its constants. The route toward the discoveries is found in the APPENDIX.

Although innovation is understood as having novelty and value, doing the PhD on the structure of innovation does not imply that it could be translated into practice in a magical manner. If anything, whatever innovation the practice could achieve is more like those of P-creative rather than H-creative – in other words the innovation is incremental rather than revolutionary. It is still the case that the architect works within the limits of cultural and material resources.
The case that we have chosen to remain in practice in Malaysia meant that we are limited by the culture and the abilities of the land. Let alone the limits imposed by technological limitations and the expectations of a still developing country.

There also is the complexity of choice. Some of the choices are driven by beliefs, especially those that pertain to style. It is the case that there is no absolute truth in styles (or ideologies). Historically, as with scientific revolutions, a dominant style eventually gets replaced by another, so style is not the issue with innovation. The practice has chosen a style that first began with the practice's early involvement with industrial buildings, which usually concerned large spans and the use of lightweight and low-budget materials. Due to familiarity with that kind of semantics, the architectural idiom continued with other types of buildings and eventually to houses.

What has emerged is that the current research has enabled clarity of thought in practice and the description of practice activities could likewise be clearer. The clarity of thought permeates all of life’s activities rather than that of practice alone. As Wittgenstein said: It is like letting the fly out of the fly bottle [ref. Wittgenstein, 1953: S 309]. Hence the rules of the ‘game’ that the practice chooses to play with has not changed. Instead, it is hoped that the game can be played better. If the architecture of the practice were to change, it would not be due to deliberate action, but due to something that has emerged over the course of concentrated practice of particular rules.

**Project Description: Amarin Wickham**
The earlier games with ‘light and shapes’, which were the *raison d’etre* for design for the office in the 1990s, have shifted into games with ‘shadows and spaces’ as an intentional approach for architectural design. Form became subservient to the effects of space. This was a conscious shift as priority was given over to phenomenology from the depthless simulacra. The Amarin Wickham project exemplified this shift.

The brief was relatively simple in that we only needed to achieve a specific nett saleable area for a condominium project. There was however a height limit of four stories for the project and the site was rather small for the saleable area to be achieved.

With priority given to spatial experiences, the project was designed from sections. The initial design agenda was to have each living unit having multiple volumes of spaces over several split floors. Also breezeways were to be created for each unit to avoid air-conditioning to the living areas. Landscape was to form an inextricable part of the living units, with each one accessible to its own garden. Pools and water were weaved into the landscape and connected to the units.

As the project progressed, it evolved into a ‘green’ project, with environmental concerns superseding other concerns. It then became a priority to be self-sustaining in energy use, with most of the energy harvested with photo-voltaic cells, which were then placed over the roof. Rainwater was harvested for filling up the pools and for irrigation purposes. Light wells were introduced into the basement car park to avoid artificial lighting during the day.
An expressed wish then evolved to have the building achieve a high ranking in the ‘green building index’. The main advantage at the time when the figures were being worked out for green certification was that the building had already faced away from the low angled sun, which was usually the major concern when designing for thermal comfort. The breezeways that were initially conceived at inception were also helpful when points for certification were to be compiled.

At the time when the Amarin Wickham was designed, the global culture for architecture was shifting from architectonic narratives to the green narrative. The project was one of those that was caught up with pressing cultural trends. The earlier projects like Pat’s House and House X1 were already designed with environmental concerns, but the attitude then were regarded as suitable response to climate and context. However this time, the green concern was seen as a scientific challenge with measurements taken to gauge its level of compliance with the ‘green building index’.

As form was secondary to spatial experiences and then to responses to climate, energy use and other green issues, the building became understated. The building was expressed only as far as the other issues were met. Even then, formal semantics could not be avoided, indeed: it was desirable that the building had a desirable formal language about it, which was fulfilled by meeting the functions. Hence, the building still had a modernist theme about it although style was not the issue.

8. Mindshaping: Wittgenstein’s Perspective
Practice matters above have demonstrated that we are mindshaped by our environment and by the culture around which the practice operates. Just as design in architecture normally emerges out of ordinary thinking and that experience serves as the crucial component upon which creative thinking operates, mindshaping is an ordinary event which shape every aspect of human lives. It is gradual and not instantaneous, and it is associated with practice and training.

Wittgenstein provides explanations for the gradual ordinary process of mindshaping:

From the perspective of his later philosophy, for example, *Philosophical Investigations* (1953), as opposed to *Tractatus* (1921), logical purity is diminished whilst normal everydayness is increased, in order to satisfy real human needs: unreal problems in the real world thus gives way to the rearrangement of what we already know.

In practical terms, we are thus required to be open, to accept for instance that: works of architecture belong not to what we are led to think in logical terms, but to something else, that belong to the natural world. For example:

- Architectural knowledge or belief does not have a high degree of certainty; it is instead a normal construct of things that are taken for granted.
- Natural architectural languages emerge from corporeal responses to phenomenon.
In the ordinary ways of doing architecture, we are relieved of having to pursue unreal, cerebral problems. Therefore, following Wittgenstein’s later philosophy, if the descriptions of the ordinary ways of doing things are done with careful considerations, there is no inclination to pursue unreal problems. This follows Wittgenstein’s remark that, “A six-year old boy knows as much about the foundation of mathematics as Bertrand Russell does”, suggesting that analytical logic is completely on the wrong track.

In his ‘new’ way of thinking, Wittgenstein suggests that logical purity misleads us, as its direct piecemeal applicability is unsuited to the ordinary ways of thinking, which has greater formal universality. Natural creativity can only come about from a whole system whereas logical purity imposes an abstract picture that must drift further and further from reality, whereas in the rearrangement way, reality is considered as a whole.

Practitioners often find the dichotomy between theory and practice perplexing. Often enough, the practitioner is unappreciative of architectural theory due to its lack of relevance in the real world, as Wittgenstein suggests, things are done as a matter of course. On the other hand, knowledgeable observers are aware that knowledge of theory does not necessarily result in commendable architecture or habitat, such as those pointed out by Jane Jacob and Tom Wolfe. The twentieth century has witnessed the resistance to architectural purity turning into ambivalent talk of ‘humanistic’ and ‘ethical’ architecture, whereas pure theory remain part of the making of mathematics and science.
Through Wittgenstein’s ‘new way’, architecture is offered a way to cohabit theory and practice. Wittgenstein infers that Russell’s analytical way, or for that matter, the *Tractatus* way, which are unquestionably followed in mathematics and in much of science are wrong because they get further and further from practice for the sake of arithmetic and logic. By remarking that, “a six-year old boy knows as much about the foundation of arithmetic as Bertrand Russell”, he is expressing an idea that there is no real unity between the common sense world and mathematics and logic: There is only *theoretical unity*.

From the perspective of Wittgenstein’s ‘new way’, the pitfalls of the *Tractatus’* or the analytical ways are as follows:

- It falls apart the *public* and the *theoretical private*, each into its own different world.
- It falls apart in *theory* and *practice*.
- It falls apart *logical points* of the objects and the percipient.
- It falls apart even the *theory* and the [say, between mathematics and logic].
- It falls apart the *ideal* and the *logical* derivations. The illustration for this in architecture is as follows:

If we were to take an ordinary architectural sentence, *Concrete is as good as bricks* and, let us ignore for now, the technical complications of (and between) *concrete* and *bricks* in terms of their qualities and just treat them as point objects. *As good as* is the symbolic essence of the sentence; we however have an insurmountable task of translating the symbolic essence into real relations. If we were to translate this in abstract terms, it becomes:
Concrete is as good as bricks as CGA-B,

this is unsatisfactory in saying what is meant in ordinary terms. Thus logical reduction of ordinary reality to simple abstract logical points, although structurally correct, nowhere near represents what is meant.

Logically reductive method does not work for things of the aesthetics: it is impossible to find a simple coordinate space for colours, which would otherwise be a simple thing in space and time, in ordinary human terms. Wittgenstein remarked: “But don’t we at least mean something quite definite when we look at a colour and name our colour-impression? It is as if we detached the colour-impression from the object, like a membrane. [This ought to arouse our suspicions.]... ‘I know how the colour green looks to me’ – surely that makes sense! – Certainly: what use of the proposition are you thinking of?” [Wittgenstein, 1953: SS 276, 278].

Wittgenstein’s remark points to an agreement between thought and reality, and in order for thought to reach up to reality, it must be correlated to objects of the world. For instance, to establish the colour of an object we point to it to say, ‘this is red’ or, ‘this is not red’: what one points at establishes the connection between a thought and the object of the world. In other words, the percipient decides on what is the case, if the object pointed at serves as the sample of the colour [ref. Wittgenstein, 1953: S 429].

Hence, in design, intentionality would lead us to mental states that involve systems of ‘belief’ and expectation’. Intentionality in design is therefore psychological, even if the word is not used in the normal exposition of
Wittgenstein’s thoughts. Rules are then made to underpin the subjectivity of interpretations in conditions of psychological state.

If design innovation is the result of insight, it must then have been attained through the process of learning; instead of say, through a mystical encounter. But first of all, learning is seen as a process of rule following: “The rule can only be seen to me to produce all the consequences in advance if I draw them as a matter of course” (Wittgenstein, 1953: S 298).

Hence the process of learning is being trained in a technique, and to ensure reifying the technique, mastery of the technique is required. “It may now be said: ‘The way the formula is meant determines which steps are being taken’. What is the criterion for the way the formula is meant? It is, for example, the kind of way we always use it, the way we are taught to use it” (Wittgenstein, 1953: S 190).

By the process of training and learning, an individual comes to master a technique of using signs. There is thus a social angle to this suggestion as there is a master and there is a novice who learns from the master. What it meant for architecture is as follows:

- The architectural novice is dependent on the rules of the community of masters. In architectural performance, it is not merely the interpretation of the rules, there must also be an exercise of the right kind of disposition – acting from one’s own competency and understanding.
- The novice is not required to justify; he needs only to get the rules right – the rules provide for the legitimacy.
- Questions of knowledge and justification arises only against the background (of the ideological community) of which is fully taken for granted. This provides the bedrock for practice.

In architecture, the novice’s submission to the community’s rules is both what happens in fact and what is required to constitute a form of life, and thus provide the context in which knowledge proper can be pursued. In Wittgenstein’s perspective, the master speaks for the community, without the necessity to justify, as he is autonomous, although the autonomy is grounded in the ideological community [ref. Wittgenstein, 1953: SS 196-239].

Therefore in the Wittgenstein’s perspective, where insight is passed from master to novice through rules and training, we have no way of understanding how insight is acquired except through a process of training: instantaneous acquisition of insight, or spontaneous ‘awakening’ is unfeasible. Instead, the acquired skilled is patterned activity of the individual within the appropriate context. Rule-following is structured social practise of the community – the ‘ideology community’ as described above, where activity is normative activity.

The individual alone hasn’t the resources for creating the context within which the action can be deemed correct or incorrect; it is only in relation to the structured social practice of the [ideological] community that the individual can engage in normative activity. Therefore, with regard to insight, insight cannot take place without a stage setting, without a relevant context. Wittgenstein infers that the novice is trainable only within a social [or ideological] context in which the ability or competence to being taught in that already mastered by the teacher. When learning occurs, it involves norms and stage setting.
It follows that it is necessary to have the system of background beliefs, actions and competencies, the complex pattern for the normative practise of architecture forms part of the culture, and understood within the culture. It is physically necessary for the culture to provide for the actual training and disciplining of the novice without which the novice simply would not, as a matter of fact be able to continue. Ostensive training is the causal ground for the development of knowledge capital necessary for the mastery of any genuine normative practice.

Rule-following infers regularity over time, and the novice behaves like the master in thought and in action as part of the pattern. A single instance of following a rule is merely a superficial resemblance. In architecture, the reality of rules requires that they be part of actual practices. Rules that have never been acted upon can only be the exception, and their intelligibility turns on assimilating them to rules that are part of actual practice. The collective following of rules is the cultural practice.

Solitary practices are cultural practices in that the context of regularity and agreement must be provided by a community: that is by a group of people acting, judging and behaving in harmony. They owe their identity to this shared background even though an individual may carry them out at a time – hence, without conformity to a group at bedrock level, normative is impossible.

From the Wittgenstein perspective, there is something commonsensical and obvious about rule-following: he dismissively refers to this as ‘psychological compulsion’: “For we might also be inclined to express ourselves like this. We
are at least under a psychological, not a logical compulsion” (Wittgenstein,
1953: S 140). At the end of the discourse on rule-following, Wittgenstein
summarised as follows: “The rule can only seem to me to produce all its
consequences in advance if I draw them as a matter of course” (Wittgenstein
1953: S 238).

Hence, from the Wittgenstein’s perspective, it can be deduced that:

1. Insight is learned and is not innate, nor is it mystical.

2. In architecture, it is developed out of agreement within a community of
shared ideology. It infers that meaning is legitimised within a social and
cultural context and not something that is known in isolation. Architectural
training into practice is the means by which the individual is brought into the
ideological community: the training is as much a matter of testing (judgment)
as it is teaching. There is no matter of fact as to what is learnt, as this is
dependent on the master-novice relationship: this is due to the absence of
objective process of testing the effects of teaching, as there is no fact of the
matter as to what is learned. As an extension, the novice cannot know what
he has mastered independently of his context, especially with respect to
bedrock practices where is no criterion of use and no justification
independent of what practitioners find obvious.

3. Evolving from this, although innovations are regarded to be above rule-
obeying, they are still governed by practice patterns.

4. Hence, what the innovator does is to construct new rules within the practice
patterns that are recognised by the ideological community, which is the
architectural field.

5. Architectural innovation is still a learning; not something innate.
In the act of mindshaping, to first obtain mastery, and then become an innovator, the novice undergo the following inner processes:

1. The training is the causal trigger for innate developing cognitive competencies and rules.
2. The training provides evidential feedback to the novice necessary for inductive extrapolating of rules.
3. The novice has all the requisite cognitive abilities and background knowledge necessary to construct the set of rules used by the master.
4. The novice thus obtains mastery.
5. He then sharpens the same cognitive abilities and expands the background knowledge to evolve a new set of rules not previously used by the master.

In the Wittgenstein’s perspective, innovation is a paradox because:

1. He sets himself away from the contingencies of social practice, away from prevailing culture.
2. The isolated model seems not viable, as according to the Wittgenstein’s perspective, we cannot make sense of a rule independently of the matter of course reactions that we share with others.
3. Only under social contingent is the action of the novice correctable, wherein the ideological community is the arbiter of what is correct. This is possible due to the fact that the master’s own inclinations are in harmony with the inclinations and judgments of the community of which he is a part. His judgments have authority because they are representative of the judgment of the community.
4. Therefore what we take as shared skills are obvious ways to proceed in the use of rules, paradigm and standards; otherwise nothing can function as a rule, paradigm or standard.
It follows that because the ideological community of architecture is socially embedded, the innovator is not able to set himself away from the field. The new set of rules that the innovator contends with is merely techniques. These techniques are socially engendered and sustained. It is a mistake of classical psychologism, which takes architecture to be empirical propositions. Wittgenstein argues that these propositions look like they are fact-stating. This is what has led scholars to treat them as either metaphysical or empirical generalisations. They are neither. Their necessity resides in the fact that they are normative propositions. Their normative functioning lies in the background techniques and word pictures, which create logical space for our judgments, and actions concerning what are obviously the same and what must be so.

The ‘techniques’ that is spoken about above is acquired through the shaping of the mind. As the techniques are socially engendered and sustained, they are like propositions in Wittgenstein’s language games, which are acquisitions of the relevant background and their associated word pictures through concentrated training. It is through the acquisition of the bedrock of practices that the novice grasps the obvious and the necessary. It is the expectant standard that first shapes the mind of the novice where he had been mindshaped to view things in a certain way. It is also gradual mindshaping, in many small acts and adjustments that take him toward the threshold of innovation.

9. Shaping the External Context
Following the Wittgenstein’s perspective, and Boden’s P-creativity, the innovator’s development occurs in myriads of small acts, adjustments, insights and shiftings of perspective. In other words, the mind is shaped in numerous directions before arriving at the state when it is crystallised: it is a slow process by which the innovator constructs the mental circumstances of his own insight – the 10-year or, 12-year rule. Although Wittgenstein gives the normative background to the mental process, that is culturally shaped, each creator’s development is unique and unpredictable. The person evolves a special point of view within which to view a problem.

Building that point of view is mindshaping the amorphous inner vision to unite the internal context with the external context – that outward field and the audience. Usually, as inferred in Wittgenstein’s remarks, an external context does not exist to accept things that are completely novel. The innovator may have to wait for the context to evolve to accept the novel work, or the context may never exist at all, or he creates the context, all of which are time determined: Generally a long time is required before the creator’s context shifts enough for the magnum opus to be accepted.

The external context is changed by first changing external minds. Practitioners rarely wield theories when offering their ideas to the external world. Tipping points for acceptance of ideas occur when fellow practitioners alter their practices and when audiences alter their taste. We see this time again in the architectural field when an innovator is adopted, usually after a long period of activity in the field.
In each change of architectural taste, which usually manifests themselves as architectural movements, a few individuals stand out as having ushered in the movements. Boden identifies them as H-creative individuals, after a period of being P-creative. We have seen them in seventeenth and eighteenth century classicism, in nineteenth century romanticism, in the early twentieth century modernism and the late twentieth century postmodern deconstruction.

When it comes to these H-creative practitioners, they rarely describe their ideas in words, as it is not in the nature of practice to do so. The practitioners’ media of expression are the materials of construction, their formal and spatial intelligence and, their skills at arranging these things both mentally and externally. Those who understand the nature of their media or symbolic systems – the forms of expression, and appreciate the breakthroughs that these innovators have fashioned, apprehend their visions in books and publications.

How do the visionaries change the external mindsets, and hence the external context? The practitioners do so by practising as a matter of course in their practice, and usually not by making claims or propositions and in architectural practice, they usually do not have the resources to theorise. The shift occur in practice rather than in theory in three ways:

1. Expand the external acceptance. They firstly shape the external context by expanding the external acceptance of what is possible in architectural expressions. This is seen time and again in the births of new architectural movements. The P-creative individuals develop new skills over a period of concentrated practice and call on the audiences to develop a
complementary ensemble of perceptual skills. This usually coincides with equivalent movements in other forms of art: the classical period in the seventeenth and eighteenth centuries coincided with similar movements in other representational arts, and so did the nineteenth century romantic period and the modern movement in the early twentieth century, and it is the same now in the postmodern period.

2. Help define spirit of the era. This brings the second point that H-creative individuals help to define the spirit of an era that awaits the emergence of the representational arts and architecture to represent the era. In this case, the external environment first shapes the minds of the creators, who then redefine and reshape the environment, encrusting a new paradigm. The problem is of course; the works of the H-creative individuals become iconised as the correct model to follow. These models then become paradigmatic establishments that become obstacles for future innovations.

3. Enchainment. The third way that changes the external context is by enchainment with other fields to create novelty within the ideological community. The themes from other forms of artistic expressions are often used, particularly from the fields of painting and sculpture: most of the time, they are intersubjective in that they influence one another. However architecture is also influenced by advancement in engineering, and often, the boundary between architecture and engineering is indistinguishable. Today, the electronic media and stage designs are additional fields that influence a new wave of depthless simulacra that includes architecture.
There are three levels at which the external context are shaped by the H-creativity individuals:

1. Redescription. Where the innovator is redescribing accepted norms with his innovation: he is rearranging conventional representations. The architectural innovator does this as a habit: he continually experiments with the media of his expressions.

2. Resonate. To change external minds, he needs to resonate with an informed audience, and then with the larger audience. It is thus essential that the innovator first convince a select group, where, in architecture it is most likely the critic.

3. Overcoming resistance. By convention, cultures are normally resistant to change – the reason for the presence of cultures in the first place. Unlike scientific or engineering advancement, architectural novelties are not quantifiable necessities, therefore, resistance are harder to break. The architectural innovator who aspires to break into popular acceptance must neutralise the resistance. He must firstly be able to undermine the counter-stories that are offered in opposition. Secondly, he has to convince the audience about the value of the new work, which usually is a subjective matter.

10. Conclusion
Architectural innovation is a culturally embedded mindshaped belief, as the fundamental principles of architecture have remained unchanged since its beginnings. Architectural innovation is a game of rearrangement of these fundamental principles. As Vitruvius had stated, architectural invention is merely the discovery of arrangement of fundamental principles [ref. Vitruvius, C1 B.C.: 13]. Unknowingly, Wittgenstein carried Vitruvius remark to the twentieth century.

What is culturally determined as innovation in architecture is time-determined that has no measurable value to society – its value is artistic, which either is to advance good taste, or to offer an alternative to the prevailing taste. Where there is tangible value to architectural advancement, it always is accompanied by technological advancement; however having tangible value does not necessarily equate with good architecture. ‘Good’ architecture must at least have a sense of proportion and executed with spatial intelligence. Other attributes like tactility, poetics, phenomenology and meaning contribute to the quality of the architecture. In innovation, there must however be novelty, but not necessarily accompanied by quantifiable value. It is usually innovation for its own sake and it is by persuasion that society is brought to the view of the innovator.

True, measurable innovation therefore remains with science. Innovations in the arts and in architecture are fundamentally rearrangement of fundamental principles. In the replacement of prevailing architectural paradigm it usually involves the change of taste, culturally. Most of the shifts are incremental, which is P-creative; H-creative architecture must always be a collective, with
several players. H-creative shifts have mass and momentum, and it is intersubjective, resulting in the involvement of the other arts.

Unlike the sciences, H-creative shift in architectural innovation is never an individual act. It must come from at least a section of the ideological community, which has built up the shared value over a period of time. The external community needs to be persuaded by this shift and this requires mindshaping of the external community to accept the shift.

Historical evidence from the past points to architectural innovations being a part of the spirit of an era rather than being the force that drives the era. Usually, there is no clear distinction as to which artistic domain takes the lead in reflecting the spirit of an era. During the renaissance, the romantic and the modern periods, the visual arts seemed to have influenced architecture. In China, architecture had all the while been led by literature, poetry and the environment, and until recently, Chinese architecture, like its calligraphy were figurative representation.

Changes in the architectural field happen at practice. Where on the uncommon occasion where it was driven by theory, as in the case with Postmodern architecture as purveyed by Jencks, that version of Postmodern architecture was short-lived. Whereas, culturally driven postmodernism as inferred by Jameson is still with us today.

By cultural acceptance there continues to be a place for architectural innovations as history continues to accommodate the wax and wane of successions of architectural styles. It is nearly always the case that
architectural innovations are externally driven, where the environment of their practices influences the P-creative architects. The jump from P-creativity to H-creativity happens at tipping points when there are enough shared narratives to convince the external culture of the appropriateness of the narratives to the spirit of the period.

If H-creative innovation is culturally determined, why then innovate at all? - As this infers that a new spirit of the arts will in any event emerge with the spirit of the time. Collins suggests that it is for emotional energy, and to become the emblem of the group that creativity is pursued (ref. Collins, 2004; APPENDIX: 43). However, it could also be said that innovation in the arts and architecture is the natural exercise of the human imagination. Particularly, today, which is witnessing the intensification of architectural innovation, with the tools of collaboration accessible to anyone. More architects now have the power to create their own novel contents and globalise them.

When we used to live under centralised structures, which were more vertically organised, innovation was more problematic and happened only occasionally. History had demonstrated that where the mechanisms of the establishment were loosened, creativity flourished, as witnessed in post-reformation Europe, and particularly when enchainment intensified. When hierarchy becomes flattened in many parts of the world today, innovation increases exponentially. With so much novelty going on in architecture today, the question often posed is whether the novel architecture is ‘ethical’ – in other words, whether the architecture is meaningful.
It could be argued that intensity of innovation is reflective of cultures that have a sense of well-being, rich in collaboration, and where the general populace is emboldened, where power works from the bottom up. China for example, reflected intellectual stagnation for nearly 600 hundred years, when it began to become insular by fiat (beginning with reign of Emperor Hongxi in 1424) and lost its technological lead to the other nations, and later became decrepit and lost its sovereignty. The same could be said of the Islamic civilisation when conservatism and dogma became the practice by fiat in the twelfth century, influenced by a movement spearheaded by al-Ghazali, which is equivalent to the modern day Taliban (ref. Atalay, 2006: 35).

The recent example in Malaysia is the naïve planning of Putrajaya, which was planned by decree from an authoritative administration, based on classical and unimaginative precepts. After more than ten years of construction, it remains sterile and an undesirable place to live. In fact, the city is now poorly maintained and some of the sheen is beginning to crumble. In contrast, Kuala Lumpur, which is an accidental city, has built up many layers of meanings and life at the time when Putrajaya was under construction and continues to become more interesting and diversified. Kuala Lumpur still houses the most creative local entities whereas Putrajaya as yet houses none.

A spirit of innovation is still essential in architecture and in the arts, although as Vitruvius had said, invention in architecture is merely the arrangement of the same fundamental principles, as the picture is larger than that of the field. Today, it is in part a process of flattening, to empower the bottom of the pyramid, and to raise the hope of change, so that lives in the bigger picture is progressive.
Those who are autocratic, and without imagination themselves are retrospective in their visions. This is seen in all the regressive and oppressive regimes – whether in governments, ideologies or units of cultural establishments. Pride of history is often the excuse used to suppress progress.

One of the dark periods of Malaysian architecture saw the reversion to simplistic symbolism in the mid-1980s where under authoritative decree and ethnic pride, new public buildings were to use variations of the Malay roof to symbolise ‘national identity’, and in Putrajaya, ‘Islamic symbols’ in whatever form, was a requirement of planning approval. The past that is being mined is usually an adorned and imagined one, which was made to seem more ideal than it truly was.

The minds of the ideological community are shaped by three kinds of forces. The first of which is cultural dogma, which are handed down by the higher authorities. These are the stories and myths – the collective narratives fed orally, visually or through literature. The other is the context in which the individuals grow up in, which makes a more lasting impression in the minds. The third is the time-determined practice, or everyday doing, which shapes the mind that, can supersede the early impressions.

What then distinguishes the innovator from ordinary practise within the ideological community, as clearly, the ideological community sets a predetermined range of options within its culture? The external culture also frames how the action is described, for example, very often in Singapore and Malaysia; architecture is seen only in economic terms, described to ensure economic gain and preventing loss. Ordinary practice also has the tendency to
lull into complacency, content with everyday ‘toolmaking’ and cooperation. Just as the minds are shaped by the external world, the external world can delude the minds that it houses. The instinct is to fall back onto the paths of least resistance in dealing with fellow players in the community and make relationships bearable. This coaxes the novice into passive compliance, whereas the route to innovation contains an element of risk to the status quo.

Innovations usually shock the status quo and seem at first to threaten social cohesion. Following Wittgenstein, where: “the limits of my language mean the limits of my world” (ref. Wittgenstein, 1921: S 5.6), it will be through symbols and metaphors that we could transcend our cognitive limitations. Wittgenstein’s remark suggests that language indicate the way the mind works and the way it is limited. The first way to transcend the limitation is through conceptual metaphors. As innovation in architecture has only to do with the rearrangement of fundamental principles, innovators co-opt oppositional forces to test the limits of the fundamental principles – being the rules by which the ideological community follow. Innovators have in their collection, more articulated metaphors to make more complex combinations of thoughts. The metaphors are not just literary tropes but can capture deep equivalences in causal mental networks that are used to build problems and provide novel solutions.

The combinatory power of language is an indicator of the combinatory power of architectural rearrangement. The ultimate ability of this cognitive power is to have infinite use of infinite options with infinite means. As language is the skillful combination and arrangement of phrases and sentences, architecture is likewise the skillful arrangement of forms and spaces, the tools are the
materials of varying tactility and these days, also of technology. The combinatorial apparatus of grammar apply to both language and architecture – the first of which is logocentric and the other visiocentric. Following Wittgenstein, the combinatorial apparatus of grammar mirrors the combinatorial power of thought; each expression can manifest a potentially complex idea.

Even though the inventory of concepts and relations are finite, the combinatorial power could entertain an explosion of unlimited ideas through the use of metaphors. In the visual world as in the linguistic world, new metaphors are continually being discovered and these are developed into newer and more complex metaphors and analogies. By concentrated practice, the innovator develops a sense of sifting out the best match between the relations of concepts and metaphors. Intuition is developed by which the innovator prunes away the mediocre features to focus on the valuable ones.

There isn’t a mechanical way to arrive at innovation – it can only be done through concentrated practice. A single mind alone, without enchainment is limited in experience and ingenuity, and even the ideological community on its own, without the enchainment with other domains is inadequate. The point is to increase the fecundity that enriches the combinatorial skills.

Seeing the way that ideas do not flourish under authoritative and vertical regimes, the evaluation of ideas must be wrenched away from the staid institutions of polically vested authority. Instead, everything to do with ideas must be open to debate, critique, question, and to peer review. The goal of concentrated practice is to make up for the shortcomings of pure instincts – not to implant abstract imperatives on vacant minds, but by developing mental
models that can become standard equipment for calling upon to arrive at ways of assembling metaphors into more and more sophisticated combinations.

A circuit map adapted from Weisberg’s adaptation of Csikszentmihalyi’s map demonstrates how the combinations is explicable (ref. Notes: 1: Systems View of Creativity/ Innovation): It provides a diagrammatic analogy to the ways in which the combinatory play of symbols and metaphor work themselves out between the external environment and the individual’s mind. To elucidate this, take for example the Wickham Apartments, which were conceived during the period of current research. The everyday process and concerns in the design of the apartments are already sketched out in pages 37 and 38; however Csikszentmihalyi’s map is useful to explain the mental constructs:

1. **Retains Selected Variances:**
   
   Whilst the limits of language frames the mental limits, language also provides the structure through which thoughts and ideas travel from the external environment to the mental system to become the tools for creative actions. As expressed in language structures, this is done through the combinatory play of
symbols. Likewise in architecture, the mental actions of combining and arranging symbols are visiocentric [whereas it is logocentric in literature] using imagination. For example, since 2005, at the time when the seed the current research was first planted, it was noticed that Kuala Lumpur had transformed into a city of many layers, mostly by accident over time, without intentive action from the government authorities. This phenomenon was found to be fascinating: more so when compared with the staid and unappealing contrived environment of the new city of Putrajaya. See Notes: ‘7. Comparative Crusts’ for visual comparison. The narrative for Kuala Lumpur as a layered city is lodged in the conclusion of the APPENDIX (10.28). What had happened, following Csikszentmihalyi’s map is, the observer had retained selected variances from the field and converted the observation into symbols and metaphors as expressed in the narrative. The indigenous layered cake was adopted as overriding metaphor.

2. Transmits Structured Information and Actions

Through mental acts, the symbol system is converted into structured information and actions and applied to architecture. It is not a mechanical action; but a heuristic one, built upon one mental discovery over another in concert with concentrated acts of penning the knowledge capital into paper and then ultimately into recognisable works of architecture through the normal process of practice. During the period of designing the Wickham Apartments, post-structuralist ideas were prevalent in philosophy and in popular science, where absolute ideals were replaced by fluid networks, webs, matrices and continuous change, and where cities were regarded as dynamic complex adaptive systems. The mind was shaped by research and observation and the resulting layered, matrix-like and woven architecture of the Wickham
Apartments merely echoed the way the mind was shaped by external circumstances. This attitude in architecture is not at all unique as it is observed that several architects are doing similar work, no doubt mindshaped by the similar external circumstances.

3. Produces Variances and Change

Although mindshaped by similar external circumstances, every individual produces variances in his/her work and the completed work will contribute to enriching the architectural field. Judgment will be made on the contribution the work makes, and the intellectual community decides on the merit of the work to either reject, ignore or mythicise it. The work is enchained to the social system, becoming a phenomenon that reaches beyond architecture in that it has become part of the social psyche as well as being a contribution to habitation and an impact on the local economy. It locks into the matrices of mental maps and becomes a reference for the next purveyor of similar building type. The work may add to the knowledge capital of the next architect doing similar work, who would convert it into his own symbolic grammar and through the looping circuit, contribute his work back to the field, and so, the architectural field is enriched and Boden’s incremental P-creativity is played out to the point when rare H-creativity may possibly arrive at tipping point.

The Wickham Apartments sits comfortably in the context of Kuala Lumpur in the early twenty-first century, and is an analogy of the thick crust of time that makes contemporary Kuala Lumpur. Unsurprisingly, nothing similar is yet found in Putrajaya, being an instant city, and a collection of methodical insertions of different well-worn building types in carefully prescribed zones and segments (‘precincts’) – a typically over-planned city with no surprises. It is likely that
something like the Wickham Apartments would appear alien in the over-planned and pristine environment: as the Putrajaya environment suggests a different narrative, one that is likely to be monumental and assertive, situated on a thin crust, devoid of layering either of time or, of mixed use.

For example, at the core of the city, which is the administrative spine planned along a grand axis of several miles, the crust is so thinly spread that that there is no means at all of walking from one building block to another, without exposure to the extremities of weather. Placed right in the middle of the axis, the overly broad boulevard exists merely to emphasise the unimaginative plan that speaks of nothing else but of overt display of political power. The picture shown in Notes: 7 was taken near to mid-day on a bright Sunday morning, and there was not a single pedestrian in sight throughout the whole length of boulevard of several miles. This crust is as flat and tasteless as a pancake without condiments. There isn’t anywhere along the spine that allows for spontaneous creativity, but instead, this is precisely the kind of place that is hostile to the creative mind. Moreover, how could any of the architecture along the spine be considered as worthy (no matter the quality of space and form-making) if the architecture contributes nothing to the street nor enhance the human environment nor provide phenomenological experience?

Speculating Future Practice:
Through reasoned arguments, and the way this research has built itself, future practice is not something that is predictable as changing environment and circumstances continuously shape the practitioner’s mind. However, research suggests that it is possible to curate one’s external environment so that the propensity to innovate becomes a part of everyday thinking and doing, even
becoming a conscious, intense ritual, as alluded by Collins [ref. Collins, 2004: 42]. Notwithstanding the prescriptions for innovation as speculated and suggested in this research, the trait for future practice is traceable to the ways in which the propensity to form-making in the earlier years has given way to the creation of complex spaces, with each period of change being the result of changing external circumstances and external activities that had shaped the practitioner’s mind. The narratives for the works had also become more complex, from ‘singular statements’ to architecture that carried richer descriptions. Rich architectural description naturally extends time, and with the discovery that Kuala Lumpur encrusts thick time, the next phase of practice could possibly be about the ways time could be extended in architecture. This is not the same as current thinking about ‘slow architecture’ (having to do with tactility), but one that has to do with experiential variances through moments in a building. Current works already contain the beginnings of this. This practitioner now has to curate his external environment to enable the transformation to occur. Is it possible to have an architecture that speaks clearly just of time? – That perhaps is the speculative end to this practitioner’s journey.

11. Epilogue: Speculation On Architecture Of Thick Time

We know time only through our relationship with external phenomena, such as the movement of the sun over a day, the wax and wane of the moon over a month and the seasons that identify the year, and astronomical observations that give us millennia cycles. Our mental topography is built around these observations, in concert with the physical geography and climate, and the richness of the habitat.
Our habitat is made up layering of experiences of various thicknesses, from thick to thin. Cities that are built heuristically over time, dense with variety and variances of physical structures and continuous changes, with a history of tragedy as well as exuberant celebrations, economic flux and open to plural experiences are considered as thick crusts of many layers and are likely to be centres of creativity. The thinnest experiential crusts are the habitats that are instantaneous, inflexible, homogeneous, intolerant of change and resistant to new ideas. Slicing our mental topography in a frozen moment of time tells us whether the slice is a thick or a thin one.

The psychology is made up of many complex moments, the thicker the slice; the greater is the propensity toward cultural intelligence. This kind of intelligence is suggested by the ways in which the moments are apprehended, expanded and managed. It is a service to the user if the practitioner is able to enrich the experiences of the user, broaden the everyday experiential vocabulary and connect the user to open systems, and to enable change, and hence prompt the user towards this ascendency.

It is however possible for the user to curate his/her environment to achieve a habitat of thick slice without resorting to having to live in an encouraging environment: From Briggs’ perspective, much of this thick slice could be just imagining: as with the case of Virginia Woof’s narrative of her experiences of St. Ives, which was like “a bowl that one fills and fills and fills – then my bowl without a doubt stands upon this memory” [Appendix 7.16]. This kind of imagination too is generated by real experiences, which is the point of creating the crust of experiences in architecture.
As time is told by light in the moment of a day, or the darkness of a night, the internal of the architecture has to capture the narrative of the external environment and that the apprehension of the moment is a managed one, not by accident but by design. Are there also places in the architecture that can become a refuge from the tyranny of time? This too is a point of consideration for an architecture of time.
1992+
MISTAKING ARCHITECTURE
Search for a singular statement

Shaped by a constrained mind....
(context of loss of identity)
1996+
SEARCH FOR SIGNIFICANT FORM
Merely game playing with light and shapes

PAT’S HOUSE

Meaningless of it all.....
(context of massive industrialization)
2000+
SEARCH FOR CRITICAL MEANINGS
Phenomenology the only offer

Sense of mental void continues
(context of academia)

HOUSE X1
2005+
SEARCH FOR STRUCTURE OF INNOVATION
Letting the fly out of the fly bottle

Interaction ritual chains?.....
Mindshaped and mindshaping.....
Notes

1. Systems View of Creativity/Innovation

The map below shows the interrelations of the three systems that jointly determine the occurrence of a creative/innovative idea, object or action. The individual takes some information provided by the culture and transforms it, and if the change is deemed valuable by society, it will be included in the domain (Symbol System), thus providing a new starting point for the next generation of creators/innovators. The actions of all three systems are necessary for creativity/innovation to occur. The map is an adaptation of Weisberg’s adaptation of Csikszentmihalyi’s map (ref. Weisberg, 2006: 62).

2. Notes on the Innovator:

- Most interactions are between minds; not between bodies.
- We only know about the world through our brains.
- Our brains can create a false mental world.
- The brain actively creates pictures of the world.
- Bayne’s Probability Equation:

  \[ P(A/X) = \text{BELIEF} \]

Given some phenomenon \( A \) that we want to know about, and an observation \( X \) that is evidence relating to \( A \), Bayne’s Equation tells us how much we should update our knowledge of \( A \), given the new evidence \( X \).

When I am absolutely certain about something (like concrete is made up of sand, cement aggregate), the probability is 1. This can be expressed as an equation thus: \( P(\text{concrete make-up}) = 1 \).

Or the probability is zero if I am confident that something will never happen: \( P(\text{concrete is turning into wood}) = 0 \).

Something lying between 0 and 1: \( P(\text{the concrete requires reinforcement}) = 0.5 \).

The brain behaves like Baynesian observer – Weak evidence is ignored; strong evidence is emphasised [ref. Frith, 2007: 120-1].

- The brain discovers what is out there in the world by constructing models of that world. These models are not arbitrary. They are adjusted to give the best possible predictions of our sensations as we act upon the world. But we are not aware of this complex mechanism.

- The innovator’s mind is particularly skilled at combining and rearranging the symbols, including those provided by the external culture to produce new forms, which are fed back into the field.

3. Notes on the Field
- By making models of the minds of others - enter into a shared mental world.
- A single mind alone, without enchainment is limited in experience and ingenuity.
- The point is to increase fecundity that enriches the combinatory skills.

Prejudice is crucial for the brain to function.

4. Symbol System

- Language and culture - sharing mental models.
- In practice, the architect puts aside, and reorganise chunks of symbols, some of which he uses as symbols in practice and others, he stores for a long time.
- In the act of design, the architect moves the symbols about, cross-referencing first with one, and then another and mentally shape the subject into one form or another.
- Language is the resource by which we re-describe our thoughts in a format we use for all kinds of mental operations and manipulations.

5. Notes on the Circuit Loops

- People's behaviour controlled by belief even if beliefs are false.
- Beliefs are models of the world.
- The cycle of activity that runs from brain through body and world and back again actually constitutes cognition. The mind, on this account, is both an internal mechanism as well as externally shaped.

- Fundamentally, minds are shaped by our external environment, where information are converted into symbols through language ability and, through our combinatory mental power, these symbols are rearranged into psychological creativity.

- Architectural innovation is merely the product of a sustained and iterated sequence of interactions between sequence of interactions between the mind and a variety of external symbols. Much of the activity involves loops and circuits that run between the brain and the local environment.

- Following Wittgenstein, the combinatory apparatus of grammar mirrors the combinatory power of thought; each expression can manifest a potentially complex idea.

- By concentrated practice, the innovator develops a sense of sifting out the best match between the relations of concepts and metaphors.

6. Visuals for Biography in Mindshaping in Practice:


- Search for Significant Form: Merely Game Playing With Light and Shapes (1996-1999)


- Search for the Structure of Innovation: Letting the Fly Out of the Fly Bottle (2005-Present)

7. Comparative Crusts: Kuala Lumpur and Putrajaya:
Kuala Lumpur:
Bukit Bintang, one of several centres of Kuala Lumpur had undergone unfettered change prompted by changing market requirements and shifting tastes. The landscape morph ceaselessly and is said to transform itself every five years. The first urban typologies of the area were double-story Chinese shophouses, a school, and one of the city’s first purpose designed hotel.
Putrajaya:
The new instant city of Putrajaya, anchored by a grand axis, which is its administrative spine, which lies forlorn and appears menacing between working hours. At the end of the grand axis is the Prime Minister’s department. Lining the axis are various ministries and statutory departments. Around the grand axis are precincts with distinct purposes, including areas of residences. Architecture here has to reflect some form of ‘Islamic’ architecture to obtain approval, which interpretation is loose, subject to negotiation and whims of the planning authority.
Selected Bibliography


A Structure for Architectural Innovation: Mindshaping

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Assumed Hypothesis:

Architectural innovation is ostensively meaningful. It is validated through context and launched from the mastery of Language Games and Form of Life.
Preface

The word, ‘structure’ as used in the title, ‘The Structure of Architectural Innovation’ is a non-exclusive term. It is intended to have a sense of critical description of architectural innovation. It is a way of assembling (evidence), recognising themes, ordering constants and correspondences (ref. Derrida, 1967: 17).

This thesis has its basis on two theses:
– ‘Critical Meanings In Architecture’ (2004/5), (my Masters thesis completed with the University of Malaya),

The conclusions reached in ‘Critical Meanings In Architecture’ (CMA) and the platform for ‘Mastering Architecture’ (MA) are similar, although they were written independent of each other.

The theses allude towards interrogating architectural innovation; but stopped short due to the underlying constraints of the titles.

The purpose of this thesis is to take the common shared premise of the two theses and bring them to the next natural level, which is to interrogate architectural innovation.

Whilst CMA relied on philosophical arguments, around Wittgenstein’s Philosophical Investigations (1953), to arrive at its conclusion; MA was built on pedagogical platform, example: sharing arguments developed by Gardner (‘Intelligence Reframed’) and Collins (‘The Sociology of Philosophies’). However, conclusion in CMA and platform for MA are the same.

The hypothesis, “Architectural innovation is ostensively meaningful and validated through context, and launched from the mastery of Language Games and Form of Life”, is drawn entirely from the propositions found in the two theses.

Literature review will form the basis of interrogation, supported by selected Malaysian and other Asian or Australian architectural and urban evidence and, common sense observation.

The interrogation will be argued dialectically: Literatures that support the hypothesis are deemed as Protagonists and those that provide opposing arguments are regarded as Antagonists. The Antagonists will test the validity of the hypothesis.
METHODOLOGY

Hypothesis

PRAGONIST
Supports the hypothesis

ANTAGONIST
Opposes the hypothesis

Literature Review A
(Introduction)

Literature Review B
(+ Architectural Review)

Literature Review C
(+ Architectural Review)

Literature Review D
(+ Architectural Review)

Literature Review E
(+ Architectural Review)

Literature Review F
(+ Architectural Review)

Discussion

QUESTIONS & ANSWERS

Conclusion

Review of Hypothesis

DVR

Figure 0.1
ONE:
INTRODUCTION

Literature Review A:

Wittgenstein, Philosophical Investigations (1953)
Supporting Literature:
Wittgenstein, The Blue And Brown Books (1958)
Wittgenstein, Philosophical Grammar (1969a)
Wittgenstein, Culture And Value (1977)
Wittgenstein, Zettel (1980)
John-Steiner, Notebooks Of the Mind (1985)
Leach, ed., Rethinking Architecture (1997)

Preamble

1.01 The contents of the introduction below is intended to build towards the hypothesis that:

Architectural innovation is ostensively meaningful and validated through context, and launched from the mastery of Language Games and Form of Life.

The above hypothesis is what the conclusion of ‘Critical Meanings in Architecture’ (CMA) and ‘Mastering Architecture’ (MA) is supposed to have inferred, and that the interrogation of architectural innovation would take the synthesis of the two theses to their next natural level: which is the interrogation of architectural innovation. Thereafter, a series of literature reviews would be inducted to test the hypothesis (see Methodology).

1.02 The synthesis and build-up towards the hypothesis is done by way of Wittgenstein’s latter philosophy, particularly, his ‘Philosophical Investigations’ (1953), which will cement the two theses to form the backbone for the hypothesis. The task of this introduction is to demonstrate that, and to establish the hypothesis. It is believed that the shared bedrock for the conclusion of CMA and platform for MA can be framed by Wittgenstein’s ‘Language Games’ and ‘Form of Life’, and that architectural innovation requires the mastery of issues inferred in these two terminologies. These terminologies are discussed extensively in ‘Philosophical Investigations’ (1953) and Wittgenstein’s other post-Tractatus1 works. Above all, ‘Philosophical Investigations’ argues for ostensivity, which is an essential argument in the conclusion of CMA and the platform for MA.

Ostensivity
1.03 The nature of ‘Language Games’ and ‘Form of Life’ is ostensive, as pointed out in ‘Philosophical Investigations’:

*Philosophy simply puts everything before us, and neither explains nor deduces anything. – Since everything lies open to view there is nothing to explain. For what is hidden, for example, is of no interest to us* (Wittgenstein, 1953: S 126).

The above passage supports ‘meaning’ in architecture as propositioned in the conclusion of CMA, and the manner in which visual examples are used as evidence in MA.

1.04 Further on ostensivity, section 135 of ‘Philosophical Investigations’ says, “Asked what a proposition is – whether it is another person or ourselves that we have to answer – we shall give examples… now in this way we have a concept of a proposition”. Most of the next 100 sections of ‘Philosophical Investigations’ are occupied with exploring and undermining the view that meaning consists in mental processes and the view that meanings consists in implicit rules: “One of his principal aims is to discredit the idea of a hidden fact that somehow underlies what our words mean and gives them a fully determinate sense, whether that ‘fact’ is conceived of as a subjective mental process or an objective rule” (Stern, 1995: 121). This is the way that MA has chosen to present the evidence – by offering the reader to look at visual examples.

Language Games

1.05 By doing away with systematic analysis, the concept of language games enables us to give up systematic analysis as a rule and use alternatives in descriptions. Language games broadly infers rules, but not in a systematic way. This avoids stasis thereby enabling the thesis to progress. Instead of systematisation, language games can introduce comparative method instead (as a choice of rules), just as it was done in MA, wherein: objects of comparison … throw light … by way not only of similarities, but also of dissimilarities (Wittgenstein, 1953: S130). The point of the comparison is to elicit analogies between the use of language and playing a game: both are activities, things we do, and both involve the use of rules (ref. Stern, 1995: 21).

1.06 Therefore, understanding, in language games is attained by means of ‘looking’ instead of theorising: It is ostensive:

*Our mistake is to look for explanation where we ought to look at the facts as a ‘proto-phenomenon’. That is, where we ought to have said: this language game is played. It is not a matter of explaining a language-game by means of our experiences, but of noting a language-game.*

... –Look on the language-game as primary (Wittgenstein, 1953: SS654-656).

Hence, solipsism slips outside of language games. What is sought in MA is thus to bring architecture back from the metaphysical to its everyday use (ref. Wittgenstein, 1953: S116).
1.07 The above will correspond with the generic understanding of architecture as architecture is regarded as an ostensive and real vocation: buildings are real, tangible edifices, and it necessitates the exercise of common sense: – That is, this happens when we philosophise; for as soon as we revert to the standpoint of common sense this general uncertainty disappears (Wittgenstein, 1958: 45).

1.08 Working in architecture, just as working in philosophy, is really more of working on oneself. On one’s own interpretation – On one’s way of seeing things. From the ‘Philosophical Investigations’ perspective, the aim is to bring architecture down to earth; instead of trying to grasp the hidden structure underlying architectural activities.

Context

1.09 Following this, we naturally depend on a background of common behaviour and shared practices, and of shared physical circumstances: we could generalise this as ‘context’. The shared practice is ‘form of life’. In this perspective, architecture does not have a privileged vantage point: Wittgenstein points that: the place I really have to get to is a place I must already be at now. (Wittgenstein, 1977: 7). Hence, we cannot achieve an objective standpoint outside of ordinary lives.

1.10 Indeed, architectural exemplars are used to illustrate conditions of ordinary lives:

(And how many towns or streets does it take before a town begins to be town?) Our language can be seen as an ancient city: a maze of little streets and squares, of old and new houses, and of houses with additions from various periods, and this surrounded by a multitude of new boroughs with straight regular streets and uniform houses (Wittgenstein, 1953: S 18).

1.11 Context is an essential component in the conclusion of CMA and platform for MA. In CMA, context includes the environmental, physical, ethical, social, political and economic. In MA, it ties with ‘culture’ and then to ‘cultural capital’, which is related to practice. See Appendix 1. In explaining the way that context is found in Wittgenstein’s latter thinking, Stern states as follows:

On Wittgenstein’s post-Tractatus conception of language, even formal rules must be understood in terms of their practical background, a change of view that emphasises practice over theory: “rules leave loopholes open, and the practice has to speak for itself”. There is no sharp transition from the calculus model to the language-game model, from logical holism to practical holism: Wittgenstein does not give up the idea that our linguistic practices are rule-governed, but rather comes to see that rule-governed behaviour depends on a practical context (Stern, 1995: 120).

1.12 In the first 200 sections of ‘Philosophical Investigations’, two aspects reign throughout: The first of which is that no mental content is intrinsically meaningful and that all determination of meaning depends on interpretation. Any given mental process or formulation is open to deviant interpretation. In sections 143 and 185, he quotes the
example of the pupil who learns to add small numbers correctly but systematically miscalculates, all the while insisting that he is going on the same way, is one example of this leitmotif. Further, in sections 73-74, 85-86, 139, he gives examples of a leaf, following arrows or signposts, or interpreting the drawing of a cube, where no occurring act can give a rule the power to determine future actions, because there is always the question of how that act is to be interpreted.

1.13 This follows that mental content and interpretation of meanings are misguided without context, and any assumption that rules can be applied to future applications without reference to context is also misguided. A change in the context of application therefore yields a change in meaning, and it follows that meaning cannot be identified with anything independent of context. Wittgenstein says,

*What is essential is that the same thing can come before our minds when we hear the words and application still be different. Has it the same meaning both times? I think we shall say not* (Wittgenstein, 1953: S 140).

**Ostensivity of Interpretation**

1.14 According to Wittgenstein, the mental process of interpreting is not an intuitive, or ‘inner’ process; instead it is a decision, following rules correctly in a language game. In ‘The Blue and Brown Books’, Wittgenstein asks the interlocutor, “–But what does it mean to follow the rule correctly? How and when is it to be decided which at a particular point is the correct step to take?” The interlocutor responds by appealing to the rule-giver’s intentions: “The correct step at every point is that which is accordance with the rule as it was meant, intended” (Wittgenstein, 1958: 142). In the ensuing dialogue, the interlocutor tries to specify the rule-giver intentions, and Wittgenstein repeatedly undermines him by asking how the application of intention, meaning, mental act, or whatever other candidate is offered can be guaranteed in advance, as the same deviant possibility can always be raised. Wittgenstein sums up as follows:

*The trouble crops up whenever we try to think about the ideas of thinking, wishing, expecting, believing, knowing, trying to solve a mathematical problem, mathematical induction, and so forth.*

*It is no act of insight, intuition, which makes us use the rule as we do at the particular point of the series. It would be less confusing to call it an act of decision, though this too is misleading, for nothing like an act of decision must take place, but possible just an act of writing or speaking. And the mistake which we here and in a thousand similar cases are inclined to make is labelled by the word ‘to make’ as we have used it in the sentence ‘It is no act of insight which makes use the rule as we do’, because there is an idea that ‘something must make us’ do what we do. And this again joins on to the confusion between cause and reason. We need have no reason to follow the rule as we do. The chain of reasons has an end* (Wittgenstein, 1958: 143).
1.15 To Wittgenstein therefore, there is no suggestion of an act of decision; only that if any mental process is involved, it is a decision, not an insight or an intuition. Wittgenstein proposes therefore, instead of interpreting, we simply grasp the rule in practice and this will apply to the practice of architecture as well. This does not infer however, that we cannot make our own rules, say for architecture. The search for self-interpreting interpretation in architecture for instance, only arises when the rule used is expressed as an interpretation, a construal of the rule that still needs to be made completely determinate. This infers that in everyday making of architecture, we do not do any interpreting, but simply grasp the rule in practice. Wittgenstein uses the metaphor of signposts to explain this convention:

\[ \text{A rule stands there like a sign-post. – Does the sign-post leave no doubt about the way I have to go? Does it show which direction I am to take when I have passed it; whether along the road or foopath or cross-country? But where is it said which way I am to follow it; whether in the direction of its finger or (e.g.) in the opposite one? And if there were, not a single sign-post, but a chain of adjacent ones or of chalk marks on the ground – is there only one way of interpreting them? – So I can say, the sign-post does after all leave no room for doubt. Or rather: it sometimes leave room for doubt and sometimes not. And now this is no longer a philosophical proposition, but an empirical one (Wittgenstein, 1953: S85).} \]

1.16 Thus, whether or not a rule or sign-post gives rise to doubts about what it means will depend upon its context and our interpretation of the context. However, not every question about the rule or sign-post, such as that which form part the practise of architecture, need to answered for it to be useful. Potential ambiguity need not be resolved unless it actually arises. Explanation may call for further explanations only if it is necessary to prevent a misunderstanding. Wittgenstein reasons that:

\[ \text{An explanation may indeed rest on another one that has been given, but none stands in need of another unless we need it to prevent a misunderstanding – one, that is, that would occur but for the explanation; not everyone that I can imagine.} \]

\[ \text{It may easily look as if every doubt merely revealed an existing gap in the foundations; so that secure understanding is only possible if we first doubt everything that can be doubted, and then remove all these doubts.} \]

\[ \text{The sign-post is in order – if, under normal circumstances, it fulfils its purpose (Wittgenstein, 1953: S87).} \]

Mastering is Ostensive

1.17 The role of language and practice that Wittgenstein uses to build his response to the sceptical interlocutor who raises every imaginable doubt, can be summarised in sections 198 – 199 of ‘Philosophical Investigations’ and the points made are equally applicable to the practice of architecture. The first section recapitulates the dialogue with a voice that asks the sceptical question: How can I ever know how to follow a rule, and whether any action can follow from any rule, given a sufficient
ingenious interpretation? The second section contain the response which can be applied equally to the practice of architecture:

“But how can a rule show me what I have to do at this point? Whatever I do is, on some interpretation, in accordance with this rule.” – That is not what we ought to say, but rather: any interpretation still hangs in the air along with what it interprets, and cannot give it any support. Interpretations by themselves do not determine meaning.

“Then can whatever I do be brought into accord with the rule?” – Let me ask this: what has the expression of a rule – say a sign-post – got to do with my actions? What sort of connexion is there here? – Well, perhaps this one: I have been trained to react to this sign in a particular way, and now I do so react.*

But this is only to give a causal connexion, only to explain how it has come about that we now go by the sign-post; not what this going-by-the-sign really consists in. On the contrary; I have further indicated that a person goes by the sign-post only in so far as there exists a regular use of sign-posts, a custom.

Is what we call “obeying a rule” something that it would be possible for only one man to do, and to do only once in his life? – This is of course a note on the grammar of the expression “to obey a rule”.

It is not possible that there should have been only one occasion on which someone obeyed a rule. It is not possible that there should have been only one occasion on which a report was made, an order given or understood; and so on. – To obey a rule, to make a report, to give an order, to play a game of chess, are customs (uses, institutions).

To understand a sentence means to understand a language. To understand a language means to be master of a technique (Wittgenstein, 1953: S198, S199).
*(My emphasis)

Cultural Dimension (Capital)

1.18 In its direct inference to architectural meanings from the Wittgenstein’s perspective, instead on relying on interpretations which could possibly be deviant, we are to think about how a particular expression of architectural rule and the actions of the participants (architect and users) are connected. In the above quotes in sections 198 and 199 of ‘Philosophical Investigations’, the first point made is that interpretation is not enough: imagining deviant interpretations from what is ordinarily meant, shows that there is more to following a rule than simply formulating an interpretation of the rule. Wittgenstein’s initial answer is to point towards causal connections, and asks the interlocutor to consider that he was once trained how to make use of signposts, and that is what the connection depends on. However, this is not simply stating the causes that led to architectural meanings: Wittgenstein also insists on the importance of social and cultural (custom) dimensions: The training only has significance within the context of customary circumstances, or as MA puts it: – cultural capital3.
1.19 Considered in abstraction from the way Wittgenstein puts it, cultural capital can be that context, that rule—like an ostensive definition, which conforms with our strain of argument, whereby “we give one interpretation after another, as if each one contented us at least for a moment, until we thought of yet another lying behind it” (Wittgenstein, 1953: S201). In this sense, cultural capital becomes the background to which a rule belongs, and that which takes on a determinate form.

Shared Practices as Form of Life

1.20 In addition to this, from the MA’s perspective, our explicit beliefs and interpretations are only meaningful against a background of shared practices, which include the skills and customs we have learned—that is, in ritualised social activities (as well as cultural capital). These are ways of acting that are acquired through training rather than through beliefs. The ways of acting are ‘Forms of Life’. It is this “way of grasping a rule which is not an interpretation, but which is exhibited in what we call ‘obeying the rule’ and ‘going against it’” that ultimately ends the regress of interpretations (Wittgenstein, 1953: S201). In other words, “it is our acting, which lies at the bottom of language games” (Wittgenstein, 1969: S204)—The bottom of language games is form of life.

1.21 What is appealed here is not agreement over specific doctrines or views; but propositions on the role of training (through ritualised social activities) and custom (cultural capital)—this is not to establish a positive theory of concept formation, but to emphasise that meaningful architectural activities (form of life) depends on these ‘facts’ being in place. Therefore, mastery in architecture, from the Wittgenstein’s perspective, is about rule obeying; it is a shared practice cause by ritualised social activities within the context of cultural capital and that it is ostensive. According to MA, mastery is the platform that launches innovation.

Locality of Innovation

1.22 ‘Innovation’ as a discussion is the step above ‘mastery’. According to MA, innovation transcends mastery in that it has: “the capacity to change the way in which we think about the domain of architecture” (Leach, ed., 1997: 260). Equally, Jameson locates innovation outside ‘the system’: “From within the system you cannot hope to generate anything that negates the system as a whole or portends the experience of something other than the system, or outside the system” (Leach, ed., 1997: 260).

1.23 The step from mastery to innovation hence requires the conversation to step out of the system and, this infers a self-curatorial process, as pointed out in the concluding zone of MA, particularly, the ‘second-order’ curating which, “opens up options for further innovation by including the subjectivity of the curator within the act of curating” (MA: 214, 215). MA suggests that this can be done through visualisation, which is a solipsistic process: “Through your visualisation of yourself as a creative innovator.... Through your visualisation of yourself as a strategic player.... Through your visualisation of yourself as a player between fields.... Through your visualisation of
yourself as a theorist...” (MA: 216). The second order curatorial process of innovation therefore invokes the subjective imagination, and that it is solipsistic.

1.24 The solipsistic nature of innovation thus shift the interrogation from within language games to its borders. ‘Philosophical Investigations’ does not take us there. For further interrogation onto the validity we need to step into the earliest and the latest of Wittgenstein’s works, particularly those found in ‘Philosophical Occasions: 1912-1951’ (1993), ‘On Certainty’ (1969), ‘Philosophical Grammar’ (1969a) and ‘Zettel’ (1980). Works in ‘On Certainty’ and ‘Zettel’ particularly opens up the barriers surrounding language games to the possibilities of interrogating innovation. These then will launch the following series of literature reviews.

**Solipsism in Innovation**

1.25 To Wittgenstein, solipsistic imagination is problematic because of its privacy:

> Privacy of feelings can mean: nobody can know them unless I show them, or: I can’t really show them. Or: if I don’t want to, I needn’t give any sign of my feeling but even if I want to I can only show a sign and not the feeling (Wittgenstein, 1993: 86).

The problem seems to be that inner ostension plays no role in establishing the meaning of the terms in what we see in reality. The problem applies to architectural propositions which always end in some kind of physical edifices.

1.26 Wittgenstein tries to show that practical context always lead towards ostension, so that ostensive definition, whether it concerns inner or outer objects always depends on a prior context of practices and institutions. In privacy, we are simply misdescribing and misunderstanding what we ordinarily do – not because there is no reliable test for privacy, but because the stage setting for private ostension is not in place – it is a logical problem.

1.27 One of the principal aims of ‘Philosophical Investigations’ is to show that the ordinary use of language is primarily practical, a matter of skills and abilities, and cannot be understood as a matter of grasping a theory or holding that certain propositions are true. The ‘technique of use’ is potentially a public one:

> So it’s no use saying that we have a private object before the mind and give it a name. There is a name only where there is a technique of using it and that technique can be private; but this only means that nobody but I can know about it, in the sense in which I can have a private sewing machine. But in order to be a private sewing machine, it must be an object which deserves the name ‘sewing machine’, not in virtue of its privacy but in virtue of its similarity to sewing machines, private or otherwise (Wittgenstein, 1993: 448).
1.28 Despite 1.24-1.26 above, creative innovation requires that there is no sharp boundary between inner and outer ostension and that we must be able to bring aspects of the background into the foreground (ref. 1.23). In one of the later publications, ‘On Certainty’, Wittgenstein questions about the sureness of language games:

Certain events would put me in a position in which I could not go on with the old language-game any further. In which I was torn away from the sureness of the game.

Indeed, doesn’t it seem obvious that the possibility of a language-game is conditioned by certain facts?

In that case it would seem as if the language-game must ‘show’ the facts that make it possible. (But that’s not how it is.) (Wittgenstein, 1969: SS617-618).

Flow

1.29 The last paragraph of the above is to avoid falling into dogmatism with regard to language game. However, to bring inner ostension forward onto an outer ostension, it is necessary to blur the boundary edges of the game. Wittgenstein introduces the idea of ‘flow’, which appeared in one of the latest collections of his works, ‘Zettel’:

We only speak of ‘thinking’ in quite particular circumstances.

How then can the sense and the truth (for the truth and the sense) of sentences collapse together? (Stand or fall together?)

And isn’t it as if you wanted to say: “If such-and-such is not the case, then it makes no sense to say it is the case?”

Like this, e.g.: “If all moves were always false, it would make no sense to speak of a ‘false move’”. But it is only a paradoxical way of putting it. The non-paradoxical way would be: “The general description.... makes no sense”.

Instead of “one cannot”, say: “it doesn’t exist in the game”. Not: “one can’t castle in draughts” but – “there is no castling in draughts”; and instead of “I can’t exhibit my sensation” – “in the use of the word ‘sensation’, there is no such thing as exhibiting what one has got”; instead of one cannot enumerate all the cardinal numbers” – “there is no such thing here as enumerating all the members”.

Conversation, the application and interpretation of words flow on, and only in the flow (Fluß) does a word have its meaning.

“He has gone away”. – “Why?” What did you mean when you uttered the word “why”? What did you think of? (Wittgenstein, 1980: SS130-135)

1.30 At the end of the remark above, Wittgenstein infers that words have ‘flow’ in the train of thought during a conversation – there is something that goes on in the
speaker’s head to make the words significant. This time instead of looking at the practical context, Wittgenstein counsels that we look at stream of thought and activity, wherein he says that: “Words only have meaning in the river of thought and life” (Wittgenstein, 1980: S174). The river metaphor infers that the significance of a particular utterance is placed within the stream of conversation – in the ordinary use of language. In the final sentence of the above passage, Wittgenstein infers that we need to go into the mind for words to be significant.

Background

1.31 With reference to the visiocentric nature of architecture, the closest to it in Wittgenstein’s ‘flow’ is found in ‘On Certainty’. Here he sets his river image as a visual illustration of the nature of boundary of every assertion and the words we use to describe the background, and also why the background is so hard to describe. The passages begin with a sketch of a world-picture, which is a graphic depiction of his understanding of the world and our place in it. The use of imagery is a consequence of his conception of a world-picture, which can be described in terms of myth, or of the rules of a game that we may know mentally but not articulated. This is not ostensive analysis because the rules are implicit and normative rather than explicit and factual: any explicit formulation of the world-picture will not draw out the embedded:

   But I did not get my picture of the world by satisfying myself of its correctness; nor do I have it because I am satisfied with its correctness. No: it is the inherited background against which I distinguish between true and false.

   The propositions describing this world-picture might be part of a mythology. And their role is like that of rules of a game; and the game can be learned purely practically, without learning any explicit rules.

   It might be imagined that some propositions, of the form of empirical propositions, were hardened and functioned as channels for such empirical propositions as were not hardened but fluid; and that this relation altered with time, in that fluid propositions hardened, and hard ones became fluid.

   The mythology may change back into a state of flux, the river-bed of thoughts may shift. But I distinguish between the movement of the waters on the river-bed and the shift of the bed itself; though there is not a sharp division of the one from the other.

   But if someone were to say “So logic too is an empirical science” he would be wrong. Yet this is right: the same proposition may get treated at one time as something to test by experience, at another as a rule of testing.

   And the bank of the river consists partly of hard rock, subject to no alteration or only to an imperceptible one, partly of sand, which is now in one place now in another gets washed away, or deposited (Wittgenstein, 1969: SS94-99).
1.32 The above image holds that change is possible against a background. It implies indeterminacy in the world; however some things must remain constant. Wittgenstein is to later point to the primacy of the background and its indeterminacy: “If a pattern of life is the basis for the use of a word then the word must contain some amount of indefiniteness. The pattern of life, above all, is not one of exact regularity” (Wittgenstein, 1982: S211). Once indeterminacy is introduced into the picture, the boundary between the subjectivity of background and objective ostensivity is blurred. He then says in ‘Philosophical Grammar’, “… In our study of symbolism there is no foreground and background; it isn’t a matter of tangible sign with an accompanying intangible power or understanding” (Wittgenstein, 1969a: S43). The background that Wittgenstein discusses about is an indeterminable pattern of life, which is causal to our thoughts: “Behind our thoughts, true and false, there is always to be found a dark background, which we are only later able to bring into the light and expressed as thought” (Wittgenstein, 1979: 36). The influence that this background has on form of life is further described as follows:

We judge an action according to its background within human life, and this background is not monochrome, but we might picture it as a very complicated filigree pattern, which, to be sure, we can’t copy, but which we can recognize from the general impression it makes.

The background is the bustle of life. And our concept points to something within this bustle.

And it is the very concept ‘bustle’ that brings about this indefiniteness. For a bustle only comes about through constant repetition. And there is no definite starting point for ‘constant repetition.’....

How could human behaviour be described? Surely only by showing the actions of a variety of humans, as they are all mixed up together. Not what one person is doing now, but the whole hurly-burly, is the background against which we see action, and it determines our judgment, our concepts, and our reactions (Wittgenstein, 1980a: SS624-626, S629).

**Weakness and Antagonistic Review**

1.33 Wittgenstein’s later works suggests that the blurring of the boundary between the blur background and the ostensive foreground enables visualisation: such as that through self-curation as suggested in 1.23 (MA: 216). The uncertainty caused by the blurring of the boundary between what is sensual and what is logical (see quote in 1.31 – Wittgenstein, 1969: S98)) hence suggests the probable weakness of the hypothesis – that the structure of innovation may not be that ostensive after all. Also as suggested in 1.25, privacy of feeling in the curation of innovation is problematic in an ostensive world. In 1.31, it is stated that explicit formulation of rules will not draw out the embedded, suggesting an induction of psychology with regard to innovation.
1.34 It is elsewhere in architectural conversation that psychology is more fervently interrogated, such as in:

1) Existentialism (eg. Sartre),
2) Phenomenology (eg. Husserl, Heidegger, Merleau-Ponty),
3) Hermeneutics (eg. Ricoeur, Gadamer),
4) Post-modernism (eg. Lacan, Lyotard, Foucault)

All of the above have their basis in inner ostensivity, particularly in imagination, laying claims to deeper symbolic level: they seek to go beyond external codification to attempt to reveal a subjective understanding of the world. They are essentially antagonistic to Wittgenstein’s approach to meanings in the way that are self-referential, opposed to Wittgenstein’s ostensivity. To test the validity of the hypothesis, these would be interrogated following this section on Introduction.

Corroborative Supports

1.35 Outside of philosophy, the support for the hypothesis, that the structure for creative innovation is an ostensive argument, which follows language games and form of life is strong, particularly where arguments are corroborated from the gathering of empirical evidence. John-Steiner’s marshalling of her own work summarises creativity follows exactly the arguments of MA and Wittgenstein’s:

In my analysis of thought and creativity, I have emphasised the role of lengthy and varied apprenticeships, the impact of participating in a community, and the role of friendships and collaboration as part of an individual’s ability to sustain his or own work and to develop an effective organisation of knowledge and purpose. There has been, as well, an emphasis upon the evolution of different languages of thought, the differences between images, movement ideas, and inner speech…. some of the common features of thinking and the way in which ideas are transformed from private to public forms, from condensed ideas to communicative expressions (John-Steiner, 1985: 210).

1.36 Further in support of language games in the hypothesis, John-Steiner quotes Hunt’s propositions on the role of language on creativity:

Advanced thinking depends on the mental manipulation of symbols…. Language in contrast, is a virtually unbounded symbol system, capable of expressing every kind of thought. It is the prerequisite of culture, which cannot exist without it or by means of any other symbol system. It is the way we human beings communicate most of our thoughts to each other and receive from each other the food for thought. In sum, we do not always think in words, but we do little thinking without them (John-Steiner, 1985: 211).

1.37 On the influence of mentors, shared practices and cultural capital to mastery, as found in MA, John-Steiner provides the support:

The young person may at first exhibit a preference for learning by movement, sound, vision, or language. It is a preference shaped by many circumstances: the
culturally available and patterned activities; the interests, experiences, and resources of one’s family and schooling; the role of mentors and distant teachers. All of these contribute to both the content and the form of knowledge in the developing individual. In turn these affect the growth of the dominant inner language of the mind (John-Steiner, 1985: 213).

1.38 Furtherance in support of ostensivity of mastery and creative innovation, John-Steiner propositions:

*D. E. Berlyne, a Canadian student of behaviour, argued that “creative thinking often receives special treatment as phenomenon apart, but this practice seems unjustifiable”. He suggests that we view productive and reproductive thinking as forming a single hierarchy of solution strategies. The former stands high in such a continuum and requires considerable effort for production, while reproductive thinking is easily accessible as it is tied to frequently occurring situations (John-Steiner, 1985: 218-219).*

1.39 In support of MA’s propositions on self-curation for creative innovation, John-Steiner says:

*The personality traits that have been found to be characteristic of a large number of creative individuals, such as perseverance, independence, nonconformity, and flexibility, are not traits that denote neurosis. But a certain intensity exists among individuals who are committed to a creative life that is central to their being... Creativity requires a continuity of concern, an intense awareness of one’s active inner life combined with sensitivity to the external world. In this developmental account of creativity, I have emphasised the way in which intensity at an early age may be enhanced, shaped, and encouraged through the multiple apprenticeships of gifted individuals (John-Steiner, 1985: 220).*

1.40 Notwithstanding that generally, John-Steiner’s work support the crux of the hypothesis; just as in the case of Wittgenstein, creativity appear to breech the boundary between inner and outer ostensivity and suggests the necessity of subjective elements. In reflecting creative thinking, she says:

*To my mind, neither the behaviourist nor the Gestalt position does justice to the complex and interwoven process of thought. Both of these schools attempt to highlight only a fraction of the experience of consciousness, which includes inner monologues, crystallised concepts, reveries, fleeting as well as generic images, abstract pictures, visualised movements, and subjective feelings. Each psychological theory offers to examine in slow motion the rapid processes of thought, and thus untangle the many-sided, welded, inner flow of ideas: but no single, universal hierarchy exists in the modalities of thought which characterises human beings (John-Steiner, 1985: 87).*

1.41 John-Steiner’s assertion above, which outlines the uncertainties about the structure of creative innovation, forms the backdrop of further interrogation on the subject. In her assertion, she hints at the web of relationship between objective
ostensivity and the necessity of subjective feelings and imagination. Her assertion echoes Wittgenstein’s own uncertainty about creativity, and his discomfort over what he regards as ‘background’, equivalent to her ‘inner flow of ideas’. Wittgenstein propositions of ‘flow’ between inner and outer ostensivity could possibly be an extension of John-Steiner’s inner flow. The antagonists’ positions offer a dialectic challenge that may result in a viable hypothesis for the structure of architectural innovation.

**Pedagogical Spin-Offs**

1.42 It is intended that through the process of interrogating the hypothesis, other pedagogical interests would emerge, such as:

1) Whether architectural innovation is necessarily original or novel, or whether it is essentially problem solving;
2) Whether it is something that can be learned – whether there are constants through which architectural innovation can emerge, or whether it is innate;
3) Whether the ability to innovate is gained only through knowledge and experience, or whether there is a place for mainly cognitive process.

Can architectural innovation be prescriptive? – A conversation on this would be drawn during the interrogation of the hypothesis.

**Considered Questions**

1.43 The route towards answering these would be through answers achieved through a series of considered questions. The literature review would be partial towards answering these questions. Placed in order of provisional priority, the questions are as follows:

1a Why do we innovate?
1b What is the point of it

2a Are innovators born?
2b Or are they made?

3a Is architectural innovation an individual quest?
3b Or must it be a collective pursuit?

4a Can it be born out of isolation?
4b Or must it be an extension of a domain?

5a Is the structure of architectural innovation ostensive?
5b Or must it be intrinsic?

6a Is there a structure to architectural innovation?
6b Or is it the result of architectural insight?

7a Is architectural innovation possible outside of context?
7b Is it valid outside of context?

8a Is it possible without mastering rules and activity?
8b Can it be a result of just experience and intuition?

9a Is there a trait towards innovation?
9b Or is there none identifiable?

The guide to priority is summarised, with provisional weightage given as follows:

Figure 1.42
TWO:
EXISTENTIAL IMAGINATION (ANTAGONIST)

Literature Review B:
Sartre, The Psychology Of Imagination, 1966
Supporting Literature:
Barrett, Irrational Man, 1958
Koestler, The Act Of Creation, 1964
Debord, The Society Of The Spectacle, 1994
Kearney, Poetics Of Imagination, 1998
Gardner, Intelligence Reframed, 1999
van Schaik, Design City Melbourne, 2006

Preamble
2.01 Existential imagination is antagonistic to the hypothesis. It is normally viewed with suspicion as it is considered as an unreliable, unpredictable and irrelevant faculty (ref. Kearney, 1998: 3). For example, when Gardner first propositioned Multiple Intelligence in 1983, in the publication, ‘Frames of Mind’, existential intelligence was not among those included as a viable intelligence. It was only in a later publication, ‘Intelligence Reframed’ (1999) that it was included as one of the new candidates for intelligence. It was only then that it was considered not to have included “… features that, according to (Gardner’s) definition, are not germane to a consideration of intelligence”, and of interest to this thesis is the “potential to engage in transcendental concerns, a capacity that can be aroused and deployed under certain circumstances” (Gardner, 1999: 60).

2.02 Wittgenstein hinted at something close to existential imagination, as something that lay in the ‘background’, in an indeterminable pattern of life, which is causal to our thoughts: “Behind our thoughts, true and false, there is always to be found a dark background, which we are only later able to bring into the light and expressed as thought” (Wittgenstein, 1979: 36) (ref. 1.32). The route out of the dark background, and into the light is through a mental route which Wittgenstein term as ‘flow’: “and only in the flow (Fluss) does a word have its meaning” (Wittgenstein, 1980, S 135) (ref. 1.29). Wittgenstein arrived at this towards the end of his life and had not interrogated it before his demise. The great proponent of this dark background is Sartre who made an attempt to bring this dark background into the light in ‘The Psychology Of Imagination’ (1966). Its relevance to us in architecture lies in Sartre’s examination of the relationship between the human consciousness, the image and reality – all of which are relevant to the act of architectural innovation.

Image As Consciousness
2.03 Sartre starts with the proposition that the object and the idea of the object are one and the same thing: that the image is a consciousness: “To have an idea of chair is to have a chair in consciousness. That this is so is shown by the fact that what is true of the object is also true of the idea. If the object must have a determined quantity and quality, so must the idea” (Sartre, 1966: 5). Sartre sets out to contend that imagining is to be distinguished from perceiving – not by reference to the object that it intends, but by reference to the act of intending. The mental image is what counts – it is a unique orientation of consciousness towards the thing:

*What we find here is not a semblance of the chair which suddenly worked its way into consciousness and which has an ‘extrinsic’ relation to the existing chair, but a certain type of consciousness, a synthetic organisation, which has a direct relation to the existing chair and whose very essence consists precisely of being related in this or that manner of the existing chair* (Sartre, 1966: 7).

2.04 Consciousness is thus a synthetic organisation to become actual and concrete in nature. What defines the imaginary and the real world is an attitude of the mind, wherein the image and the percept are not different objects of consciousness; but are different ways of being conscious of the objects:

*The word image can therefore only indicate the relation of consciousness to the object; in other words, it means a certain manner in which the object makes its appearance to consciousness, or, if one prefers, a certain way in which consciousness presents an object to itself* (Sartre, 1966: 7).

**Image And Perception**

2.05 Architectural innovation involves image and perception. Sartre separates image from perception. He considers the two phenomena as radically distinct: Image is knowledge, which is conscious of itself, which places itself at the centre of the object; whereas perception is a synthetic unity of a multiplicity of appearances, which emerge slowly:

*When I say; “the object I perceive is a cube”, I make a hypothesis that I may have to reject at the close of my perceptions. When I say: “the object of which I have an image at this moment is a cube”, my judgment is final: it is absolutely certain that the object of my image is a cube. What does this mean? In perception, a knowledge forms itself slowly; in the image the knowledge is immediate. We see now that the image is a synthetic act which unites a concrete nonimagined knowledge to elements which are more actually representative....*

*No matter how long I look at an image, I shall never find anything in it but what I put there. It is in this fact that we find the distinction between an image and a perception. In the world of perception every ‘thing’ has an infinite number of relationships to other things. And what is more, it is this infinity of relationships – as well as the infinite number of relationships between the elements of the thing – which constitute the very essence of a thing....*
Now the image, on the other hand, suffers from a sort of essential poverty. The different elements of an image have no relationship with the rest of the world.

The difference is not that of vividness but rather that of the objects of the world of images can in no way exist in the world of perception; they do not meet the necessary conditions (Sartre, 1966: 10,11).

**Intention**

2.06 When the architectural object appears in the mind’s eye, it is naturally regarded as a perception rather than a concept and we assume that it is the result of a multiplicity of synthetic acts. Sartre however forewarns that this is incorrect, as what is observed is determined by intention:

In the image a certain consciousness does indeed present itself with a certain object. The object is therefore a correlative of a certain synthetic act, which includes among its structures a certain knowledge and a certain ‘intention’. The intention is at the centre of the consciousness: it is the intention that envisages the object, that is, which makes it what it is. The knowledge, which is inseparable from the intention, specifies that the knowledge is this or that, adds some determinations synthetically (Sartre, 1966: 12).

2.07 For intention to determine the image, the intention must be charged with knowledge. That knowledge therefore becomes an active structure of the image. Sartre states that:

An image could not exist without a knowledge that constitutes it. This is the basic reason for the phenomenon of quasi-observation. But the knowledge can exist in the free state, that is, constitute a consciousness only to itself (Sartre, 1966: 73)

2.08 Being in a free state, as Sartre purports, the image when not anchored is meaningless as it is convertible into anything that the mind intends: An architectural image becomes no more profound than say, any moveable image in a computer screen, a mere spectacle:

This is also the reason why the world of images is a world in which nothing happens. I can at will develops this or that object into an image, make a cube turn, make a plant grow, make a horse run, without producing the least shift between the object and consciousness. Not a moment surprise: the object which is moving is not alive, it never precedes the intention (Sartre, 1966: 13).

What Sartre uses to anchor the free state of the image are ‘custom’ and ‘habit’ as is seen below.

**Custom And Habit**

2.09 Architecture necessarily engages with the external world. The proposition that Sartre uses to resemble the image and the external object comes relatively close to
Wittgenstein’s language games. Sartre here describes it as ‘custom’ and ‘habit’, through which is found the resemblance between the image and the object:

There is no relationship whatsoever between ‘Office’, black strokes on white paper, and the ‘office’ as a complex object which is not only physical but social. The source of the association is custom; and subsequently strengthened by habit. Without habit, which motivates a certain mental attitude as soon as the word is perceived, the word ‘office’ would never evoke its object.

But the relationship between the material of the physical image and its object is altogether different; the two resemble each other (Sartre, 1966: 27).

2.10 It needs to be noted how carefully Sartre avoids bridging the internal with the external world in his perspective of existential imagination. The closest he has come to it is to infer that the internal resembles the external through ‘custom’ and ‘habit’ – the two worlds are separate and not bridged although they may resemble one another. This also infers that when the external representation is destroyed; the internal image remains. However, when the imaginative consciousness is destroyed, nothing remains of the content:

.... when the imaginative consciousness is destroyed the transcendental content is destroyed with it; no describable residue remains, we are confronted by another synthetic consciousness which has nothing in common with the first. We cannot therefore hope to get at this content by introspection. We must choose: either we form the image, and get to know the content only by its function as analogue (whether we form a non-reflective or reflective consciousness), we apprehend on it the qualities of the envisioned object; or we do not form the image, in which case we no longer have the content, nothing remains of it (Sartre, 1966: 70).

Imaginative Knowledge

2.11 To Sartre, the other aspect that enables meaning to emotional experience and which enable us to find our way around the world is imaginative knowledge (as opposed to image). This is to say that when a work of architecture is found to be meaningful, it is not the image that comes to mind that makes it meaningful, but our imaginative knowledge about the work. Equally, architectural innovation is invoked through imaginative knowledge and not through image, which merely provides for meaningless spectacle. Taking examples from the act of reading and experience in a theatre, Sartre says:

In reading, as in the theatre, we are actually in the presence of a world and we attribute to that world just as much of existence as we do that of the theatre; that is, a complete existence in the unreal. Verbal signs are not the intermediaries between the pure meanings and our consciousness, as they are, for instance, in the case of mathematics: they represent the area of contact between us and this imaginary world. In order to describe correctly the phenomenon of reading it must be said that the reader is in the presence of a world. It is this fact that clearly demonstrates – if the matter were to
be proven – the existence of what Binet calls ‘latent images’…. we must admit that some things does enact the role of these alleged latent images: namely imaginative knowledge (Sartre, 1966: 81, 82).

2.12 Imaginative knowledge has the tendency towards the intuition, through synthesis of relationships in order for us to find our way around the world. To reach at the intuition, the real is only envisioned. In this respect, Sartre regards the real as a kind of contamination. Speaking about the contents of a novel, where words play the role of signs, Sartre said:

But imaginative knowledge has too strong a tendency towards an intuition which will fill it up, not to attempt to make the sign enact the role of representative of the object; when this happens it uses the sign as if it were a drawing. The physiognomy of the word becomes the representative of the physiognomy of the object. A real contamination takes place. When I read ‘this beautiful person’, the words no doubt mean, above all, a certain young woman, the heroine of the novel. But to a certain degree they represent the beauty of the young woman; they enact the role of this something which is a beautiful young woman (Sartre, 1966: 85, 86).

Thus, in imaginative knowledge, beauty is idealised by the physiognomy of the word, which is contaminated by the object of beauty, which is the young woman.

Imaginative Meaning

2.13 In the above passage, Sartre is looking for depth beyond appearance: depth of meaning is somewhat spoilt by appearances. Debord has another way of describing this contamination: like a nonchalant observer, calls it ‘spectacle’, inferring that it is a ubiquitous negating social condition: “…. it is a social relationship between people that is mediated by images” (Debord, 1994: S 4). As a negating condition, Debord elaborates on the spectacle:

Understood in its own terms, the spectacle proclaims the predominance of appearances and asserts that all human life, which is to say all social life, is mere appearance. But any critique capable of apprehending the spectacle’s essential character must expose it as a visible negation of life – and as a negation of life that has invented a visible form for itself (Debord, 1994: S 10).

2.14 However the way of overcoming the hegemony of the image (or the spectacle) in search of depth or meaning differs somewhat between Sartre and Debord. Sartre descends towards inversion into human consciousness whereas Debord recommends a taking over of external conditions. In the inversion towards solipsism in search of depth and meaning, Sartre states:

Reflection yields us affective consciousnesses. Joy, sorrow, melancholy are consciousnesses. And we must apply to them the great law of consciousness: that all consciousness is consciousness of something. In a word, feelings have special intentionalities, they represent one way – among others – of self-transcendence. Hatred is
hatred of someone, love is love of someone. James said: remove the physiological manifestation of hatred, of indignation and all you have remaining is abstract judgments about feeling.... These qualities are in a sense, not properties of the object, so that basically, the very term 'quality' is inappropriate. It would be better to say that the qualities constitute the sense of the object, that they are affective structure: they permeate the entire object; when they disappear – as in the cases of depersonalisation – the perception remains intact, things do not seem to be changed, but the world is singularly impoverished nevertheless (Sartre, 1966: 88, 89).

2.15 To Debord however, the meaning is only engaged externally, in practical terms. Destroying the meaningless spectacle requires the setting off of a ‘practical force in motion’ – which is a collective political force (ref. Debord, 1994: S 203). Conversations on meaning, history and innovation, necessarily includes culture and the contents of conversation is ostensive. This is unlike Sartre’s existential imagination; it engages instead, something that approximates Sartre’s ‘custom’ and ‘habit’ (ref. 2.09). Speaking about innovation in the context of culture, Debord propositions the transcendence of culture, or in Sartre’s terminology: the transcendence of ‘custom’ and ‘habit’:

The struggle between tradition and innovation, which is the basic principle of the internal development of the culture of historical societies, is predicated entirely on the permanent victory of innovation. Cultural innovation is impelled solely, however, by the total historical movement which, by becoming conscious of its totality, tends toward the transcendence of its own cultural presuppositions – and hence toward the suppression of all separations (Debord, 1994: S181).

To further connect meaning to ostensivity, Debord propositions that meaning is linked to the presence of culture:

Culture issued from a history that had dissolved the way of life of the old world, yet culture as a separate sphere is as yet no more than an intelligence and a sensory communication which, in a partially historical society, must themselves remain partial. Culture is the meaning of an insufficiently meaningful world (Debord, 1994: S 183).

Visual Imagination

2.16 Compared with the attitude of phenomenology, Sartre is clear about the priority given to the sense of sight over the other four visceral senses. Whereas in phenomenology, the sensations between the five senses are united synthetically, Sartre suggests that the other visceral senses are subordinate to vision:

These visual impressions that constitute an immobile form are joined, by strictly kinaesthetic sensations (skin, muscles, tendons, articulation) which accompany them mutely. These present more feeble elements that are completely dominated and even denatured by the forms and clear perceptions of vision. They are doubtless the support of the intentions and protentions: but these secondary intentions are rigorously subordinated to the retentions and protentions that envision the impression of vision.
Since, otherwise, there is no kinaesthetic persistence, they are immediately effaced (Sartre, 1966: 97).

2.17 Hence to Sartre, visceral meaning is imaginatively driven. Quoting the experiments of the Wurzburg psychologists, Sartre points out the observations:

“Something about this symbolism”, writes Burlord, “is discovered in the motor representations that accompany mental work. The representations are so obscure that the subjects are not always certain whether these are images or sensations of movement. In the experimental reports we find mention of the eye and head movements; ‘a sort of symbolic sensation of nodding of the head in approbation’; ‘a convulsive pressure of the jaw concomitant and symbolic sensation (or representations) as when one turns the head away from something, in suppressing a thought’; ‘a motor incertitude in the hands and the posture of the body’ as when in doubt; all these phenomena jostle each other in intellectual processes as in emotional processes. Subjects are most unable to state whether what they experience is consciousness of an attitude or attitudes of consciousness’.

“So in the consciousness which is clearly imaginary there is a zone of semidarkness where almost imperceptible states, empty imaginative cognitions which are almost images, and symbolic apprehensions of movement appear and disappear rapidly. Let one of these cognitions fit itself for a moment on one of these movements, and the imaginative consciousness is born” (Sartre 1966: 106, 107).

It is thus noted that visceral meanings and gestures have an imaginative structure, and that consciousness is accompanied by representations that are hard to differentiate. Hence the subject cannot tell whether they are ‘kinaesthetic’ apprehensions or images.

2.18 What the above, 2.16 and 2.17 amount to is that: since all visceral meaning is imaginative driven (2.17) and that imagination is itself dominated by visiocentricity (2.16), the basis for meaning is therefore visual imagination. This contravenes the phenomenology attitude that meaning is the synthesis of combined visceral senses. Sartre is saying that phenomenology is incorrect; instead, visceral reaction is imaginatively driven, with dominance given to visual imagination. As examples, he points out that:

It has already been mentioned that the idea of darkness involves a dilation of the pupils of the eye, the image of a close object involves reflexes of accommodation with convergence and contraction of the pupil, the thought of a disgusting object causes vomiting and the hope of a tasty dish produces salivation if one is hungry (Sartre, 1966: 174).

2.19 Unlike the ostensivity of Wittgenstein’s latter work, found in ‘On Certainty’ (1969), and ‘Zettel’ (1980), where he infers that creative innovation requires that there is no sharp boundary between inner and outer ostension (ref. 1.28) and that inner ostension can be brought forward through blurring the edges of language games
Sartre’s imaginative consciousness stays as an internal ostension, even when imaginative consciousness tends towards words:

> The words are, of course, not indispensable to its structure and there are many images without words. Furthermore, they do not constitute a part of our consciousness as such, their externality throws them in the direction of the analogue. But, in the first place, since all the knowledge tends to express itself through words, all images have a sort of verbal tendency. Then, again, when the word is given to imaginary consciousness, it becomes integrated to the analogue, in the synthesis of the transcendent object…. It is enough for us to note that if we give the name of image to the whole system of imaginative consciousness and its objects, it is a mistake to say that the word adds itself to it externally; it is internal (Sartre, 1966: 110, 111).

2.20 With regard to architectural innovation, what the above infers is that: if we were to see an image of an architectural proposition in the mind, before its translation into an external image, the mental act involves the possessing of ‘in’ consciousness – of certain mental content composed of visual sensations such as: the formal and spatial outline of the proposition, the colour and tactility of the shape, and so on. These sensations cannot be externalised: they are given by some other means other than the visceral organs. In other words, the first act of architectural innovation is purely mental.

**Imaginative Consciousness**

2.21 There must then be two layers for the above to be plausible. While Sartre insists that imaginative consciousness is internal, there must be another form of consciousness that can externalise it, otherwise architectural innovation remains always hidden. There must hence be a belief that can posit the image as a picture. Sartre refers to the belief as ‘reflective consciousness’ (ref. Sartre, 1966: 112). However, according to Sartre, what is externalised with imaginative consciousness is not real: it is still imaginary. Using the observation of the Pantheon to make his point, Sartre says:

> It is as if I thought: “this object before me, I know that it has columns, a façade, a grey colour. All this is present as a certain form: what I sense there is the Pantheon, with its columns, its façade, its grey colour”. But the Pantheon exists elsewhere and it presents itself as existing elsewhere: what is present is, in some way, its absence.

Thus, for a few moments, I was as if in the presence of the Pantheon and the Pantheon is nevertheless not there: this is the phenomenon of possession we have already described…. Such is the origin of the illusion of immanence: in transferring to the analogue the qualities of the thing it represents, a miniature Pantheon is constructed for the imaginative consciousness and the reflective consciousness presents the imaginative conscious as a consciousness of that miniature. The result of this construction is a mirage: I believe that the object of my consciousness is a complex of real sensible qualities but which are not externalised, whereas these qualities are perfectly externalised but imaginary (Sartre, 1966: 113, 114).
2.22 The problem imaginative consciousness seemingly has with architecture is that it may not necessarily engage with the real world, as imaginary objects can be: “without any attachments, without temporal relationships to any other object or my own duration. They are characterised only by a subjective duration, by a pure before-after relation, which is limited to marking the relationship of the different states of the action” (Sartre, 1966: 169) – In which case it bears little relevance to architecture. However, Sartre clarifies the difference between imagining: 1) objects of ostensivity (real objects), and 2) objects of hidden ostensivity (unreal objects). On unreal objects he suggests:

*When we speak of the world of unreal objects, we use an inexact expression for the sake of greater convenience. A world is a unit in which each object has its fixed place and bears certain relationships to the other objects. The very idea of a world implies the following twofold condition for its object: they must be rigorously individualised, and they must be in equilibrium with a milieu. It is for this reason that there is no unreal world since no unreal object can meet this two-fold condition* (Sartre, 1966: 171).

Therefore the real object posits itself in the real world through two-fold conditions: individuality and context. The idea of context harks back to Sartre’s earlier proposition of ‘custom’ and ‘habit’ and, Wittgenstein’s language games (ref. 2.09).

**Perception**

2.23 One of the two-fold conditions that Sartre propositions above is individuality. The suggestion of individuality infers that the concerned object occupies a particular space, and it is through the occupation of space that the imaginative consciousness is externalised. The route to externalisation involves perception, and as Sartre explains image and perception are different entities. The image occupies individual space whereas perception occupies infinite space:

*But neither could the object of imaginative consciousness be externalised, for the reason that it is already such by nature. If I form the imaginative consciousness of Peter, Peter brings along with him his unreal space and places himself before consciousness, he is external to consciousness. The problem is therefore entirely different: the object of the image differs from the object of perception: (1) in that it has its own space, whereas there is an infinite space which is common to all perceived objects; (2) in that it occurs immediately as unreal, whereas the object of perception originally set up, as Husserl says, a claim to reality (Seinsanspruch). That unreality of the imagined object is the correlative of an immediate intuition of spontaneity* (Sartre, 1966: 102).

Therefore without context, the mental object remains internal, as it is still an image. Without context, it has not been externalised into reality.

2.24 With regard to perception in the above, Sartre suggests that: (1) all perceived object carries an infinite space and, (2) the object of perception has a claim to reality. Sartre later exemplifies the proposition by contrasting perception with dreams, which is: “a consciousness that is incapable of leaving the imaginative attitude” (Sartre, 1966: 213):
We have now arrived at the certain conclusion that the theme of the dream cannot be that of perception, even if it appears to resemble it on first sight. This we can also see from a simple inspection of reflective consciousness directed on a perceptive consciousness: To affirm that I perceive is to deny that I am dreaming, or, in other words, it is sufficient and necessary motivation for my affirming that I am not dreaming.

All this is, however, not enough. If we study the dream and perception somewhat more deeply we shall see that the difference that separates them is, from one point of view, like that between belief and knowledge. When I perceive a table I do not believe in the existence of that table. I have no need to believe in it since it is there by itself. There is no supplementary act by which, in addition to perceiving that table, I can confer upon it a believed or believable existence. The table is discovered, unveiled, given to me, in the very act of perception: and the thesis of the perceiving consciousness does not need to be confounded with the affirmation (Sartre, 1966: 211, 212).

The above infers that the probable link between imaginative consciousness and real object is perception.

**Mental Acts Of Architectural Innovation**

2.25 Sartre’s imaginative consciousness explains somewhat the first mental action of architectural innovation, which is the human ability to imagine. He suggests that the second act is perception. The first act is the creation of individual space, and the second act is to create infinite space, wherein perception enables the percipient to link the internal world with the external. To clarify this, he explains the first act as follows:

*For a consciousness to be able to imagine it must be able to escape from the world by its very nature, it must be able by its own efforts to withdraw from the world, In a word it must be free* (Sartre, 1966: 240).

2.26 In the act of individuation, through the first act, the architectural innovator places a distance between himself and the picture, or freeing himself from the image, unbounded to a system. Or, according to Jameson, “From within the system you cannot hope to generate anything that negates the system as a whole or portends the experience of something other than the system, or outside the system” (Leach, ed, 1997: 260). This freedom is also synthetically linked to the whole, as architectural innovation requires the link to the external world, which is Sartre’s second act: the link through perception, through infinite space. He further explains as follows:

*First of all we must bear in mind that the act of positing the world as a synthetic totality and the act of ‘taking perspective’ from the world are both one and the same. If we may use a comparison, it is precisely by placing oneself at a convenient distance that the impressionist painter disengages the whole ‘forest’ or the ‘white water lilies’ from the multitude of small strokes he has placed on the canvas. But, reciprocally, the possibility of constructing a whole is given as the primary structure of the act of taking perspective.*
It is therefore enough to be able to posit reality as a synthetic whole in order to posit oneself free from it and this going-beyond is freedom itself since it could not happen if consciousness were not free. Thus to posit the world as a world or ‘negate’ it is one and the same thing (Sartre, 1966: 240).

2.27 The closer the Sartre’s perspective get to concretising imagination, making architectural innovation probable, it closer it is drawn into the edges of phenomenology. Sartre begins to adopt Heidegger’s terminology, ‘being-in-the-world’ to make the concretisation of imagination plausible:

Thus, although as a result of producing the unreal, consciousness can appear momentarily delivered from ‘being-in-the-world’, it is just this ‘being-in-the-world’ which is the necessary condition for imagination.

Thus the critical analysis of the conditions that made all imagination possible has led us to the following discoveries: in order to imagine, consciousness must be free from all specific reality and this freedom must be able to define itself by a ‘being-in-the-world’ which is at once the constitution and the negation of the world; the concrete situation of the consciousness in the world must at each moment serve as the singular motivation for the constitution of the unreal (Sartre, 1966: 242).

2.28 The above infers, from the Sartre’s perspective, that architectural innovation is first motivated by producing the unreal, followed by singular moments during which the unreal is constituted, wherein the object of perception overflows consciousness constantly: “In a word, the object of perception overflows consciousness constantly; the object of the image is never more than the consciousness one has; it is limited by that consciousness” (Sartre, 1966: 12).

2.29 When architectural innovation is translated on paper, the manifestation defines itself as a kind of ‘being-in-the-world’ – this is because, from the Sartre’s perspective, “the whole of the real is surpassed in order to concretise what is imagined” (Sartre, 1966: 245). Further to this, the architectural innovation is defined as “the absent piece…. The imaginary thus represents at each moment the implicit meaning of the real” (ref. Sartre, 1966: 245). What is meant can be exemplified by Sartre’s commentary of an artist at work:

We often hear it said, in fact, that the artist first has an idea in the form of an image which he then realises on canvas. This mistaken notion arises from the fact that the painter can, in fact, begin with a mental image which is, as such, incommunicable, and from the fact that at the end of his labours he presents the public with an object which everyone can observe. This leads us to believe that there occurred a transition from the imaginary to the real. But this is in no way true. That which is real, we must not fail to note, are the results of the brush strokes, the stickiness of the canvas, its grain, the polish spread over the colours. But all this does not constitute the object of aesthetic
appreciation. What is ‘beautiful’ is something which cannot be experienced as a perception and which, by its very nature, is out of the world (Sartre, 1966: 247).

First And Second Acts Of Architectural Innovation

2.30 This infers that: what may count in a work of architectural innovation is not the sudden emergence of the final form from the first mental act but: (1) the first act, which is the conferment of individual space to the unreal, followed by, (2) the second act, which is perception, unifying the mental image with the world around it (ref. 2.22) – in the case of architecture, it will be the way the building is first drawn, the nature of the technology and materials used, the texture of the materials and the process of the work. The world is then extended to the environment, the context and then other broad issues. In the realisation of the work into reality the second act becomes extensive, wherein perception takes over from imagination. However, what is appreciated in architectural innovation is the apprehension of the unreal – the first act. With reference to cubist paintings for example, Sartre says:

The aesthetic enjoyment is real but it is not gasped for itself, as if produced by a real colour: it is but a manner of apprehending the unreal object and, and far from being directed on the real painting, it serves to constitute the imaginary object through the real canvas. This is the source of the celebrated disinterestedness of aesthetic experience.... This does not come from some mysterious way of apprehending the real, which we are to use occasionally. What happens is that the aesthetic object is constituted and apprehended by an imaginative consciousness which posits it as unreal (Sartre, 1966: 249).

2.31 Kearney explains that what Sartre is trying to put across is actually the change of attitude – “this shift from perceptual to imaginative consciousness that determines the sui generis nature of art” (Kearney, 1998: 79). Kearney goes on to explain that:

Sartre offers an interesting suggestion here that it is this mutual exclusiveness of intentionalities which accounts for the peculiar discomfiture one experiences when leaving a theatre of a concert-hall. The unease is engendered not by the passing from one place to another – from hall to street – but by passing from one attitude to the opposite – from imagination to perception. ‘Aesthetic contemplation is an induced dream and the passing into the real is an actual waking up’ (Kearney, 1998: 79).

Unreal And Real Exclusion

2.32 Kearney however went on to object to Sartre’s tendency to treat imagination in ‘pathological light’ saying that: “This is explicit in his treatment of the ‘abnormal’ expressions of imagination – hallucination, schizophrenia, neurasthenia, but is also present, if diplomatically understated, in the treatment of such ‘normal’ forms of imagination as dreaming, infatuation, fascination or aesthetic appreciation” (Kearney, 1998: 85). Kearney also objects to Sartre’s separation of aesthetics from the ethics, saying that: “By thus defining their relation as incorrigibly antithetical, Sartre is in effect
denying that art can ever be practical or that the praxis can ever be artistic” (Kearney, 1998: 86).

2.33  Kearney however seems to have missed Sartre’s point of separating the unreal from the real, the image from the perception, or for the matter, aesthetics from the ethics. What Sartre has effectively done is to posit the possibility of art in imaginative consciousness (in the first act), and to posit clearly, the genesis of creative innovation – which is first posited in the unreal (also in the first act). Communication with the real world is posited in perception (the second act), and the real is where praxis lay. Whilst it is true that Sartre does not allow the first and second acts to overlap, there is however the possibility of alternating – a mental action that every designer is familiar with. In any event it is impossible to overlap the first act with the second – how can a dream be a reality? It is either one or the other.

2.34  Sartre also posits true freedom with the imagination: “this going-beyond is freedom itself since it could not happen if consciousness were not free” (Sartre, 1966: 240). The genesis of architectural innovation requires mental freedom unfettered by systems, praxis or even ethics. Just as Kearney has pointed out (ref. 2.30) – after all, it is the matter of attitude, whether the mind chooses to align itself with dreams or with perception, with the unreal or the real, with imagination or praxis.

McAllister:
Show me the heart unfettered by
foolish dreams

And I will show you a happy man.

Keating:
Only in dreams can men
be truly free

Twas always thus
And always thus will be.

(Film: Dead Poets Society, by Peter Weir, 1989)

In Cultural And Historical Contexts

2.35  It is necessary to put into perspective the emergence of the existential attitude, which became especially prominent in Europe after the Second World War, that the emergence had a cultural basis: “The (existential) philosophy was…. a creation of the Western European continent at the moment in history when all of its horizons – political as well as spiritual – were rapidly shrinking” (Barrett, 1958: 10). Even Sartre’s influences from before the war, particularly, Heidegger and Jaspers, revolved their thinking around pervasive European intellectualism in the early part of the twentieth century:
Neither Heidegger nor Jaspers created their philosophies out of whole cloth; the atmosphere of German philosophy during the first part of this century had been quickened by the search for a new ‘philosophical anthropology’ – a new interpretation of man – made necessary by the extraordinary additions to all of the special sciences that dealt with man.... But what lifted Heidegger and Jaspers above the level of their contemporary philosophic atmosphere and impelled them to give a new voice of the intellectual consciousness of the age was their decisive relation to two older nineteenth-century thinkers: Soren Kierkegaard (1813-1855) and Friedrich Nietzsche (1844-1900) (Barrett, 1958: 11, 12).

2.36 Barrett further observes that the existential attitude is historical, fitting within a larger framework of European history after the war. Writing in 1958, Barrett suggests that:

Over the past hundred years the development of philosophy has shown a remarkable enlargement of content, a progressive orientation toward the immediate and qualitative, the existent and the actual – toward ‘concreteness and adequacy’.... In the broadest sense of the term, no doubt, all modern thought has been touched by a greater existential emphasis than was the philosophy of the early modern period. This is simply the result of the stepped-up secularisation of Western civilisation, in the course of which man has inevitably become more attached to the promises of this earth than to the goal of a transcendent realm beyond nature.... It is Europe that has been in crisis, and it is European thinkers who have brought the existential problems to the focal expression, who have in fact dared to raise the ultimate questions (Barrett, 1958: 18, 20, 21).

Existential Imagination In Architectural Innovation

2.37 Sartre’s type of existential imagination could not possibly be a style that can be said to apply exclusively to artistic pursuits, but it is an attitude (ref. 2.30): for its brief prominence after the war it puts the psychology of single persons (instead of, say community) at the centre of psychological examination. The extension of this attitude in conversation with architecture could possibly apply only to lone buildings outside of the urban context. The conversation cannot be any other than psychological wherein the observer and the author are exclusive to one another. The moment architecture is connected to cultural circumstances, say, in an urban context; the existential meanings fade away to be superseded by the demands of human life and the physical conditions around it.

2.38 Under the circumstances of ‘lone’ buildings, say one in the wilderness, like the Uluru-Kata Tjuta Cultural Centre by Greg Burgess in Uluru-Kata Tjuta National Park, there is a subjective, ineffable impact because the significance is solipsistic, as the building is compared with its vicinity in a psychological manner. The park is memorable for its monumental rock outcrops, particularly, Ayer’s Rock, which stands singularly on a vast arid plain, and also at 40 kilometres away, also visually prominent, is ‘The Olgas’ a collection of rock outcrops that together, is as large as Ayer’s Rock. Ayer’s Rock in particular, is often photographed in different colours, depending on the time of day and the atmospheric conditions – “the rock can dramatically change colour, anything from
blue to violet to glowing red” (www.crystalinks.com/ayersrock). Van Schaik observes that: “The two outcrops are so close that the one can be seen through the windsreen of a car whole the other fills the rearview mirror. A visitor who takes the time to observe these as a pair discovers that they are engaged in a perpetual dance of with the one turning red as the other turns navy blue, dawn and dusk. Externally, the Uluru-Kata Tjuta Cultural Centre seems to marry these two colour states” (van Schaik, 2006: 146).

2.39 The impact of the powerful mythical presence of Ayer’s Rock and ‘The Olgas’ upon the site is unavoidable. The building designed by Burgess sits in ‘possibly the most sensitive site in Australian mythology’ (van Schaik, 2006: 146). Some of the mythical aspects of the site is explained as follows:

Ayer’s Rock (Mount Uluru) is inhabited by dozens of ancestral ‘beings’ whose activities are recorded at many other sites. At each site that took place can be recounted, whether those events were of significance or whether the ancestral being just rested at a certain place before going on.

Usually, there is a physical feature of some form at each ancestral site which represents both the activities of the ancestral being at the time of its formation and the living presence of Tjukurpa within the physical feature today. For the Australian Aboriginal people, that physical feature, whatever its form or appearance, animate or inanimate, is the Tjukurpa. It may be a rock, a sand hill, a grove of trees, a cave. For all of these, the creative essence remains forever within the physical form or appearance.

Around Mount Uluru there are many examples of ancestral sites. The Anangu explanations of these sites and the formation of Mount Uluru itself derive from the Tjukurpa. Most of these explanations are in the realm of secret information and are not disclosed to the Piranypa, the non-Aborigines (www.crystalinks.com/ayersrock).

2.40 As part of the Aboriginal Dreamtime story for Ayer’s Rock, Tatji, a small Red Lizard, who lived in the mulgi flats, came to Uluru. He threw his kali, a curved throwing stick, and it became embedded in the surface. He used his hands to scoop it out in his efforts to retrieve his kali, leaving a series of bowl-shaped hollows (ref. www.crystalinks.com/ayersrock). A series of bowl-shaped hollow can be seen in one of the faces of Ayers Rock. Intentional or not, from the air, Burgess’ building resembles a pair of lizards (tatji), weaving their ways towards Ayer’s Rock, inscribing their patterns on the arid sand. Van Schaik observes that: “In both these cases Burgess’ clients responded strongly to his use of natural materials and sinuous lines approximating to drawings in sand” (van Schaik, 2006: 146).

2.41 Was it also coincidental, or did the mythology played into the mind of the architect whose looping interior of the Uluru-Kata Tjuta Cultural Centre resembles that of the emptied insides of a reptile. The exposed rafters resemble ribs of the sinuous creature and the trunks of the pale Casuarias are like bones of creatures. There is clearly a psychological component in Burgess’ building, but is it also cultural? The only culture that counts here is Aboriginal mythic culture, which can be manifested only symbolically.
This is echoed in the shape of the buildings (like lizards), their ground-scraping positioning (like traversing lizards), the exposed internal rafters (like ribs of lizards), the slates and shingles used on the roof (like scales of reptiles).

2.42 Architecture of existential imagination are symbolic, weighted towards psychological expectations. The culture that influences the architecture is also psychological, and in this respect, mythical. The influencing culture is not the ostensive kind of culture; that is, one that expectantly embodies political, social and economic conventions. The Burgess’ building carries instead, a culture of inner ostensivity, a psychological one, where the mythic culture is only recognised imaginatively, adopting Sartre’s idea of imaginative knowledge: “In order to describe correctly the phenomenon of reading it must be said that the reader is in the presence of a world. It is this fact that clearly demonstrates – if the matter were to be proven – the existence of what Binet calls ‘latent images’…. we must admit that some things does enact the role of these alleged latent images: namely imaginative knowledge” (Sartre, 1966: 81, 82).

2.43 The ‘latent images’ is not the result of interaction with external culture but psychological culture – the mythical culture, which works subjectively and solipsistically. The observers ‘knows’ in an internal way the rightness of Burgess’ architecture, not through interaction with other people; but with the environment and the land upon which the observer stands. Equally, Burgess did not arrive at the architecture to fit with the metropolis but with the myth (psychological) and the land (physical). If Burgess had depended on the quality of sociological (therefore human) interaction instead of psychological (therefore mythical) interaction, the existential position of the architecture would not have existed.

Conversely, how would architecture have fitted had it interacted firstly with people (therefore, with conventional culture)….? This is the subject of the next chapter.
Preamble

3.01 The first step from solipsism to the ostensive world is face-to-face interaction between two people, and then between three, and so on, leading on to interaction between groups of people. Interactions create situations – Collins terms these situations as ‘interaction rituals’ (Collins, 2004: 3). In the purview of interaction ritual (IR), architecture as an activity is a result of “momentary encounters among human bodies charged up with emotions and consciousness because they have gone through chains of previous encounters” (Collins, 2004: 3). This points to the case that architectural innovation is a cultural activity, arrived at interactively – it has social and cultural premise. Unlike existentialism, IR does not accept the permanence of uniqueness of individuals, as: “Individuals are unique to just the extent that their pathways through interactional chains, their mix of situations across time, differ from other persons’ pathways. If we reify the individual, we have an ideology…. but we cut off the possibility of explaining how individual uniqueness are moulded in a chain of encounters across time” (Collins, 2004: 4,5). Collins thus argues that human events result from an interaction chain of social activities and individual psychology forms only a part of IR chains:

Yes, human individuals also sometimes act when they are alone, although they generally do so because their minds and bodies are charges with results of past situational encounters, and their solitary action is social insofar as it aims at and comes from communicating with other persons and thus is situated by where it falls in an IR chain (Collins, 2004: 6).

The IR theory is a protagonist of the hypothesis, as the theory encompasses rules (language games) and activities (forms of life).
Innovation In IR Chain

3.02 According to IR theory, progressive attitude, say towards architecture innovation is a result of a chain of events connected to human interaction. This attitude generally takes place among an entire front of innovators who happen upon new information, data or materials. The ideas with which they analyse their newly acquired information resemble one another because they formulate their mental tools under the same cultural conditions, from the works of their predecessors. The cult of innovators would then raise a few canonical names and treat them as sole creators – this is to simplify and summarise an IR event (ref. Collins, 2004: 10). Csikszentmihalyi puts it as follows:

Therefore, to understand creativity it is not enough to study the individuals who seem most responsible for a novel idea or a new thing. Their contribution, while necessary and important, is only a chain, a phase in a process. To say that Thomas Edison invented electricity or that Albert Einstein discovered relativity is a convenient oversimplification. It satisfies our ancient predilection for stories that are easy to comprehend and involve superhuman heroes. But Edison’s and Einstein’s discoveries would be inconceivable without the prior knowledge, without the intellectual and social network that stimulated their thinking, and without the social mechanisms that recognised and spread their innovations (Csikszentmihalyi, 1996: 7).

Gardner shares this point when he says that: “Once again, as we saw in Einstein, Freud, Picasso, and Stravinsky, a creative individual on the threshold of his most dramatic achievement has benefited from close, almost parent- or sibling-like ties to respected intimates” (Gardner, 1993: 244).

Collective Motivation

3.03 IR theory propositions a collective motivation towards innovation through a mutual focus of attention towards a goal. What purports to happen, according to Collins is:

A high degree of intersubjectivity, together with a high degree of emotional entrainment – through bodily synchronisation, mutual simulation / arousal of participants’ nervous systems – results in feelings of membership that are attached to cognitive symbols; and result also in the emotional energy of the individual participants, giving them feelings of confidence, enthusiasm, and desire for action…. These moments of high degree of ritual intensity are high points of experience (Collins, 2004: 42).

3.04 What is mutually focussed upon becomes the emblems, or cognitive symbols of the group. In the cult of innovators, canonical names and their works are the emblems that represent the group. Through the emblems the group focuses on its own feelings of intersubjectivity and shared emotions – it reifies its experiences. Collins explains IR role in this as follows:

One chief result of rituals is to charge up symbolic objects with significance, or to recharge such objects with renewed sentiments of respect. Along with this, individual
participants get their own reservoir of charge. The ‘sort of electricity’ that Durkheim metaphorically ascribes to the group in its state of heightened excitement is stored in batteries: one component of which is the symbol, and the other pole of which is the individual. Participant in the ritual gives the individual a special kind of energy, which I will call emotional energy (Collins, 2004: 38).

**IR Emblem**

3.05 What motivates the architect in the cult of innovators is to be recognised as an emblem of the group. The innovative architect who has become an emblem, or cognitive symbol of the group equates with the way a politician, a religious leader, or a sports figure can become emblems for other IR groups. The emblems are essential for the prolongation of the group, as they become subjects for third-person narrations, gossips and are subjects of conversation within the network: “Both individual names and narratives about them are symbols, which get charged up with significance through the amount of momentary effervescence of the conversations in which they play a part” (Collins, 2004: 85). The emblem then becomes mythic as: “The accuracy of these accounts is a minor consideration in successful conversational ritual, and the further the network goes from the source, the less a consideration it becomes at all” (Collins, 2004: 85). There is also perceived profit in this for emblems whose names are canonised and mythicised, as they are situated at the pinnacle of an elitist group where:

Entrée into and success within a particular occupational network is not only a matter of having the generalised cultural capital of that group – that which is known widely among persons who may not be acquainted with each other – but also having particular knowledge of who did what, who has what track record, who has connection with whom, “where the bodies are buried”. The latter form of knowledge or particularised cultural capital or symbolic repertoire may well be the most important kind, especially for the dynamics of fluidly moving situations, such as business transactions where time is of the essence, or analogously for scientists or other intellectuals attempting to innovate on the cutting edge before someone else does so. Here too, as in the world of private sociability, symbolic reputations are amplified to higher levels in networks that have enough redundant social ties so that symbols circulate in at least some closed loops, reinforcing the significance of a symbol because it is heard from all sides, and probably exaggerated in the retelling (Collins, 2004: 86).

3.06 In sociological terms, the emblem of the group acts also like the sacred symbol for the group: it provides a flow of emotional energy to the group. Following Chambliss’ studies of competitive athletes in 1989, Collins points that:

These dominated persons can cope with the situation, can maintain some anticipation about what will happen only by focusing on the other person as the lead, rather than projecting their own volitional future. In effect, such a person can recoup some emotional energy from the situation by becoming a follower, attaching themself to someone else’s lead. The more they resist such attachment, the less emotional energy they will have left.
In terms of the IR model, one could say that the dominant person makes oneself the focus of interaction. He or she becomes, in some sense, a Durkheimian sacred object (Collins, 2004: 122, 123).

3.07 The metaphysical equivalent to this would be religious symbols found all over the world. In the anthropological sense, these religious symbols provide meaning to the group or culture. They also are cultural gels, which is why when religious symbols are threatened, the threat is perceived by the group as a threat to the group’s existence and often, reaction is violent: it becomes a matter of emotional survival. Geertz explains the importance of metaphysical symbols as follows:

But meanings can only be ‘stored’ in symbols: a cross, a crescent, or a feathered serpent. Such religious symbols, dramatised in rituals or related in myths, are felt somehow to sum up, for those for whom they are resonant, what is known about the way the world is, the quality of emotional life it supports, and the way one ought to behave while in it. Sacred symbols thus relate an ontology and a cosmology to an aesthetics and a morality: their peculiar power comes from their presumed ability to identify fact with value at the most fundamental level, to give to what is otherwise merely actual, a comprehensive normative import (Geertz, 1973: 127).

3.08 What the innovative architects, when recognised as emblem has gained over the group is asymmetrical power, under this circumstance, Collins explains that, “Power is an asymmetrical focus of attention upon such a situation, so that one side battens on the energy that all the participants have mutually produced. In a power ritual, the social battery is revved up, but the benefit goes largely to one side” (Collins, 2004: 125). It is thus evident that the emblem gains not only social significance (ref. 3.05) but also power and becomes the main beneficiary of collective emotional energy. The type of emotional energy associated with such gain would be joy and enthusiasm (ref. Collins, 2004: 125).

3.09 According to Collins, there is asymmetrical stratification of emotional energy within the group, and that the emblem fits analogically, in an energised upper class, “Lording over a depressed lower class, with moderately energised middle-class persons in between” (Collins, 2004: 132). Taking this pattern, the winning innovators become the ‘energy stars’ – they become socially significant and would appear as such:

Persons with lower amounts of EE (emotional energy) are impressed by those who have accumulated a lot of it; such people have an EE-halo that makes them easy to admire. They are persons who get things done; they have an aura of success surrounding them. And since having high EE allows one to focus attention, one can get a certain amount of rise in one’s own EE by following them... This high EE gives dominant persons a kind of micro-situational legitimacy (Collins, 2004: 132, 133).

3.10 IR theory infers that individual behaviour is shaped by ritual participation, and that EE operates as the common denominator in the determinant of choices made between various courses of action and behaviour: “Emotional energy is the common
denominator of all social comparisons and choices” (Collins, 2004: 172). Under IR theory, the investment of emotion, energy, costs and time is intended to result in emotional energy benefits. In architectural innovation, the benefit to the innovator is to be accepted as an emblem of the group with all the benefits raised in 3.08. Hence:

\[
\text{IR maximise ratio} = \frac{\text{benefits (EE)}}{\text{investments (EE + time + material)}}
\]

According to Collins, “the theory of maximisation ration is more powerful when applied to emotional currency of social life and the structures of interaction that produce it” (Collins, 2004: 182).

**IR Network**

3.11 In IR theory, the factor that enables the all the elements in the equation is networking. According to the theory, an intensive network between successful innovators enables architectural innovation: successful innovators have more network ties to other successful innovators than less successful innovators do. It infers that great innovators are more closely connected to other great innovators than are those in the lower rungs of innovation, and minor innovators have fewest ties of all. To Collins, “In the case of ideas we are concerned with here, the ideas which have mattered historically, it is possible to demonstrate that the individuals who bring forward such ideas are located in typical social patterns: intellectual groups, networks and rivalries” (Collins, 1998: 3).

3.12 Taking philosophers for example, Collins observe a chain of mentoring both upstream and downstream and, “across the generations both backward and forward in time. Great philosophers have more pupils and grandpupils who are relatively successful than lesser philosophers do; intellectual success propagates forward but also backward – having pupils who do important work is part of what gets an individual a long-term historical reputation as having had very important ideas” (Collins, 2004: 190). This observation could equally apply to architectural innovators, and the reasons given by Collins from the IR perspective could be said of architectural innovators:

*One of the reasons why there tend to be a chain from one highly creative intellectual to another is that the younger persons draws energy from the older just as such a symbolic hero. It is not merely a matter of transmitting cultural capital from one generation to the next, since we are dealing here with creative departures rather than loyal discipleship. The protégé’s consciousness is filled by the image of what it is to be an intellectual hero, by an ideal to emulate, even while one challenges the content of the master’s ideas* (Collins, 1998: 36).

3.13 To Collins, ideas do not emerge out of isolation, but are part of a larger network:

*There are particular locations in intellectual networks where a few individuals become highly focussed, highly energised, putting together streams of symbols in new ways; and those symbols do indeed come from outside, not from a creative realm of
creative spirit, but from the dynamics of the intellectual community internalised in that person’s mind and now on their way to being externalised again (Collins, 2004: 192).

The internalisation is not an existential one, but is a recombination of the development of ideas and techniques (ref. Collins, 2004: 193).

3.14 Other than vertical network between mentors and pupils as outlined in 3.12 above, Collins also propositions horizontal networking between peers, where redundancy networking produces a strong sense of collective identity (ref. Collins, 2004: 193). In architecture, innovators often acquaint themselves in the same forum where they meet to propound their latest works, and the same innovators appear in often the same publications where they tend to compare works. In Asia, interaction groups for architectural innovators periodically feature in the same forums such the Asian Design Forum and AA Asia (ref. also van Schaik, 2005: 118-120).

3.15 In ‘Creative Minds’ (1993), Gardner says that even the giants of innovation in the twentieth century often knew one another, and they take into account innovative conceptualisations done in domains other than their own:

*It is important that individuals like Picasso and Stravinsky were friends in late life. Freud and Einstein had a casual acquaintance and engaged in a memorably pointed correspondence about war. Certain ideas associated with these creators become such common coin that anyone working during the era would have encountered them…. It would be odd if highly creative individuals did not somehow take others’ novel conceptualisations into account in their own work (Gardner, 1993: 15).*

He is to reassert this again in ‘Multiple Intelligences’ in 1999, when speaking about individuals, Gardner infers that innovators do not appear from nowhere but are part of societal, or cultural network: “Individuals do not exhibit their intelligences ‘in the raw’; they do so by occupying certain relevant niches in their society, for which they must prepare by passing through an often lengthy development process. In a sense, intelligences have their own developmental history” (Gardner, 1999: 38).

**Traits**

3.16 However, to be an important innovator, it is not simply a matter of mere enchainment with mentor and peers but of possessing distinguishable difference – there must be emergence of strong originality, that is, new ideas has to emerge. There are usually only a few of these important innovators and they change the course of prevailing paradigm. Every student and architect is familiar with the usual architectural icons whose mention is inevitable in architectural history—Collins explains the leads towards identifying the traits of important innovators. The first of which is the break from the mentor:

*To be an important thinker in one’s own right means to create new ideas. Often that means breaking with one’s teacher.... They are far from universal, since minor figures do not break with their teachers, but occur only when structural conditions are
present that open up space for new positions to be formulated…. One pattern that is transmitted, even across breaks in ideas, is high EE. Eminent thinkers are energy stars (Collins, 2004: 192).

3.17 The second trait is high productive output from the innovator, where only a few of the works will become famous. Collins propositions that the inspiration for these famous works are not internal but external, part of cultural dynamics:

They work extremely long hours, seemingly obsessed with their work; their thinking is itself energising for them, as if they are magnetically drawn along their chains of thought. At the peak of momentum in these spells of thinking ideas come into their heads.... This pattern, found among those most magnetised by their work, gives some credence to the notion of ‘inspiration’, as if the creative thinker is a genius, uniquely in touch with creative flow from some higher region. The metaphor is misplaced, but it translates into a sociological truth; there are particular locations in intellectual networks where a few individuals become highly focused, highly energised, putting together streams of symbols in new ways; and those symbols do come from outside, not from a mysterious realm of creative spirit, but from the dynamics of the intellectual community internalised in that person’s mind and now on their way to being externalised again (Collins, 2004: 192).

3.18 Thus according to Collins, the innovator works extremely long hours for the few works which will become famous. However, using Pareto’s 80/20 principle, Gardner infers in 2004 that 80 percent of an innovator’s recognition will come from 20 percent of his output. Therefore it would make sense to devote attention and resources to the profitable products while dropping the losers (ref. Gardner, 2004: 8). However, this remains merely a concept, as a devotion to the small number of works will result in diminishing returns if the principle were to remain consistent. Until demonstrated otherwise, Collins’ assertion that the innovator works extremely long hours for the few works to achieve the intended dynamics still applies.

3.19 In 1993, Gardner infers a probable third trait, which has to do with the personalities of innovators. He refers to a study on the personality traits of ‘creative architects’, but they were general and he qualified the study:

In a representative study conducted by the Berkeley Institute of Personality Assessment, ‘creative architects’, as distinguished from their less creative peers, exhibited a greater incidence of such personality traits as independence, self-confidence, unconventionality, alertness, ready access to unconscious process, ambition, and commitment to work. However, it is not clear whether people who already exhibited such characteristics become creative or whether, as a result of acknowledge creativity, people come to exhibit such positively tinged traits. Also, individuals who work closely with those deemed creative seem to exhibit a similar profile of traits (Gardner, 1993: 23,24).

3.20 Collins is however, unconvinced with the generalised flamboyance of personalities as suggested in the study above, which Gardner quotes. He infers that the
high regard for flamboyance is misplaced; what is more essential is the possession of high emotional energy: “Not all creative individuals have the same flamboyance – and the same publicity focused upon their private behaviour – but they all have relatively high degrees of emotional energy concentrated in their work” (Collins, 2004: 192). Therefore, to Collins, the traits that count are only those of 3.16, 3.17 above.

**Flow States**

3.21 However, Gardner suggests an inferred state of mind of an innovator in the process of work, first propositioned by Csikszentmihalyi in 1990 as ‘flow’, a mental state of heightened attention:

> The attainment of heightened attention, as in ‘flow states’, is also within at least partial control of the experiencer. Under such highly desirable circumstances, people become so immersed in the execution of an activity that they lose all sense of time and space. Certain brain centres and neural transmitters are mobilised in these states, whether they are induced by the ingestion of substances, involvement in a hobby, or sheer control of will (Gardner, 1999: 63).

3.22 When Csikszentmihalyi first suggested ‘flow’ in 1990, he describes it as:

> The optimal state of inner experience is one in which there is order in consciousness. This happens when psychic energy – or attention – is invested in realistic goals, and when skills match the opportunities for action. The pursuit of a goal brings order to awareness because a person must concentrate attention on the task at hand and momentarily forget everything else. The periods of struggling to overcome challenges are what people find to be the most enjoyable times of their lives.... By stretching skills, by reaching toward higher challenges, such a person becomes an increasingly extraordinary person (Csikszentmihalyi, 1990: 6).

3.23 It is evident that Gardner’s ‘flow states’, Csikszentmihalyi’s ‘flow’ and Collins’ ‘emotional energy’ share exactly the same meaning.

Gardner’s ‘heightened attention’ where, *Certain brain centres and neural transmitters are mobilised in these states, whether they are induced by the ingestion of substances, involvement in a hobby, or sheer control of will* (ref. 3.20) infers the same meaning as:

Csikszentmihalyi’s *The optimal state of inner experience is one in which there is order in consciousness. This happens when psychic energy – or attention – is invested in realistic goals, and when skills match the opportunities for action. The pursuit of a goal brings order to awareness because a person must concentrate attention on the task at hand and momentarily forget everything else* (ref. 3.21).

This again is the same as Collins’ *A high degree of intersubjectivity, together with a high degree of emotional entrainment – through bodily synchronisation, mutual simulation / arousal of participants’ nervous systems – results in feelings of membership*.
that are attached to cognitive symbols; and result also in the emotional energy of the individual participants, giving them feelings of confidence, enthusiasm, and desire for action…. These moments of high degree of ritual intensity are high points of experience (ref. 3.03).

Therefore:


–The psychological circumstances when innovation occurs.

3.24 Although Csikszentmihalyi describes psychic energy in ‘flow’, it is not an existential or mystical hidden energy, but one that is overt as he later qualifies:

After all, mystical experiences are not necessary to account for the performance of a great violinist, or a great athlete, even though most of us could not even begin to approach their powers…. Like all virtuosos, he must spend many years learning, and he must keep constantly in training. Being a specialist he cannot afford the time or the mental energy to do anything other than fine-tune his skill at manipulating inner experiences….

Because no branch of science deals with consciousness directly, there is no single accepted description of how it works. Many disciplines touch on it and thus provide peripheral accounts. Neuroscience, neuroanatomy, cognitive science, artificial intelligence, psychoanalysis, and phenomenology are some of the most directly relevant fields to choose from; however, trying to summarise their findings would result in an account similar to the descriptions the blind men gave of the elephant: each different, and each unrelated to the others. No doubt we shall continue to learn important things about consciousness from these disciplines, but in the meantime we are left with the task of providing a model that is grounded in fact, yet expressed simply enough so that anyone can make use of it (Csikszentmihalyi, 1990: 25).

KLPAC – Case Study of IR In Architecture

Background

3.25 Since its opening in 2005, the KLPAC (Kuala Lumpur Performing Arts Centre) is becoming an emblem for those in need of constant emotional recharging. It fills a void in the performance arts in KL and gives meaning to those who wishes for the arts to occupy our time besides the everyday pursuit of ordinary existence. From the IR perspective, the KLPAC is a significant distribution centre of emotional energy – the kind of energy that gives joy and enthusiasm, a place of innocence and the sustenance of it. It is an ideal of an art group manifested in real form, one that has intense emotional energy for the group.

3.26 From the IR perspective all interaction groups need its emblem, and this emblem has a legendary beginning, one that is forged, in the beginning, by misfortune, and later by seemingly supernatural intervention. It began when the Actors’ Studio at
Dataran Merdeka (Independence Square) was flooded out of existence in a massive flood in Kuala Lumpur in June 2003, with significant material as well as cultural loss, as even then, there was no other place like the Actors’ Studio, a theatre, wholly funded by private means, nurtured by love for the performing arts and energised by a sense of mission. All the resources for the Actors’ Studio emanates from a husband and wife team of Joe Hasham and Faridah Merican. The couple is symbolic to the performing arts of the city.

3.27 It had taken a telephone call of conscience from the landscape architect (Ng Sek San) of the Sentul West development (a development at a dilapidated part of KL), an otherwise unlikely meeting between a corporate icon (Francis Yeoh) and his men with the Actors’ Studio and the prompting of the then Deputy Prime Minister’s wife (Endon) to see an uncanny realisation of what was nothing more than mere hope. All the rest of the activities, from inception to the realisation of the building: from the setting of a budget, the magnanimity of a corporate giant, the presence of a magical setting, the singular sense of mission of all those subsequently involved, converged together in a combined collective will to realise the dream. Under this context, Csikszentmihalyi’s ‘flow’ seems an appropriate terminology to portray Collins’ collective motivation (ref. 3.03, 3.04). EE was the common denominator that brought together the various human emblems, representing different domains together. From the IR perspective what has happened was a mutual attention towards a goal and could be represented by Collins description (ref. 3.03):

*A high degree of intersubjectivity, together with a high degree of emotional entrainment – through bodily synchronisation, mutual simulation / arousal of participants’ nervous systems – results in feelings of membership that are attached to cognitive symbols; and result also in the emotional energy of the individual participants, giving them feelings of confidence, enthusiasm, and desire for action...* (Collins, 2004: 42).

**IR Architecture**

3.28 Unlike the staid, commercial architecture usually associated with large property development corporations like YTL, which has its own architectural division, the KLPAC appeared like a breath of fresh air in the corporation’s portfolio. The team of architects in YTL, lead by Baldip Singh produced a work of architecture which has emotional content, which does not ‘smell of money’, that can be an enjoyable place to be. In his description of the building, the architect is keen to emphasise that the building is an honest one, which is arrived at from the premise of functionality – with materials and services that are expressed as part of the architecture. With this basic premise, the resulting architecture is one of considerable merit.

3.29 Seen in the IR perspective, the building is mutually focussed upon, becoming the emblem, or cognitive symbol of the group(ref. 3.04). Collins put this as follows:

*One chief result of rituals is to charge up symbolic objects with significance, or to recharge such objects with renewed sentiments of respect. Along with this, individual participants get their own reservoir of charge. The ‘sort of electricity’ that Durkheim*
metaphorically ascribes to the group in its state of heightened excitement is stored in batteries: one component of which is the symbol, and the other pole of which is the individual (Collins, 2004: 38).

Further Description

3.30 However, the IR description of the architecture, leaves it yet incomplete as the completed building merit a phenomenological description. Particularly in the way that the building sits engagingly in a minimalist landscape, providing the sense of presentness, having a phenomenological sense as the building is approached or viewed from the grounds. The presentness is enhanced as the distinction between landscape and building is blurred, particularly where the water feature permeates in and out of the entrance lobby. A permeable, signature landscape wall defines the grounds of the architecture from the landscape areas but the definition is merely gestural – like a brush-stroke – something to look at, like a work of art. The lightness and permeability of space continues into the main stairs made out of just steel sections.

3.31 The building is also one of adaptive reuse, the architecture appears successful because the new and the old parts of the building are distinctive and recognisable. The new exists side by side with the old without damaging what is precious. Both the old and the new exist together in presentness. At the central areas, the new roof rises above the old one in order to make the theatre functional. In any case there appear to be a genuine attempt to respect the old. The eventual architecture is a tactile one, with the preserved bricks and metal trusses kept as a reminder of what the old world once was.

3.32 The requirements for a phenomenological description necessitate an examination of phenomenology in architecture in the next chapter….
FOUR:
PHENOMENOLOGICAL IMAGINATION (ANTAGONIST)

Literature Review D:
Husserl, Ideas Pertaining To A Pure Phenomenology And To A Phenomenological Philosophy, 1998
Merleau-Ponty, Phenomenology Of Perception, 1962

Supporting Literature:
Husserl, Cartesian Meditations, 1960
Heidegger, Being And Time, 1962
Levi-Strauss, The Savage Mind, 1966
Sacks, The Man Who Mistook His Wife For A Hat, 1985
Damasio, Descartes' Error, 1994
Holl, et. al., Questions Of Perception, 1994
Kearney, Poetics Of Imagining, 1998
Priest, Merleau-Ponty, 1998
Moran, Introduction To Phenomenology, 2000
Dylan, Chronicles Volume 1, 2004
Hick, The Fifth Dimension, 2004

Preamble

4.01  Like existential imagination, phenomenological imagination celebrates the imagination’s creative power by doing away with traditional theories that tied the imagination to conceptual prejudices such as: ‘dualism’, ‘representationalism’ and ‘reification’. Before Sartre’s existential imagination, it was Husserl’s phenomenological imagination that freed the imagination from its inherited conceptual constraints. Sartre describes the constraints as ‘illusion of immanence’, which is to be overcome:

By revealing the image to be an intentional structure, Husserl frees it from the condition of an inert content of consciousness. At one stroke vanish, along with the immanent metaphysics of images, all the difficulties concerning the relationship of the simulacrum to its real object, and of pure thought to the simulacrum.... Husserl freed the psychic world of a weighty burden and eliminated almost all the difficulties that clouded the classical problem of the relations of images to thoughts (quote, Kearney 1998: 13).

4.02  Hence in phenomenological imagination, the ultimate grounding act to free the imagination is not something to do with experience, but that to do with intention or, ‘the seeing of essences’. He uses the example of the ‘geometer’, or the creative draughtsman (or architect) to elucidates what can be achieved eidetically rather than experientially:

The geometer who draws his figures on the board produces thereby factually existing lines on the factually existing board. But this experiencing of the product, qua
experiencing, no more grounds his geometrical seeing of essences and eidetic thinking than does his physical producing. This is why it does not matter whether his experiencing is hallucination or whether, instead of actually drawing his lines and construction, he imagines them in a world of phantasy. It is quite otherwise in the case of the scientific investigator of Nature. He observes and experiments; that is, he ascertains factual existence according to experience; for him experience is the grounding act which can never be substituted by a mere imagining. And this is precisely why science of matters of fact and experiential science are equivalent concepts. But for the geometer who explores not actualities but ‘ideal possibilities’, not predicatively formed eidetic affair-complexes, the ultimate grounding act is not experience but rather the seeing of essences (Husserl, 1998: 16).

4.03 Although the phenomenological method is freed from logical presuppositions, such as the empiricist and rationalist premises, Husserl requires it to be based on rigour, as certain as that of the sciences, by ‘understanding the fundamental essence of existence’ (Kearney, 1998: 15). It is different from the other sciences on eidetic grounds:

Within the circle of our intuitions of the individuals, to determine the ‘summa genera of concretions’ and, in this manner, to effect ‘a distribution of all intuited individual being according to regions of being, each of which marks off an eidetic or empirical science’ (or group of sciences) that is ‘necessarily distinct’ from other sciences because it is distinguished from them in the most radical eidetic grounds (Husserl, 1998: 32).

Phenomenology A Product Of Consciousness

4.04 Just as Sartre was to later separate imagination from perception, Husserl separates the imagination from the object of observation, thus enabling the rigorous interrogation of creative imagination. Taking the mythical centaur as example, the centaur is imagined as a product of the mind, that is, of consciousness:

The flute-playing centaur we freely imagine is precisely our objectivational formation. – Certainly ‘concept formation’ and likewise free fiction are carried out spontaneously, and what is spontaneously generated is obviously a product of the mind.... the centaur is indeed ‘nothing’, it is wholly ‘imagination’, stated more precisely: the mental process of imagining is the imagining of the centaur (Husserl, 1998: 43).

4.05 Phenomenological imagination thus redefines the image as a relation, an act of consciousness directed at an object beyond consciousness. By doing this the world remains at all times transcendent of the consciousness which intends it:

Our considerations have established that the physical thing is transcendent to the perception of it and consequently to any consciousness whatever related to it; it is transcendent not merely in the sense that the physical thing cannot be found in fact as a really inherent component of consciousness; rather the whole situation is an object of
eidetic insight: With the absolute unconditional universality and necessity it is the case that a physical thing cannot be given in any possible perception, in any possible consciousness, as something really inherently immanent. Thus there emerges a fundamental essential difference between being as a mental process and being as a physical thing (Husserl, 1998: 89).

Perception Bridges Imagination With Reality

4.06 Like Sartre who was to follow him, Husserl separates the imagination, the perception and physical reality (object), but the perception is seen as the bridge between imagination and the physical reality and that only perception engages with physical reality.

The perception of a physical thing does not presentiate something non-present, as though it were a memory or a phantasy; perception makes present, seize upon an it-itself in its presence ‘in person’. Perception does this according to its own peculiar sense; and to attribute something other than that to perception is precisely to contradict its sense. If we are dealing, as here, with the perception of a physical thing then it is inherent in its essence to be an adumbrative perception; and correlative, it is inherent in the sense of its intentional object, the physical thing as given in it, to be essentially perceivable only by perceptions of that kind, thus by adumbrative perception.... Every perception of something immanent guarantees the existence of the object (Husserl, 1998: 93, 94, 100).

4.07 Husserl advocates that there is an inexactness about perception. By describing perception as ‘adumbrative’ he infers a degree of inherent vagueness about perception. This is illustrated by the change of the tonal quality of sound heard in different positions and of objects seen in different light and orientation:

A violin tone, in contrast, with its objective identity, is given by adumbration, has its changing modes of appearance. These differ in accordance with whether I approach the violin or go farther away from it, in accordance with whether I am the concert hall itself or am listening through the closed doors, etc. No one mode of appearance can claim to be the one that presents the tone absolutely although, in accordance with my practical interests, a certain appearance has a certain primacy as the normal appearance: in the concert hall and at the ‘right’ spot. I hear the tone ‘itself’ as it ‘actually’ sounds. In the same way we say that any physical thing in relation to vision has a normal appearance; we say of the colour, the shape, the whole physical thing which we see in normal daylight and in normal orientation relative to us, that this is how the thing actually looks; this is the actual colour, and the like (Husserl, 1998: 96).

Truth In Imagination

4.08 Through perception, the physical reality is experienced, however, in phenomenological imagination, when the experienced is dissolved into the eidetic, it (the eidetic) manifests a deeper truth than the physical reality. Husserl explains as follows:
The existence of a world is the correlate of certain multiplicities of experience distinguished by certain essential formations. But it cannot be seen that actual experiences can flow only in such concatenated forms; nothing like that can be seen purely on the basis of the essence of perception taken universally, and of the essences of other collaborating kinds of experiential intuition. It is instead quite conceivable that experience, because of conflict, might dissolve into illusion not only in detail, and that it might not be the case, as it is de facto, that every illusion manifests a deeper truth and that every conflict... in short, that there might no longer be any world (Husserl, 1998: 109).

4.09 Husserl then reduces the whole spatiotemporal world as part of human Ego, which is known only in human consciousness. In other words, the spatiotemporal world is only known intentionally, beyond which, it is ‘nothing’:

The whole spatiotemporal world, which includes human being and the human Ego as subordinate single realities is, according to its sense, a merely intentional being, thus one has the merely secondary sense of being for a consciousness. It is a being posited by consciousness in its experiences which, of essential necessity, can be determined and intuited only as something identical belonging to motivated multiplicities of appearances: beyond that it is nothing (Husserl, 1998: 112).

4.10 To further emphasize on the subservience of reality to phenomenological imagination, Husserl propositions that:

Reality is not in itself something absolute which becomes tied secondarily to something else; rather, in the absolute sense, it is nothing at all; it has no ‘absolute essence’ whatever; it has the essentiality of something which, of necessity, is only intentional, only an object of consciousness, something presented in the manner peculiar to consciousness, something apparent <as apparent> (Husserl, 1998: 113).

4.11 The truth is thus entrusted only in one’s ‘own absolute being’ as all else that is physical is considered as ‘nothing’: The fundamental field of phenomenology is a mental process, that is, a psychological process:

In other words, instead of naively effecting the acts pertaining to our Nature – constituting consciousness with their posittings of something transcendent, and letting ourselves be induced, by motives implicit in them, to effect ever new posittings of something transcendent – instead of that, we put all postings ‘out of action’, we do not ‘participate in them’; we direct our seizing and theoretical enquiring regard to pure consciousness in its own absolute being. That, then, is what is left as the sought-for ‘phenomenological residuum’ though we have ‘excluded’ the whole world and all physical things, living beings and humans, ourselves included. Strictly speaking, we have not lost anything but rather have gained the whole of absolute being which, rightly understood, contains within itself, ‘constitutes’ within itself, all worldly transcendencies (Husserl. 1998: 113).
Network Of Evidence Is In The Context

4.12 Being eidetic, the mental process is not a concrete process in the sense that it is not a self-sufficient one in the full sense – there always is a need for supplementation with respect to prescribed concatenation. It is the interaction chain – the network of evidence that necessarily takes away the arbitrariness of the eidetic mental process. In architecture, the network of evidence is actually the context as propositioned by Husserl, and that the medium is perception:

We observe any perception of something external, let us say of this determined perception of a house taken in concrete fullness; there then belongs to this perception the surroundings of mental processes as a necessary determinational part; however, it is, to be sure, a specifically peculiar, necessary and yet ‘extra-essential’ determinational part. Namely that determinational part the change of which alters nothing in the essential contents proper to the mental process. Thus perception itself changes according to change in determinedness of the surroundings, while the ultimate specific differences of the genus Perception, its inner ownness, can be conceived as identical (Husserl, 1998: 198).

Intention Separates Imagination From Perception

4.13 Being non-concrete, the creative mental image is not an internalised ‘quasi-thing’; instead, the essence of the creative image is an intentional act. Husserl propositions that it is the intentional nature of phenomenological imagination that separates it from perception:

Under intentionality we understand the own peculiarity of mental processes ‘to be conscious of something’. We first of all encounter this marvellous ownness, back to which all rational-theoretical and metaphysical enigmas lead, in the explicit cogito: a perceiving is a perceiving of something, perhaps a physical thing; a judging is a judging of a predicatively formed value complex; and so forth (Husserl, 1998: 200).

4.14 Imagination is a part of this intentive mental process, and it is imagination that releases things from the contingent status of facts and grants them an idealised status as possibilities, wherein each fact is only a single instance among many possible instances (ref. Kearney, 1998: 20). The value of multiple instances to creative imagination is elaborated by Kearney as follows:

Imagination allows universals to present themselves through multiple rather than merely single instances. To be sure, the ‘a priori’ essence is present in every single instance of its actual experience. But it is present in a partial and implicit way, as but one moment of its total horizon. Free variation supposedly allows this essence to present itself in a full and explicit way, by filling out the total horizon with fictional instances. This filling out is what Husserl calls ‘constitution’. The essence does not actually exist prior to our constitution to it. Rather, it comes to be through the process of free variation (Kearney, 1998: 25).
4.15 Although Husserl’s intentionality applies to both imagination and perception, the two aspects of consciousness are separated by: 1) Intention of irreality in the case of imagination and, 2) Intention of reality in the case of perception. With the example of the flute-playing centaur (ref. 4.04), Husserl suggests that the fact that the centaur does not actually exist does not eliminate it as a psychological entity. His image intention of the centaur is clearly an irreality. Kearney further illuminates what Husserl meant as follows:

To perceive my brother and to imagine my brother are two different ways of intending the same transcendent object. The intentional percept refers to the same object – my brother – as the intentional image; but the crucial difference is that the first intends him as real, the latter is unreal. In this way, phenomenology rescues imagination from its ‘naturalistic’ confusion with perception, and restores it to its essential role as a power capable of intending the unreal as if it were real, the absent as if it were present, the possible as if it were actual (Kearney, 1998: 16).

4.16 Among the advocates of architectural phenomenology, Holl propositions that it is intention that sets architecture apart from the other sensational and physical engagement with phenomenology. What Holl propositions could equally apply to other forms of art:

While sensations and impressions quietly engage us in the physical phenomena of architecture, the generative force lies in the intentions behind it.... Questions of architectural perception underlie questions of intention. This ‘intentionality’ sets architecture apart from pure phenomenology that is manifest for the natural sciences. Whatever the perception of a built work – whether it is troubling, intriguing, or banal – the mental energy which produced it is ultimately deficient unless intent is articulated. The relationship between the experiential qualities of architecture and the generative concepts is analogous to the tension between the empirical and the rational. Here the logic of pre-existing concepts mess the contingency and the particularity of experience (Holl, et. al., 1994: 41)

Creativity Lies In The Non-Ostensive

4.17 In phenomenological imagination therefore, the surest way of grasping essences and therefore free the imagination to enable creativity lies in the non-ostensive, which is human consciousness in the solipsistic sense. Husserl propositions that eschewing the physically ostensive, with reference to naturalism or empirical science is conditional to this:

Thus I exclude all sciences relating to this natural world no matter how firmly they stand there for me, no matter how much I admire them, no matter how little I think of making even the least objection to them; I make absolutely no use of the things posited in them. Nor do I make my own single one of the propositions belonging to <those sciences>, even though it be perfectly evident; none is accepted by me; none gives me a foundation – let this be well noted; as long as it is understood as it is presented in one of those sciences as a truth about actualities of this world. I must accept such a proposition
until after I have put parenthesis around it. That signifies that I may accept such a proposition only in the modified consciousness, the consciousness of judgment-excluding, and therefore not as it is in science, a proposition which claims validity and the validity of which I accept and use (Husserl, 1998: 61, 62).

4.18 In contrasting the empirical science with possibilities, where creativity could be possible, Husserl uses the terminology, ‘intenteive mental process’ (ref. Husserl, 1998: 73), also nominally referred to as ‘noesis’ and ‘noema’ in pp. 211-325, which in the broadest sense is ‘consciousness of something’ which is free from empirical science. Memory, for example is one of the intenteive stratum, regarded as a ‘remembering noesis’ that can wonder into a world of fantasy in a creative mental process:

‘Noemata’ And ‘Noesis’

Suddenly we turn our regard to an object of memory which ‘comes to mind’: Instead of going through the perpetual noesis, which, in a continuous unitary though highly articulated manner, constitutes for us the continually appearing world of physical things, the regard goes through a remembering noesis in a world of memory; it wonders about in this world, passes over into memories of other degrees or into world of phantasy, and so forth (Husserl, 1998: 223).

4.19 Aesthetic judgment or ‘valuing’, and perceiving are other strata of intenteive mental process, invoking different ‘noemata’ or senses. According to Husserl, judgment or ‘valuing’ is analogous to removing layers of strata in an intenteive mental process:

In that connection, the stratifications, generally speaking, are such that the uppermost strata of the total phenomenon can be removed without the remainder ceasing to be a concretely complete intenteive mental process, and, conversely, a concrete mental process can also take on a new noetic total stratum: as when a non-selfsufficient moment of ‘valuing’ is stratified on a concrete process of simply objectivating or, on the other hand, is removed again.

If, in this manner, a perceiving, a phantasying, judging, or the like, founds a stratum of valuing which overlays it completely, we have different noemata or senses in the stratified whole which is called a concrete mental process of valuing by being designated according to the highest level within it (Husserl, 1998: 231).

4.20 Whilst the ‘noemata’ is in effect, the intenteive mental process that provides unity to consciousness, it is the ‘noesis’ that provides the mental multiplicities that feeds creativity (it also feeds other mental processes such as perception): “The noematic is the field of unities, the noetic is the field of ‘constituting’ multiplicities” (Husserl, 1998: 242). In simplified terms, ‘noemata’ can be considered as the mental framework, and ‘noesis’ as the multiplicities of data. Husserl tries to explain as follows, in describing perception through memories of the Dresden Gallery in the early twentieth century:

Dresden Gallery – ‘rememberingly’ we walk through the Gallery in Dresden. Then we can, again within memory, live in the observation of pictures and find ourselves
in the world of pictures. After this, adverted to the gallery of paintings in picture consciousness of the second level, we look at the paintings themselves; or we reflect hierarchically upon the noeses, etc. The multiplicity of possible directions of the regard essentially to the multiplicities of intentionalities related to and founded in one another; and wherever we find analogous founding relationships – and in what follows we will become acquainted with many different kinds – analogous possibilities of changing reflection are brought out (Husserl, 1998: 248).

To Husserl, such a description is regarded as a scientific exploration: “It need not be said that these relations require scientifically detailed explorations with respect to their essence” (Husserl, 1998: 248).

4.21 When Husserl suggests the analogy to: When the “analogous possibilities of changing reflection” is applied to specific objects, he infers both certainty and doubt, and, the mental shifts between imagination and perception – there is the mental play between what is consciousness and what is real. These are the realms from which creativity is invoked:

For this characteristic can become modified; it can become transformed, perhaps, in the same phenomenon by actual modifications. The mode of ‘certain’ belief can change into the mode of mere deeming possible or deeming likely, or questioning and doubting; and, as the case may be, that which appears (and which, with regard to the first dimension of characterisations is characterised as ‘originary’, ‘reproductive’, and the like has taken on now the being-modalities of ‘possible’, of ‘probable’, of ‘questionable’, of ‘doubtful’ (Husserl, 1998: 250).

4.22 Husserl’s “analogous possibilities of changing reflection” gives rise also to fantasy, which is essential for creativity to emerge. Indeed he calls fantasy a ‘neutrality modification’¹⁸ and it is of ‘universal significance’, inferring that it is an intrinsic ingredient in consciousness, and that it is deceptive:

The deceptive and not really easily untangled circumstance here consists of the facts that phantasy itself is in fact a neutrality modification, that it is of universal significance in spite of the peculiarity of its type, applicable to all mental processes, that it also plays its role in most of the formations pertaining to thinking-of and must, nonetheless, be distinguished in that connection from the universal neutrality modifications with its manifold formations corresponding to all kinds of position (Husserl, 1998: 260).

4.23 Following this, creation then to Husserl is the matter of taking the ‘analogous possibilities of changing reflection’ to a higher plane, above that of ‘phantasy’, to the same plane as hallucination:

One will then see too what is inherent in the essential sort of this hierarchical formation: namely that every phantasy of a higher level can be freely converted into a direct phantasy of what was indirectly phantasied in it, whereas this free possibility does not
take place in going over from phantasy to the corresponding perception. For spontaneity there is the abyss here which the pure Ego can transcend only in the essentially new form of actualising action and creation (where account must also be taken of hallucinating) (Husserl, 1998: 263).

4.24 According to Husserl, all mental acts, including that of creativity, are ‘synthesis of consciousness’, which come with packets of time: phenomenology is time related. It is one of Husserl’s ways of making the process scientific, a way of objectifying what are in effect subjective psychological and emotive processes. He packages the psychological and emotive process under ‘noesis’ – the content, the multiplicities of data. He propositions that it is intention that link the various aspects of mental processes, or noemas (groups of noeses), or synthetic consciousness:

If we now turn our attention.... to the form of synthetic consciousness, then a multiplicity of modes of formations belonging to mental processes by means of intenitive connections make their appearance in our horizon which, as eidetic possibilities, pertain in part to all intenitive mental processes.... A consciousness and a consciousness are not only bound together universally, but are combined into one consciousness the correlate of which is one noema which, on its side, is founded on the noemas of combined noeses.

.... What holds for a particular mental process also holds for the whole stream of mental processes. No matter how alien in essence mental processes can be with respect to one another, they are nonetheless constituted altogether as one temporal stream, as members in the one phenomenological time (Husserl, 1998: 283).

Classification

4.25 Husserl’s classification of mental processes into ‘noemas’ is a precursor of Levi-Strauss’ later totemic classification of myths, which are the combination of object and events (object + event) – a non-linear way toward scientific definition. Levi-Strauss way of objectifying aesthetic works follows the same way toward classification, the same way as Husserl’s attempts to classify mental acts through ‘noemas’. The relations of Husserl’s ‘noemas’ to the aesthetics is alluded in Levi-Strauss’ explanation of the way the ‘bricoleur’ create structures by means and events – Husserl’s structure will be mental rather than material, all apprehended in a single moment in time, as is required in Husserl’s phenomenology. What Levi-Strauss said about scientific classification with regard to the aesthetics was this:

The problem of art has been touched on several times in the foregoing discussion, and it is worth showing briefly how, from this point of view, art lies half-way between scientific knowledge and mythical and magical thought. It is common knowledge that the artist is both something of a scientist and of a ‘brocoleur’. By his craftsmanship he constructs a material object which is also an object of knowledge. We have already distinguished the scientist and the ‘brocoleur’ by the inverse functions which they assign to events and structures as ends and means, the scientist creating events (changing the world) by means of structures and the ‘bricoleur’ creating structures by means and events.
The paintings of the Sistine Chapel are a small-scale model in spite of their imposing dimensions, since the theme which they depict is the End of Time. The same is true of the cosmic symbolism of religious monuments. Further, we may ask whether the aesthetic effect, say, of an equestrian statue which is larger than life derives from its enlargement of a man to the size of a rock or whether it is not rather due to the fact that it restores what is at first from a distance seen as a rock to the proportions of a man. Finally even ‘natural size’ implies a reduction of scale since graphic or plastic transposition always involves giving up certain dimensions of the object: volume in painting, colour, smell, tactile impressions in sculpture and the temporal dimension in both cases since the whole work represented is apprehended at a single moment in time.

What is the virtue of reduction either of scale or in the number of properties? It seems to result from a sort of reversal in the process of understanding. To understand a real object in its totality we always tend to work from its parts (Levi-Strauss, 1966: 22, 23).

In an attempt to grapple with and understand the essence of the creative, musical world in the bohemian setting in Greenwich Village in New York in the early 1960’s, Bob Dylan wrote something similar:

If anything, I wanted to understand things and then be free of them. I needed to learn how to telescope things, ideas. Things were too big to understand all at once, like all the books in the library – everything laying around on all the tables. You might put it all in one paragraph or into one verse of a song if you could get it right (Dylan, 2004: 61).

Levi-Strauss further infers Husserl’s noema when he explains the structure behind the mode of creativity in the aesthetic world, exemplifying with the lace collar in the portrait of Elizabeth of Austria by Francois Clouet. The description could apply to any significant detail of a painting and that the description is dependent upon spatial and temporal context:

For it is true that the relation of priority between the structure and event is exactly the opposite in science and ‘bricolage’, then it is clear that art has an intermediate position from this point of view as well. Even if, as we have shown, the depiction of a lace collar in miniature demands an intimate knowledge of its morphology and technique of manufacture (and had it been a question of people or animals we should have said: of anatomy and physical attitudes), it is not just a diagram or blueprint. It manages to synthesise those intrinsic properties with properties which depend on a spatial and temporal context. The final product is the lace collar exactly as it is but so that at the same time its appearance is affected by the particular perspective. This accentuates some parts and conceals others, whose existence however still influences the rest through the contrast between its whiteness and the colour of the other clothes, the reflection of the pearly neck it encircles and that of the sky on a particular day and at a particular time of day.... The painter is always mid-way between design and anecdote,
and his genius consists in uniting internal and external knowledge, a ‘being’ and a ‘becoming’, in producing with his brush an object which does not exist as such and which he is able to create with his canvas. This is a nicely balanced synthesis of one or more artificial and natural structures and one or more natural and social events. The aesthetic emotion is the result of this union between the structural order and the order of events, which is brought about within a thing created by man and so also in effect by the observer who discovers the possibility of such a union through the work of art (Levi-Strauss, 1966: 25).

**Singular Stratum And Possibilities**

4.28 Unlike Levi-Strauss’ structures which are pinned to tangible objects – to the observable; Husserl’s is purely mental, lined with intentions. Apprehended in a single temporal moment, phenomenological imagination has only one mental position, or one overall stratum which does not depend on mere appearance. Being mental, Husserl’s seek to go deeper than just ‘a coat of varnish, or a piece of clothing covering it over’:

The expressive stratum can have no other qualified posited or neutral position than the stratum subject to the expression, and in the coincidence we find not two positions which are to be separated but only one position.

..... For not too much should be expected of the metaphor stratification; expression is not something like a coat of varnish, or like a piece of clothing covering it over; it is mental formation exercising new intensive functions on the intensive sub-stratum and which, correlative, is subjected to the intensive functions of the <sub-stratum>. What this new metaphor signifies for its part must be studied in the phenomena themselves and in all their essential modifications. Of particular importance is the understanding of the different sorts of ‘universality’ which make their appearance there; on the one side, those which belong to each expression and moment of expression, also to the non-selfsufficient ‘is’, ‘not’, ‘and’, ‘if’, and so forth.... (Husserl, 1998: 297).

4.29 Husserl’s requirement that the expressive stratum is found in one position can be explained by Sacks’ explanation of the problem with a Dr. P (‘The Man Who Mistook His Wife For A Hat’) who was unable to recognise his wife from a hat. Through cerebral ailment, Dr. P’s problem is he sees the expressive stratum in several disparate positions instead of one holistic one, thereby losing the ability of recognition:

Dr. P, on the other hand, functioned precisely as a machine functions. It wasn’t merely that he displayed the same indifference to the visual world as a computer but – even more strikingly – he construed the world as a computer construes it, by means of key features and schematic relationships. The scheme might be identified – in an ‘identiti-kit’ way – without reality being grasped at all (Sacks, 1985: 13,14).

4.30 In plumbing the mental depths beyond metaphorical stratification (which he describes as ‘a coat of varnish’), Husserl seeks ‘pure possibility’. The indication of imagination and possibility is implicit throughout ‘Ideas’ (1913), but it was not until the ‘Cartesian Meditations’ (1929) that he explicitly propositioned its importance. In it he
describes phenomenology as an *a priori* science which concerns itself with the ‘realms of pure possibility, pure imaginableness’. He goes on to say that: “Instead of judging about actualities, phenomenology uses imagination to judge about its *a priori* possibilities and thus at the same time prescribes rules *a priori*” (Husserl, 1960: 28). Husserl speaks of imagination as intuiting the essence of perception by reducing it to a world of as-if, as pre-empted in ‘Ideas’ (see quote in item 4.26 above):

> We shift the actual perception into the realm of non-actualities, the realm of the as-if, which supplies us with ‘pure’ possibilities, pure of everything that restricts to this or that fact whatever. We keep these aforesaid possibilities.... just as completely free ‘imaginableness’ of phantasy. Thus removed from all factualness, we reach the pure eidos of perception whose ideal extension is made up of all ideally possible perceptions, for every fact can be thought of merely as exemplifying a possibility (Husserl, 1960: 70-1).

4.31 Although Husserl’s pursuit of ‘pure possibility’ is eidetic, to Kearney, it is not a solipsistic act, but one that is linked to the external world. Kearney suggests that the possibilities are not fabrications of the consciousness, instead, they are revealed from external sources. Kearney elucidates what Husserl had meant in ‘Cartesian Meditations’ (1960) as follows:

> Husserl tended to speak increasingly of transcendent horizons of possibility which stretch out beyond the given reality and mobilise consciousness as ‘an intending-beyond-itself’.

> But there is obvious ambiguity here as to whether this reaching out beyond the immediate presentness of our experience is a mere projection of the self, or an encounter with something other than the self. If imagination is merely conscious of possibilities fashioned within its own consciousness, we can no longer speak of the object of imagination as a transcendence. And, if this be the case, we find ourselves once again prey to the illusion of immanence. It would seem clear, however, that the originality of Husserl’s theory of imagination lies in his interpretation of images as pure possibilities revealed to consciousness rather than fabricated within it. Husserl thus finds himself back with the old question: If possibility is ‘pure’—that is, emancipated with all ties with reality—then how does its freedom avoid degenerating into arbitrariness? If, on the other hand, possibility is ‘real’, it is no longer arbitrary, but surely at the expense of being pre-determined by an already given world (Kearney, 1998: 30).

4.32 As Husserl’s interest in phenomenological imagination remain Cartesian, at a purely mental level, the external sources that Kearney infers above is incomplete—could the external sources infer the external environment, or is it corporeal, with reference to ‘being’. Modern neurological research however argues that consciousness is inextricably integrated with the human body, and to the state of the brain. Damasio firstly explains the physiological integration between the brain and the body:
The brain and the body are indissociably integrated by mutually targeted biochemical and neural circuits. There are two principal routes of interconnection. The route usually thought of first is made of sensory and motor peripheral nerves which carry signals from every part of the body to the brain, and from the brain to every part of the body. The other route, which comes less easily to mind although it is far older in evolution, is the bloodstream: it carries chemical signals such as hormones, neurotransmitters, and modulators. Even a simplified summary reveals the intricacy of the relationships... (Damasio, 1994: 87).

4.33 Damasio later explains that the mind, or consciousness has a neurological basis, which is integral with the rest of the human body:

My view then is that having a mind means that an organism forms neural representations which can become images, be manipulated in a process called thought, and eventually influence behaviour by helping predict the future, plan accordingly, and choose the next action. Herein lies the centre of neurobiology as I see it: the process whereby neural representations, which consist of biological modifications created by learning in a neuron circuit, become images in our minds; the process that allows for invisible microstructural changes in neuron circuits (in cell bodies, dendrites and axons, and synapses) to become neural representation, which in turn becomes an image we each experience as belonging to us (Damasio, 1994: 90).

4.34 Damasio also argues that the external environment influences the brain, through the body:

If body and brain interact with each other intensely, the organism they form interact with its surrounding no less so. Their relations are mediated by the organism’s movement and its sensory devices.

The environment makes its mark on the organism in a variety of ways. One is by stimulating neural activity in the eye (inside which is the retina), the ear (inside which is the cochlea, a sound-sensing device, and the vestibule, a balance-sensing device), and the myriad of nerve terminals in the skin, taste buds and nasal mucosa. Nerve terminals send signals to circumscribed entry points in the brain, the so-called early sensory cortices of vision, hearing, somatic sensations, taste and olfaction. Picture them as a sort of safe harbour were signals can arrive. Each sensory region (early visual cortices, early auditory cortices, and so forth) is a collection of several areas, and there is heavy cross-signalling among the aggregate of areas in each sensory collection (Damasio, 1994: 90, 91).

4.35 Although the mind and the body is inseparable in function as Damasio advocates, this still does not complete the medical explanation for consciousness. There is still an aspect of the phenomenon, which Sacks attempts to explain, albeit not completely:
As soon as we attend to phenomena as such, to the actual quality of experience or thought or action, we have to use the terms more reminiscent of a poem or painting. How, say, is a dream intelligible in terms of function?

We have always two universes of discourse – call them ‘physical’ and ‘phenomenal’, or what you will – one dealing with the questions of quantitative and formal structure, the other with those qualities that constitute a ‘world’. All of us have our own, distinctive mental worlds, our own mental journeyings and landscapes and these, for most of us, require no clear neurological ‘correlate’. We can usually tell a man’s story, relate passages and scenes from his life, without bringing in any physiological or neurological considerations: such considerations would seem, at the least, supererogatory, if not frankly absurd or insulting. For we consider ourselves, and rightly, ‘free’ – at least, determined by the most complex human and ethical considerations, rather than by our neural functions or nervous systems (Sacks, 1985: 121).

4.36 The phenomenological ‘world’ that Sacks seeks, which is not a mental one, nor one that is purely physical to explain the encounters with his patients, is one that is offered by Merleau-Ponty in the description of perception. Merleau-Ponty also bridges Damasio description of knowing the world through the human senses with Husserl’s quest for eidetic possibilities. Husserl’s possibilities, to Merleau-Ponty is based on the real:

The self-evidence of perception is not adequate thought or apodeictic self-evidence. The world is not what I think, but what I live through. I am open to the world, I have no doubt that I am in communication with it, but I do not possess it; it is inexhaustible. ‘There is a world’, or rather: ‘There is the world’; I can never completely account for this ever-reiterated assertion in my life. This facticity of the world is what constitutes the ‘Weltlichkeit der Welt’, what causes the world to be the world; just as the facticity of the cogito is not an imperfection in itself, but rather what assures me of my existence. The eidetic method is the method of a phenomenological positivism which bases the possible on the real (Merleau-Ponty, 1962: xvii).

4.37 Meanwhile, reality is the external world, the nature of which that affect our senses ‘remains unchanged’, whatever the consequences of our thought or perception:

We started of from a world in itself which acted upon our eyes so as to cause us to see it, and we now have consciousness of or thought about the world, but the nature of the world remains unchanged: it is still defined by the absolute mutual exteriority of its parts, and is merely duplicated throughout its extent by a thought which sustains it (Merleau-Ponty, 1962: 39).

**Phenomenological Space**

4.38 The nature of the external world can be made by human hands to become something that is spatially designed that affect our senses. To Merleau-Ponty, it is the sensory realms that enable us to perceive the world that is there before us. The concert
hall, when filled with people is naturally seen to be cramped, however music is still felt to flow unrestricted but the perception of this may differ between the percipients as what is perceived between individual percipients is not known:

When, in the concert hall, I open my eyes, visible space seems to me cramped compared to that other space through which, a moment ago, the music was being unfolded, and even if I keep my eyes open while the piece is being played, I have the impression that the music is not really contained within this circumscribed and unimpressive space. It brings a new dimension stealing through visible space, and in this it surges forward, just as, in victims of hallucinations, the clear space of things perceived is mysteriously duplicated by a ‘dark space’ in which other presences are possible. Like the perspective of other people making its impact on the world for me, the spatial realm of each sense is an unknowable absolute for the others, and to that extent limits their spatiality.... the unity of space can be discovered only in the interplay of the sensory realms (Merleau-Ponty, 1962: 222).

4.39 With reference to Husserl’s suggestion that phenomenological imagination has only one position, found in one singular stratum, that it does not depend on mere appearance or upon ‘a coat of varnish, or a piece of clothing covering it over’ (see item, 4.26). Merleau-Ponty further suggests an element of memory for the synthesis to work, wherein it infiltrates the world in its entirety, and calls this synthesis ‘transition-synthesis’:

We can no more construct perception of the thing and of the world from discreet aspects, than we can make up the binocular vision of an object from two monocular images. My experiences of the world are integrated into a single world as the double image merges into one thing, when my finger stops pressing upon my eyeball. I do not have one perspective, then another, and between them a link brought about by the understanding, but each perspective merges into the other and, in so far it is still possible to speak of a synthesis, we are concerned with a ‘transition-synthesis’. It is particularly true that my present vision is not restricted to what my visual field actually presents to me, for the next room, the landscape behind that hill and the inside or the back of that object are not recalled or represented. My point of view is not for me so much a limitation of my experience as a way I have of infiltrating the world in its entirety (Merleau-Ponty, 1962: 329).

4.40 The manner in which Hicks speaks about the way the mind organises and synthesises the information flow through and around the percipient echoes Merleau-Ponty’s ‘transition-synthesis’. Hicks is equally dependent on sensation, and is more forthright in the suggestion that perception is memory-dependent in the way that awareness is “.... guided by the memory deposits of our previous experience of moving about in a three-dimensional world:

The senses having thus registered their minute selection of the mass of information flowing through and around us all the time, the mind then processes it, organising it into our familiar environment. For example, we see three-dimensionally,
although the light waves falling upon the eye only directly affect the (almost) flat surface of the retina. But the mind/brain immediately converts this information into one familiar three-dimensional experience by a complex set of calculations based on a variety of clues, including the images they receive based on a variety of clues, including the disparity between the images they receive, the angle of convergence of he two eyes, which are converted to an awareness of depth, and at greater distances by the position of images in the visual field (the higher the more distant). Although this is normally done habitually and unconsciously, our ability to see depth and judge distances is an acquired skill made possible by the correlating touch with movement in space. Again, in recognising a building, we see it as three-dimensional, with depth and a back as well as the flat side actually visible to us. We are extrapolating in this way all the time, guided by the memory-deposits of our previous experience of moving about in a three-dimensional world (Hick, 2004: 40).

4.41 Husserl’s ‘one position, found in a singular stratum’, beyond ‘a coat of varnish’ is manifested in architectural phenomenology. Holl suggests that in the design process, all the apparent layers are merged together:

This overlap of foreground, middle ground, and distant view is a critical issue in the creation of architectural space. We must consider space, light, colour, geometry, detail, and material as an experiential continuum. Though we can disassemble these elements and study them individually during the design process, they merge in the final condition, and ultimately we cannot readily break perception into simple collection of geometries, activities, and sensations (Holl, et. al., 1994: 45).

Space And Context

4.42 To Merleau-Ponty, man’s position in an integrated natural world applies also to his contextual position in the social world and his existence as ‘structures of history’. He regards his relationship with the social world as deeper than to that of the natural world, and that this relationship is a permanent one:

We must therefore discover, after the natural world, the social world, not as an object or sum of objects, but as a permanent field or dimension of existence: I may well turn away from it, but not cease to be situated relative to it. Our relationship to the social is, like our relationship to the world, deeper than any express perception or any judgment. It is as false to place ourselves in society as an object among other objects, as it is to place society within ourselves as an object of thought, and in both cases the mistake lies in treating the social as an object. We must return to the social with which we are in contact with the mere fact of existing, and which we carry about inseparably with us before any objectification. Objective and scientific consciousness of the past and of civilisations would be impossible had I not, through the intermediary of my society, my cultural world and their horizons, at least a possible communication with them, and if the place of the Athenian Republic or the Roman Empire were not somewhere marked out on the borders of my own history, and if they were not there as so many individuals be known, indeterminate but pre-existing, and if I did not find my own life the basic
structures of history. The social is already there when we come to know and judge it (Merleau-Ponty, 1962: 362).

4.43 In the above sense, Merleau-Ponty is similar to the later Wittgenstein (as elucidated in Philosophical Investigations, 1953). Meanings, to Merleau-Ponty, including that of language, is understood within a social context:

I begin to understand the meaning of words through their place in a context of action, and by taking part in a communal life (Merleau-Ponty, 1962: 179).

4.44 On the description of space, Merleau-Ponty introduces space as an entity which has two properties:
- It has a physical presence, which he calls ‘spatialised…. space’ (Merleau-Ponty, 1962: 244);
- It can be geometrical (geometrical space), which he calls ‘spatialising space’ (Merleau-Ponty, 1962: 244).

On physical space, Merleau-Ponty characterises spatial things and the spatial relationships between them as they are presented to percipient during the ordinary course of experience: it is not the unity or uniqueness of space that is perceptually presented; but the multiplicity (p. 282) of the spatial items:

My body and things, their concrete relationships expressed as such terms as top and bottom, right and left, near and far, may appear to me as an irreducibly manifold variety (Merleau-Ponty, 1962: 103).

4.45 ‘Geometrical space’ to Merleau-Ponty, is space of thought, compared with physical space, which is space as directly experienced. He suggests that geometrical space has, “interchangeable dimensions: homogeneous and isotropic” (Merleau-Ponty, 1962: 244), which are not properties possessed by physical space. The following is possible in geometric space:

A pure change of place which could leave the moving body unchanged, and consequently a pure position distinct from the situation of the object in its concrete context (Merleau-Ponty, 1962: 244).

4.46 In other words, geometrical space is malleable in thought while the percipient and the context remains unchanged. Priest interpret Merleau-Ponty’s ‘pure position’ above as follows:

Pure positions are pure in the sense that their being, and their being in the positions that they are, do not depend upon their being occupied, nor upon there being occupants. A situation, on the other hand, is necessarily actually or possibly occupied. Situations are individuated only via actual or possible occupants. Positions are individuated via each other. Physical space contains situations but no positions but geometrical space contains positions but no situations (Priest, 1998: 104).
Body And Sensory Fields

4.47 From the Merleau-Ponty’s perspective, the perception of space is subject-dependent, in the way that perception will differ between individual percipients: “It is easy to show that there can be direction only for a subject who takes it” (Merleau-Ponty, 1962: 107), and that the subject is influenced by a ‘mass of sensory fields’: “We are not among things” (Merleau-Ponty, 1962: 246-7) and, “We have as yet only sensory fields” (Merleau-Ponty, 1962: 247). This suggests that we are not directly presented with spatial relations as they actually are, but rather with a ‘mass of sensations’ (Merleau-Ponty, 1962: 245), which we spatially order according to pragmatic or subjective criteria:

One cannot take the world and orientated space as given along with the contents of mere experience or with the body in itself, since experience in fact shows that the same contents can be successively orientated in one direction or another (Merleau-Ponty, 1962: 105).

4.48 What the above amounts to is the proposition that the body plays an essential role in the constitution of space as it appears to the percipient, and the proposition that there is more than one space in perception. This is even more so in aesthetic perception. Merleau-Ponty uses painting and dance to illustrate this; but it could equally apply to architecture:

One might show.... that aesthetic perception too opens up a new spatiality, that the picture as a work of art is not in the space which it inhabits as a physical thing and as a coloured canvas. That the dance evolves in an aimless and unorientated space (Merleau-Ponty, 1962: 114).

Hence, from the Merleau-Ponty’s perspective, architecture is produced by the architect qua body-subject, not qua physical objects. In the body-subject there is a mutual dependence between vision and presence which architecture reveals and depends upon.

4.49 In the constitution of architectural space, the sensations of the body is allied with intention: the process is both physical as well as mental. Following Bretano, Holl calls it ‘outer perception’ and, ‘inner perception’:

According to Bretano, physical phenomena engage our ‘outer perception’, while mental phenomena involve our ‘inner perception’. Mental phenomena have real, as well as intentional, existence. Empirically we might be satisfied with a structure as purely physical-spatial entity but, intellectually and spiritually, we need to understand the motivations behind it. The duality of intention and phenomena is like the interplay between objective and subjective, or, more simply, thought and feeling. The challenge of architecture is to stimulate both inner and outer perception; to heighten phenomenal experience while simultaneously expressing meaning; and to develop this duality in response to the particularities of site and circumstance (Holl, et. al., 1994: 42).
Thus from the viewpoint of phenomenological imagination, architecture synthesises all the layers into a singular stratum. Physically, it synthesises the foreground, middle ground and distant view (ref. Holl, et. al., 1994: 45), and the complete perception includes the subjective qualities of material and light to form the basis of complete perception (ref. Holl, et. al. 1994: 45). It is the fusion of the subjective and the objective. Intention provides the conceptual logic which drives the design and that the phenomenon is expressed in inter-subjective link.

House X1
Light And Shadow

4.50 Since Le Corbusier’s statement, “Architecture being the masterly, correct and magnificent play of masses brought together in light…”, architects have occasionally propounded the entire hypotheses of their work around the properties of light, in the similar way that painters occasional build their works around the properties of colours. However, solids and voids in architectural composition, coupled with materials that lend themselves to various degrees of opacity, transparency and translucency do enable light to provide architectural experience with various degrees of intensities. At the fundamental level, architecture cannot be appreciated without light, and at the ethereal level, movement of light to a building provide various intensities of emotive feelings to the percipient.

4.51 In the absence of a clock, time is measured by the intensity of sunlight and the length of the shadows, both of which gives time duration and the perception of it. In this sense, time is measured in the memory instead of mechanically. For a moment that the percipient looks up as the beam of clustered light pours through a large window, the perception modifies the consciousness as the awareness of time is intensified by the memory of the length of shadows in relation with the time of day. An architectural form is also appreciated by the way light and shadow brings out the shape of three-dimensional forms. The following statement on House X1 to appear in ‘Home’ published by Millennium House Pty Ltd in 2006:

The architect believes that architecture should be a work of art. The canvas consists of the materials used, the backdrop is the surrounding landscape. The quality of light is a major criterion upon which art is judged—and so it is with architecture. Light can also accentuate the natural qualities of solids, voids, and other textural spaces. Where light is soft and gentle, then space takes over; where light is weak, space takes on a dream-like ambience (Millennium House, 2006).

Sound

4.52 The resonance of live sound upon the walls and floor in a space creates an awareness of the presence of the space – the depth of the space, the geometry and the materials of the space. The resonant, backdrop sound of traffic for example, make us aware of the urbanity our habitat, or, conversely in silence, the emergence of water drops in darkness can sound extremely loud with the ear carving a large volume into the void of darkness.
If the surface is dampened with soft materials, the experiential dimension would be lost – say, if the walls had been covered with plants and the floor, carpeted. A sequence of sound of moving water can have a mesmerising effect upon the psyche – when the sound of water is heard in a continuous flow it soothes the human psyche. One of the endearing components of House X1 is the small water fountain in the entrance courtyard.

Hapticity

The haptic realm in architecture is presented as the sense of touch, particularly with materiality. This become evident as part of the detail make-up of a space, and when the detail unfolds when light washes its surface. House X1 is conscious of the way that details would emerge as rays of sunlight hits the surfaces of the house. Generally, the internal walls of the house is unplastered – the internal spaces are enlivened when rays of light hit the surfaces.

Appreciation of architecture is essentially visual: hapticity in architecture is presented to the eye. Through memory of other sensations, the eye can sense touch and even scent. Merleau-Ponty describes this as follows:

Cézanne declared that a picture contains within itself even the smell of the landscape. He means that the arrangement of colour on the thing (and in the work of art, if it catches the thing in its entirety) signifies by itself all the responses which could be elicited through an examination of the remaining senses; that a thing would not have this colour had it not also shape, these tactile properties, this resonance, this odour, and that the thing is the absolute fullness, which my undivided existence projects before itself (Merleau-Ponty, 1962: 318-9).

Intention And Site Circumstance

From the phenomenological viewpoint, architecture differs with every site and circumstance. As no context is the same, neither can a work of architecture be repeated without modification in another context. The architect’s intention for House X1 is published by Millennium House as follows:

The architect wanted to keep the house as close to the slope as possible. To achieve this, a central courtyard breaks the house into two distinct parts. The courtyard space, conceived as a cubic void, is the link with all parts of the house. There is a visual link between the top and bottom of the slope, and there is a spatial link which allows the passage of air from the bottom to the top of the house. This breezeway is emphasized by the formation of a wind shaft, terminating at the rooftop.

Lyricism in architecture is achieved when space, form, and materials react favourably with the light. The architect considered this configuration in the design of House X1. He feels that successful architecture is when the climatic conditions are also taken into account.
In addition, the natural landscape has an important part to play in the lyricism of architecture—in fact, it should be considered as an integral part of the whole project. In House XI, the interior and the landscape blend with one another, the walls becoming a transparent skin, which diminishes the visual barrier between outside and inside spaces.

The architect believes that architecture should be a work of art. The canvas consists of the materials used; the backdrop is the surrounding landscape. The quality of light is a major criterion upon which art is judged—and so it is with architecture. Light can also accentuate the natural qualities of solids, voids, and other textural spaces. Where light is soft and gentle, then space takes over; where light is weak, space takes on a dream-like ambience (Millennium House, 2006).
FIVE: COMPUTATIONAL IMAGINATION (PROTAGONIST)

Literature Review E:
Boden, The Creative Mind, Myths And Mechanisms, 2004
Supporting Literature:
Koestler, The Act Of Creation, 1964
Ackerman, Palladio, 1966
Secrest, Frank Lloyd Wright – A Biography, 1992
Budd, Values Of Art, 1995
McCarter, Frank Lloyd Wright, 1997
Pinker, How The Mind Works, 1998

Preamble

5.01 In phenomenological imagination above, it is inferred that consciousness is possible only in a single stratum position (4.28), in that creativity cannot be achieved through the combination of various parts put together: Medical evidence suggests that forms cannot be perceived by stringing analysis of various sensations together (4.29). Merleau-Ponty propositions that perception is possible through ‘transition-synthesis’, the synthesis of mind, sensation, memory and external conditions that infiltrate the entire phenomenological world (4.39). Medical evidence also seems to suggest that, as the brain and body is neurologically linked (4.32-3), the state of consciousness is hence dependent on the condition of the body (4.35, and by extension, linked to external contexts (4.36-7). However, the structure of consciousness seems to defy scientific explanation. Although Husserl and Merleau-Ponty intended their works as scientific explanations of phenomenology, their findings however seems instead to underpin consciousness as a non-ostensive and subjective human attribute.

5.02 Husserl’s and Merleau-Ponty’s phenomenological imagination leaves no room for incremental creativity in the way that creativity could be managed, as creativity in phenomenological imagination is a mystical process: Creativity is enmeshed in ‘transition-synthesis’ which infiltrates the entire phenomenological world all at once. In contemporary times, Boden sets out to demystify this world, and to find one that could make creativity assessable to ‘everyman’ (ref. Boden, 2004: 256-76). She first propositions that thought can be structured into conceptual spaces and these spaces can be transformed, say into realms of creativity. The idea is that every person has at least a germ of conceptual spaces that could be expanded (ref. Boden, 2004: 4): In other words, creativity can be managed.

Conceptual Spaces

5.03 Boden’s conceptual spaces are structured styles of thought which are already imprinted in individuals’ minds, the style being shaped by culture or peer group, or occasionally borrowed from other cultures (ref. Boden, 2004: 4). According to Boden:
They include ways of writing prose or poetry; styles of sculpture, painting or music; theories in chemistry or biology; fashions in couture or choreography, nouvelle cuisine and good old meat and two veg – in short, any discipline way of thinking that is familiar to (and valued by) a certain social group (Boden, 2004:4).

5.04 Boden’s proposition is that the conceptual mental spaces are transformed into creative thinking in everyday events:

In exploratory creativity, the ‘countryside’ is a style of thinking. Instead of exploring a structured geographic space, you explore a structured conceptual space, mapped by a particular style of painting, perhaps, or a specific area of theoretical chemistry.

All professional artists and scientists do this sort of thing. Even the most mundane street artists in Leicester Square produce new portraits, or new caricatures every day. They are exploring their space, though not necessarily in an adventurous way.... They add a new trick to their repertoire, but in a real sense it’s something that ‘fits’ their established style: the potential has always been there (Boden, 2004: 5).

AI Concepts

5.05 Boden then uses artificial intelligence (AI) concepts to find the structure for conceptual spaces. It is thought that a computational approach gives a way of coming up with scientific hypotheses about the rich subtleties of the human mind. For instance, regarding Frank Lloyd Wright’s Prairie Houses, Boden thought that:

The structure of harmony, or the ‘grammar’ of Prairie Houses, can be clearly expressed, and specific ways of exploring the space can be tried out. Methods for navigating, and changing, highly structured spaces can be compared (Boden 2004: 7).

5.06 The assumption about the usefulness of AI in the pursuit of structure of conceptual spaces, specifically in creativity is due to the assumption that creativity is an intelligence:

The combining of ideas creatively is not like shaking marbles in a bag. The marbles have come together because there is some intelligible, though previously unnoticed, link between them which we value because it is interesting – illuminating, thought-provoking, humorous – in some way. We saw also that combinational creativity typically requires a very rich store of knowledge, of many different kinds, and the ability to form links of many different types (Boden, 2004: 8).

Hindrances Over AI Creativity

5.07 The hindrance over AI creativity according to Boden, is ‘value’, which is highly variable:
Because creativity by definition involves not only novelty but value, and because values are highly variable, it follows that many arguments about creativity are rooted in disagreements about value. This applies to human activities no less than to computer performance. So even if we could identify and program our aesthetic values so as to enable the computer to inform and monitor its own activities accordingly there would still be disagreement about whether the computer even appeared to be creative (Boden, 2004: 10).

5.08 Budd elaborates on the variable values of art as follows:

So a work of art can have many different kinds of value – a cognitive value, a social value, an educational value, a historical value, a sentimental value, a religious value, an economic value, a therapeutic value; it can possess as many kinds of value as there are points of view from which it can be evaluated. My claim is that the value of a work of art as a work of art is intrinsic to the work in the sense that it is (determined by) the intrinsic value of the experience the work offers (so that if it offers more than one experience, it has more than one artistic value composed of these different artistic values) (Budd, 1995: 1, 4).

5.09 The other problems Boden sees about creativity are:
1) The social recognition of things that are novel. Particularly when novelty is outside of prevailing paradigm (p. 13);
2) The inspirational view of creativity in that it is a mysterious, ‘even superhuman or divine’. She regards this as misunderstood and quotes Bernard Levin’s column in The Times, who, “explicitly drew the conclusion that Mozart (like other great artists) was, literally, divine inspired” (p.14);
3) The romantic view of creativity, less extreme than the inspirational view, nevertheless claims that creativity is at least an exceptional gift: “Creative artists (and scientists) are said to be people gifted with a specific talent which others lack: insight or intuition (p. 14).

5.10 The romantic view is probably the most prevailing attitude toward the assumed structure of creativity. Koestler, for example sees creativity as a reflex, like a sudden insight, just as laughter is a sudden response to a joke (ref. Koestler, 1964: 28). With one foot on the mysterious connection of ‘previously unrelated dimensions of experience’ and another on rational description, Koestler propositions that:

The creative act, by connecting previously unrelated dimensions of experience, enables him to attain to a higher level of mental evolution. It is an act of liberation – the defeat of habit by originality....

The moment of truth, the sudden emergence of new insight, is an act of intuition. Such intuitions give the appearance of miraculous flashes, or short-circuits of reasoning. In fact they may be likened to an immersed chain, of which only the beginning and the end are visible above the surface of consciousness. The diver vanishes at one end of the chain and comes up at the other end, guided by invisible links (Koestler, 1964: 96, 211).
5.11 Koestler’s reflex creativity has its basis in the ‘bisociation’ of two disparate conceptual matrices, wherein it is the “basic bisociative pattern of the creative synthesis: the sudden interlocking of two previously unrelated skills, or matrices of thought” (Koestler, 1964: 121). Hence, the more unusual the bisociation, the more scope there is for innovative ideas to emerge. He will not agree with Boden’s computational explanation of creativity, which he would regard as ‘mechanistic’. However, Koestler does not explain how creativity is possible, and how the bisociation of matrices actually work, which is the quest of Boden.

**Beyond Intuition**

5.12 Boden seeks to explain creativity beyond the idea of ‘insight’ and ‘intuition’ as typified by Koestler’s description. For example, she is interested in ‘how intuition works’ and, ‘how is it possible for people to think new thoughts’ (ref. Boden, 2004: 15). This is opposite to the arguments offered by the antagonists in Section 4 above (Phenomenological imagination). Boden’s starting premise is that: “We are all creative to some degree – and what we can do, Mozart could do better” (Boden 2004: 24). What makes the difference between an outstandingly creative person and a less creative one is:

> .... not any special power, but greater knowledge (in the form of practised expertise) and the motivation to acquire and use it. This motivation endures for long periods, perhaps shaping and inspiring a whole lifetime (Boden, 2004: 35).

5.13 Further to this Boden follows Poincare and Hadamard’s suggestion that creativity requires the hidden combination of unconscious ideas, with four phases of creativity: “Preparation, incubation, illumination, and verification” (Boden, 2004: 29). She points out that:

> ‘Complete’ illumination.... is comparatively rare. Composers usually make corrections to their manuscripts scores, and art historians (using increasingly sophisticated scientific techniques) constantly discover the rejected first thoughts of the artist, hidden under the visible layers of paint. Sometimes corrections must be minimised (if a mural has to be painted before the plaster dries), and sometimes they are impossible (when a jazz-musician improvises a melody to fit a given cord sequence). Even so, the artist evaluates the production, so as to do better next time.

In short, Poincare’s four-phase theory allows that the arts and the sciences achieve their innovations in broadly comparable ways (Boden, 2004: 31).

**P-creativity And H-creativity**

5.14 Boden suggests that context supports either psychological creativity or, historical creativity. If the sense of creativity is psychological, she calls it *P-creative*; if it is historical, she calls it *H-creative*. Both are intended to define creative ideas created by people:
The psychological sense concerns ideas (whether in science, needle work, music, painting, literature, etc.) that are surprising, or perhaps even fundamentally novel, with respect to the individual mind which had the idea. The historical sense applies to ideas that are novel with respect to the whole of human history. But whichever type of creativity is involved, it’s historically creative only if no one has had that thought before.

Similarly, people can be credited with creativity in two senses. Someone who is P-creative has a (more or less sustained) capacity to produce P-creative ideas. An H-creative person is someone who has come up with one or more H-creative ideas (Boden, 2004: 43).

Although H-creativity is usually associated with historical significant innovations, P-creativity is the aspect that is more important as it is more frequent. The initial creative idea is usually P-creative and is often filed away in the brain, and it need not be unusual. It could be a novelty for the person generating it, but not necessarily for anyone else. Boden further suggests that every human infant is creative, “For children’s minds develop not just by learning new facts, and not just by playfully combining them in novel ways, but also by coming to have ideas which they simply could not have had before” (Boden, 2004: 48). Taking musical innovation for example, Boden observes that someone like Schoenberg, despite being recognised as a ‘destroyer’ of tonality, took tonality more seriously than did any of his avant-garde contemporaries.

That is, he saw that the conventions were about modulations, approved cadences, repetitive themes, and concluding consonance were not arbitrary aspects of tonality. Given the fundamental tonal concept of a home key, they were intelligible, mutually coherent, constraints. Being defined at less fundamental levels than the home key, they could more easily transformed, or even dropped. Nevertheless, they were all part of one coherent generative system (Boden, 2004: 73).

Boden suggests that Schoenberg’s musical innovation is not arrived at from nothing; it is instead built upon a steady steam of minor innovations and knowledge:

There must have been previous composers, determined to push modulation to its limits (although these need not have been Brahms, Chopin, Debussy and Scriabin). Before them, there must have been trail-blazers mapping the structural skeleton of tonal music (as Bach was doing in his ‘Forty-Eight’). And before them, someone must have taken the first exploratory steps in using what is recognisably a scale (or proto-scale), even if it is not yet clearly defined in contrast with the preceding style (the ‘modes’ of mediaeval music) (Boden, 2004: 73).

**Computational Creativity**

The kind of creativity that Boden suggests is regarded by her as ‘computational’ in the sense that it is arrived at within a generative system; otherwise the creativity is not recognised:
If, by some miracle, a composer has written atonal music in the sixteenth century, it would not have been recognised as creative. To be appreciated as creative, a work of art or a scientific theory has to be understood in a specific relation to what preceded it. An impossibilist creative idea is one which surprises us because it could not have happened before. This is a computational ‘could’, to be interpreted in relation to a particular way of thinking, or generative system.

Only someone who understood tonality could realise just what Schoenberg was doing in rejecting it, and why (Boden, 2004: 74).

5.18 Despite the generative nature in which Schoenberg’s music had evolved, it was still a shift from existing paradigm, and his music was hard to accept during his time:

Like many creative artists, Schoenberg was not universally appreciated even by his peers, many of whom reviled his music as a cacophony.

To some extent, such reluctance to accept new artistic ideas springs from a temperamental and/or socially comfortable unadventurousness. But is due also to the difficulty (at least for the adult minds) of making truly fundamental conceptual shifts (Boden, 2004: 74).

5.19 To Schoenberg then, his musical innovation was equivalent to P-creativity, being arrived at through knowledge in depth on tonality and the innovation he made was natural to him, but it did not find universal acceptance – as it was considered to be cacophonous. When his music was eventually accepted as innovative, it fell into H-creativity. Boden suggests the change of mental geography that result in its acceptance:

An H-creative idea sometimes involve such radical change in mental geography, requiring such a different sort of map to represent the new range of computational possibilities, that many people minds cannot immediately accommodate it. And artists, of course, cannot bludgeon their critics with independently verifiable facts. They can only seek to persuade them that the mental exploration is intelligible, and therefore – like climbing of Everest – justified for its own sake (Boden, 2004: 74-5).

5.20 Boden then attempts to chart the mental geography or mental map, in a way that a landscape can be described. By considering the mental map as ‘structured space of computational possibilities’, Boden could then correlate it with the Heuristics. She considers the Heuristics as:

.... ways of selectively – insightfully – moving through the space and/or of transforming it, sometimes by changing other heuristics. ‘Protecting your queen’ directs you into some chess-paths and away from others. And ‘consider the negative’, if applied at a relatively deep level of the generative system, can transform the space so fundamentally that very different sorts of location are created and many previous locations, indeed whole regions, simply cease to exist (Boden, 2004: 89).
5.21 The analogy of the chess game infers rules, which makes mental mapping possible, where each move involves a specific action defined by the rules of chess. Within the rules, intuition provides possibilities. Chess masters for example, move intuitively by perceiving familiar board patterns, with the potential of each piece embedded in memory. While playing within the rules, Boden suggests that the human thought-processes, and the mental spaces they inhabit are largely hidden from the thinkers themselves (ref. Boden, 2004: 90).

5.22 Boden further suggests that the sort of thinking that involves well-structured constraints, such as that of the chess game, can be better understood by comparing it with problem-solving computer programs whose conceptual spaces can be precisely mapped, and the same could apply to imprecise thinking, such as poetic imagery, or the intuition recognition of chess-patterns. Boden propositions that artificial intelligence (AI) can help us think more clearly about the conceptual spaces of various kinds (ref. Boden, 2004: 90). When abnormal P-creative thinking is required; the frozen heuristic becomes an obstruction, which has to be removed: this would put previously inaccessible parts of the search-space back into the mental map. A problem-solving system, whether it is an AI program or person, may possess higher order heuristics with which lower-level heuristics can be transformed, for example when the queen is sacrificed in the chess game to be replaced with higher order heuristics (ref. Boden, 2004: 93).

Generative Systems

5.23 What is inferred in computational imagination is thus the presence of rules, which is required for mental mapping. Boden observes that many generative systems possesses a hierarchical structure, with some rules being more basic than others, and uses the analogy of a tree to illustrate what is meant:

Represented as a search-tree, the basic choice-points occur at the origins of the thickest branches, while the more superficial choices give rise to the twigs. To chop off one branch (to drop a fundamental constraint) is to lose all the twigs sprouting from it – which may be a significant proportion of the whole tree (Boden, 2004: 94).

5.24 Innovation requires a deeper change in the generative system, however, the deeper the change, the more different – and less immediately intelligible – is the corresponding conceptual space: Hence the initial difficulty in accepting Schoenberg’s music. What Schoenberg had done was to abandon the prevailing constraints of tonality and successively introduced others – using every note of the chromatic scale, for instance. Boden elaborates on the implications:

Whether his added constraints are aesthetically pleasing, as opposed to being merely ingeniously productive is another question. Some people would argue that they are not, because they are arbitrary with respect to the natural properties of auditory perception. (Impressionism, for instance, exploits deep properties of vision, despite the Impressionists’ concern with the science of optics, their work is therefore less ‘intellectual’ than Schoenberg’s music). In short, to drop all current constraints and
refrain from providing new ones is to invite not creativity, but confusion (Boden, 2004: 95).

5.25 Boden infers that it is the partial continuity of constraints that enables an innovative idea to be both recognised by both author and audience: The new conceptual space provides a novel way of viewing the domain and signpost new ideas not apparently visible nor seem possible before. Taking Schoenberg’s case again, Bowden states:

But until the final break into a fully chromatic search-space, the persistent musical conventions – about the return to a home-key, or preferred modulations or cadences – provide the listener with familiar bearings with which to navigate the unfamiliar territory. Even the flight into atonality can be understood as the final step in a progressive structural modification of tonal space, as we have seen (Boden, 2004: 96).

5.26 In putting it this way, the innovative idea thus seem neither random nor perverse, but arose during the process of consciously exploring the relevant conceptual space in an intelligible way. In other words, creativity is evaluative and exploratory. The appreciation of the innovative idea is based on shared constraints and recognising them, and seen as a new solution, probably to a new problem, connected to a previous one. This is also why new ideas are normally resisted and usually appreciated only by a few: in the case of architecture, it normally is the critics who first appreciate the innovation.

5.27 From here, Boden propositions that anyone seeking to understand the above process needs to be able to describe the structures and processes clearly and assess their generative potential rigorously, and she suggests that AI terms can do this. For, according to Boden:

AI-concepts must be unambiguously defined, if they are to be embodied in a computer program. Moreover, any result obtained when actually running a program must lie within the potential of the program concerned (Boden, 2004: 97).

That is, just like the essential continuation of constraints, a computer can only do what its program and data enable it to do.

Scripts, Frames And Nets

5.28 According to Boden, what a computer is able to do, is to provide systematic theory explaining: “how, and why, different sorts of representation are appropriate to different classes of problem” (Boden, 2004: 107), although no such theory exists yet. Proponents of AI have studied representation leading to problem solving, and on these representations, Boden theorises:

Various methods of representing knowledge have been used in computer programs, including ‘scripts’, ‘frames’, and ‘semantic nets’ – sometimes called ‘associative nets’. In addition, some theoretical AI-research has tried to distinguish general types of representation; an example is ‘analogical’ representation (Boden, 2004: 1-07).
5.29 In AI, semantic nets are: “computational structures representing (in a highly simplified way) the field of meaning within a certain part of conceptual space… It’s those association which are the basis for combinational creativity. A semantic consists of nodes and links. The nodes stand for specific ideas, while the links – whereby one idea can be accessed from another – represent various types of mental connections” (Boden, 2004: 107). Semantic nets depict human memory as an associative system wherein each idea can lead to many other relevant (and irrelevant) ideas linked to the first by phonetic similarity or even by mere coincidence. For example, the colour red in architecture is linked to fire escape signs and danger.

5.30 In AI processes, scripts and frames are thought of as special cases of semantic nets. They represent the conceptual skeleton of a familiar idea, such as in architecture, the familiar ways of doing initial sketches, or the familiar steps taken in running projects. However, like in semantic nets in general, they can be modified: The initial sketches could instead be done in pencil instead of in pen and new programs could be used in running a project.

Scripts is particularly concerned about recognised ways of behaving, such as expected in a computer program. In architecture, it could for example, also be the familiar design methodology commonly used by the architect. Frames on the other hand represent single concept or idea. To invoke innovation, both can be modified.

5.31 For an innovative idea to be accepted, the architect relies heavily on the scripts in the minds of the audience. To accept even a basic innovative idea, there are many mental gaps that need to be filled as the project is presented explicitly. Reciprocally, without script-based expectations, the audience would not be able to grasp the creative twists. The audiences’ creativity is to map the conceptual space propositioned by the architect onto a novel, although fundamentally similar mental spaces that are previously defined.

5.32 Frames, as propositioned in AI hierarchical in the sense that there are ‘big-picture’ frames as well as ‘small-picture’ frames. For example, ‘commercial buildings’ are big-picture frames, whereas, ‘offices’, ‘restaurants’, ‘sops’ are small-picture frames. Boden states that: “Various slots are defined within the frame, and specific instances of the general class in question are represented by having different details in the (low-level) slots in the frame” (Boden, 2004: 111).

5.33 In the AI sense, a programmed frame (such as in a computer program) will include suggestions for moving around within the framework of a conceptual space. That is, the programmed frame provides computational pointers, suggesting which unfilled slot should be considered at various stage of thinking. In the computer, some slots come provided with ‘default values’, where the program assumes a particular description in absence of contrary instruction (ref. Boden, 2004: 112).
For example, if an architect were to work on a courtyard space, or if he were to recognise it in drawing or illustration, he would normally expect it to be opened to the sky; not roofed over. The courtyard would normally be surrounded by three or four walls; not completely opened without walls. There is ingress and egress in and out of the space. Working on the physical aspects of architecture alone, most likely limits creativity to P-creativity, which is incremental type of creativity.

5.34 To arrive at H-creativity, Boden suggests looking beyond the physical to the program, for example, she suggests a focus on function, which creative architects already normally do:

*An architect can focus on functional instead of physical issues. If what one needs to fulfil the various domestic functions carried on in a house is a number of clearly-defined and interconnected spaces, then physical walls are not always necessary. Indeed, ‘focus on the function’ is a heuristic that is very often used by architects, designers, and creative engineers to escape from stereotyped thinking* (Boden, 2004: 113).

5.35 Boden acknowledges that whatever mechanism that could be arrived at through AI, such as the analogy of scripts and frames, they could only possibly echo conscious thoughts – those that are ostensive – not the unconscious influences: “in short (so the objection goes), it is folly to expect scientific and poetic creativity to be explained in computational terms. ‘Computation’ means ‘following a program’, and whatever the brain is doing it is surely not that” (Boden, 2004: 126). She however does not give up. She suggests a reply to this:

*The key point in the reply is that the brains are, to some extent, like a certain type of computer-model; namely connectionists systems or neural networks. ‘Computation’ in connectionist systems does not mean following a program in the traditional sense. We shall see that the ideas used to describe connectionist computation are helpful in understanding how the brain works – and how some aspects of human creativity, especially combinational creativity, are possible* (Boden, 2004: 127).

5.36 This correlates with current neurological theory on how the brain works, particular as propagated by Damasio, who explains that that the mind, or consciousness has a neurological basis, which is integral with the rest of the human body through biochemical and neural circuits and that learning in a neuron circuit creates modifications and become images in the minds:

*The process that allows for invisible microstructural changes in neuron circuits (in cell bodies, dendrites and axons, and synapses) to become neural representation, which in turn becomes an image we each experience as belonging to us* (Damasio, 1994: 30).

Refer also to items 4.32, 4.33 above.

**Mind-Body Paradox**
5.37  Pinker propositions that the computational theory of the mind provides a scientific resolution to the mind-body paradox based on the logic that: data and symbols trigger our sense organs, which in turn give rise to new sense data – it allows meaning to cause and be caused:

The computational theory of the mind resolves the paradox. It says that beliefs and desires are information, incarnated as configurations of symbols. The symbols are the physical states of bits and matter, like chips in a computer or neurons in the brain. They symbolise things in the world because they are triggered by those things via our sense organs, and because of what they do once they are triggered. If the bits of matter that constitute a symbol are arranged to bump into the bits of matter constituting another symbol in just the right way, the symbols corresponding to one belief can give rise to new symbols corresponding to another belief logically related to it, which can give rise to symbols corresponding to other beliefs and so on. Eventually the bits of matter constituting a symbol bump into bits of matter connected to the muscles, and behaviour happens. The computational theory of the mind thus allows us to keep beliefs and desires in our explanations of behaviour while planting them squarely in the physical universe. It allows meaning to cause and be caused (Pinker, 1998: 25).

5.38  Pinker however cautions that non-ostensive human behaviour falls in the realm of different discussion. To Pinker, a human being is simultaneously a machine and a sentient free agent, depending on the purpose of the discussion: “The mechanistic stance allows us to understand what makes us tick and how we fit into the physical universe. When those discussion wind down for the day, we go back to talking about each other as free and dignified human beings” (Pinker, 1998: 56). He further says that:

I am certain that I am sentient as I am certain of anything. Though I concede that my curiosity about sentience may never be satisfied, I refuse to believe that I am just confused when I think that I am sentient at all. And we cannot banish sentience from our discourse or reduce it to information access, because moral reasoning depends on it (Pinker, 1998: 148).

5.39  Pinker suggests that in the computational theory, the whole is greater than the sum of its parts, and that sentience is not merely the computation of the parts together and in the end, he regards consciousness as still an enigma:

Sentience is not a combination of brain events or computational states: how a red-sensitive neuron gives rise to the subjective feel of redness is not a whit less mysterious than how the whole brain gives rise to the entire stream of consciousness. The ‘I’ is not a combination of body parts or brain sates or bits of information, but a unity of selfless over time, a single locus that is nowhere in particular. Free will is not a causal chain of events and states, by definition.... Our bafflement at the mysteries of the ages may have been the price we paid for a combinatorial mind that opened up a world of words and sentences, of theories and equations, of poems and melodies, of jokes and stories, the very things that make a mind worth having (Pinker, 1998: 564-5).
5.40 Boden, however does not give the computational theory up to ‘the mysteries’ as Pinker had done. In quoting Livingston Lowes, Boden infers that:

_Creativity is universal and non-magical, that it is a natural feature of the human mind that can be understood in psychological terms.... In short; just what are the hooks and eyes of memory; how do they find each other, and how can they fit together to produce a novel form? (Boden, 2004: 131)._

5.41 Boden suggests that connectionist computer models could help us understand how, say, poetry is possible (ref. Boden, 2004: 131) through the following frames:

1) Connectionist systems, for example, can do ‘analogical pattern-matching’. Which is explained as:

_An output pattern (that) can call up a range of stored different-yet-similar patterns, whose activation strength varies according to their similarity (as apples are strongly reminiscent of oranges and pears, and to a lesser degree to bananas (Boden, 2004: 132)._

2) These systems have ‘contextual memory’, wherein:

_An input pattern can activate not only a similar pattern, but also some aspects of its previous context. This is especially true if those aspects have already been partially aroused by the current context. (Similarly, an apple in a religious painting may remind you of eve, whereas an apple in a still-life does not.) (Boden, 2004: 132)._

3) They do not need perfect information, but can make do with probabilities, even messy probabilities. In other words:

_They can compute by using ‘weak constraints’. They will find the best match to a pattern by weighing up many different factors, none of which is individually essential and some of which are mutually inconsistent. (A person does the same sort of thing in judging the aptness of a poetic image) (Boden, 2004: 132)._

4) Connectionist systems have ‘associative memory’, grounded in both meaning and context:

_With repeated experience of the patterns concerned, many can learn to do better (much as someone brought up in an orchard is more likely to remember apples than someone who has seen apples only once). They learn, and can reactivate, many semantic and contextual associations between different representations (Boden, 2004: 132)._
5) Over time, these things are done ‘naturally’, without specifically programmed to do them:

(Likewise, you need not be told about apples, nor do you need explicit rules stating the relation of apples pears, or even to Eve – although an art-historian may help by telling you that an apple sometimes symbolises Eve.) Rather their associative memory and tantalising, human-like, capacities are inevitable results of their basic design (Boden, 2004: 133).

5.42 In defence against suggestions that computational idea is irrelevant to creativity because the brain is not programmed, Boden iterates that:

Connectionist computation is not the manipulation of formal symbols by programmed rules. It is a self-organising process of equilibrium, governed by differential equation (which deal with statistical probabilities) and comparable to energy-exchange in physics.... We must consider the ability of neural networks to learn to associate (combine) patterns without being explicitly programmed in respect to those patterns.... A computational system that could pick up a regularity, perhaps a very subtle one, without such pre-knowledge.... Likewise a mechanism that could spontaneously link – or even merge – concepts from different sources (Boden, 2004: 137).

5.43 What Boden arrives at eventually, through the computational idea, is that creativity draws crucially from ordinary human abilities:

Noticing, remembering, seeing, speaking, hearing, understanding language, and recognising analogies: all these talents of Everyman are important. So is our ability to redescribe our existing procedural skills on successive representational levels, so that we can transform them in various ways. It is this which enables young children to draw increasingly imaginative ‘funny houses’ and ‘funny men’.... and one could hardly get more ordinary than that (Boden, 2004: 261).

Computational Psychology

5.44 Boden claims that computational psychology helps ordinary people to understand things that are intuitively grasped by creative people. Take Picasso, for example, whose painting styles to Boden are “grounded in the deep structure of natural vision” (Boden, 2004: 264). She claims that through computational psychology, ordinary people can come to appreciate Picasso’s 1930’s portraits of Dora Maar, showing her with two eyes on the same side of the nose, which would otherwise appear to be unnatural, unreasonable, and therefore, ugly (ref. Boden, 2004: 264):

But whoever said that the artist must accept all the constraints of the real world? Enough is we can use them, challenge them, transform them, in ways that are somehow intelligible to us. The pictures of Dora are intelligible (they are even recognisable, if one has seen the a photograph of Dora). She does have two eyes, after all; and she does have a nose with a Roman profile. Simply, we cannot in real life see her as having these things together. If the painter chooses nevertheless to depict all these in one canvas, why should
we complain? Is he really doing something utterly unnatural, with no intelligible grounding in our knowledge and visual experience? Or is he, rather, exploring the conceptual space within which things may be seen either frontally or in profile? (Boden, 2004: 264).

5.45 Similarly, with Impressionist paintings, Boden suggests that it is our ability to compute interpretations at the ‘higher levels’ that helps us to see beyond the patches of colours:

A painter like Monet can help us to realise that distinguishing colour-patches is one thing, and seeing them as water-lilies is another. Indeed computational theories (and computer models) of vision suggest that our visual perceptions are constructed on several successive representational levels. Colour-patches and line-segments are identified at a relatively early stage. The construction of physical surfaces, located relative to the current position of the viewer, comes later. The construction of solid objects, independently located in three-dimensional space, comes later still. And the identification of named things, such as water, is constructed last of all (Boden 2004: 265).

Similarly, in ordinary lives, Boden suggests that we use computational method to notice things, to combine familiar ideas in novel ways, to understand sentences and appreciate analogies.

Myths

5.46 Based on arguments developed in computational psychology, Boden suggests that ‘creative geniuses’ like Mozart does not have ‘special powers granted only to the artistic elite’; only a highly developed version of the power we all share (ref. Boden, 2004: 267). She suggests that myths were invented around these individuals, for example, letters which Mozart purported to have written, claiming sudden inspirations were later found to be spurious.20

Musicologists have rejected this spurious ‘letter’ since the mid-1960s. Yet, a quarter of a century later, it is still being cited without qualifications by some writers on creativity. It is, of course, seductively plausible – for it fits in with the romantic and even inspirational views, and endorses our hero-worship of Mozart to boot (Boden, 2004: 266).

5.47 In order for us to manage our everyday lives, we are required to do all the things Boden describes in 5.43, as well as the ability to recognise things all at once – (the ability to recognise the wife from a hat) (ref. 4.29). Boden suggests that the difference between Mozart and the rest of us was he could do it better:

The reason he could do it better, at least where music was concerned, is that he had more extensive knowledge of the relevant structures. Memory, as noted earlier, stores items in the conceptual spaces within the mind. The more richly-structured (and well-signposted) the spaces, the more possibility of storing items in a discriminating
fashion, and recognising their particularities in the first place…. Mozart’s exceptionally well-developed musical memory was a crucial aspect of his genius (Boden, 2004: 268).

5.48 Boden considers Mozart a ‘genius’ because he was one of the very few people who have a constant, long-lasting, ability to produce H-creative ideas. Comparing Mozart with Haydn, who was more daring than Mozart in challenging musical rules, Boden deduces that Mozart’s H-creativity was primarily a matter of exploring prevailing rules to the limits, including bending and tweaking them at many unexpected points, rather than breaking them at the fundamental level as Haydn had done (ref. Boden, 2004: 269). In exploring existing musical rules:

We hear it with delighted amazement, for we had never realised that the relevant structural constraints had such potential. Someone who agreed with this relevant judgment might nevertheless regard Mozart as the greater genius – perhaps because his music is more diverse than Haydn’s, or because it shows us the full potential of a given genre even though he did not invent it in the first place.

Whether or not an instance of style-based H-creativity involves exceptionally radical transformation, it must involve the exploration of conceptual spaces. Accordingly expertise is essential. If one does not know the rules (not even tacitly), one can neither break nor bend them. Or rather, one cannot do so in a systematic way (Boden, 2004: 269).

5.49 Boden shares the same perspective with Gardner and Collins (ref. Section 3 above) by suggesting that H-creative people have a better sense of domain-relevance than P-creative people. Within the domain, she deduces that their mental structures are more “wide-ranging, more many-levelled, and more richly detailed than ours. And their exploratory strategies are probably more subtle, and more powerful” (Boden, 2004: 270). Elaborating this, she suggests:

These rare individuals, then, can search – transform – high-level spaces much larger and more complex than those explored by other people. They are in a sense more free than us, for they can generate possibilities that we cannot imagine. Yet they respect constraints more than we do, not less. Where we can do nothing, or at best mentally toss a coin, they are guided by powerful domain-relevant principles onto promising pathways which we cannot even see (Boden, 2004: 270).

Twelve-Year Rule

5.50 Computational view of intelligence hence leaves room for ordinary people to achieve a fair degree of P-creativity, with hope that leads to H-creativity, or at the very least, improve imaginative powers. Boden dismisses the myth of Mozart’s ‘divine-given’ powers and outlined that:

Mozart needed twelve years of concentrated practice before he could compose a major work, and much the same seems to be true of other composers. In short, a person
needs time, and enormous effort to amass mental structures and to explore their potential (Boden, 2004: 270).

5.51 How then does computational theory explains the emergence of H-creative person from the rest of the P-creative pack – what makes Mozart different from, say, Salieri who also devoted his life to music. Boden suggests that there may be something about Mozart’s brain that makes it exceptionally efficient at picking up musical regularities and exploring them and that, there is some evidence that that musical ability is to some extent innate:

*Nevertheless, inborn factors may help certain individuals to develop the conceptual structures required. Some structures may even be inaccessible in the absence of such factors. If so, then no amount of education or commitment could suffice to form a Mozart.*

*Just what these factors are, assuming they exist at all, is not known. But whatever they are, they are not supernatural. And almost certainly, they are more efficient versions of mechanisms we all share – not something profoundly different* (Boden, 2004: 275).

**Computational Creativity In Architecture**

5.52 In architecture, taking an iconic architect as an example: Frank Lloyd Wright’s series of prairie houses exemplify Mozart’s exploration of rules – in Wright’s case, rules of aesthetic grammar. Boden observes that: “Mozart needed twelve years of concentrated practice before he could compose a major work, and much the same seems to be true of other composers” (Item 5.50) seems to apply also to Wright. Wright’s first breakaway from classicism was with his own house in Oak Park, Illinois in 1889. His first prototypes for the Prairie Houses, the Warren Hickox House and the Harley Bradley House were built in Kankakee, Illinois in 1900. His first ‘true’ prairie house, the Ward Willits House, in Highland Park, Illinois was built in 1901 (ref. McCarter, 1997: 44, 48), exactly twelve years since his first break from classicism.

5.53 It is also worth noting that Frank Lloyd Wright’s Prairie Houses was not the sudden arrival of a divine-given idea but one that was evolved over a twelve year period. His own house built in 1889 was his first break from classicism. With the William Winslow House, built in 1893, “Wright first developed the exterior forms and elevational concepts that would allow him to begin to give shape on the outside to the dynamic qualities of interior space and plan he had already built inside his earlier houses” (McCarter, 1997: 35).

Other houses which followed: The Isedore Heller House, 1896; the Joseph Husser House, 1899; the undistinguished houses for J. Baldwin; N. Moore; O. Goan; G. Furbeck and K. Furbeck were described by McCarter as:

*The cause for the slow but certain unravelling of Wright’s design method during this period was his belief that he should provide a totally unique form for each of his client, even as their numbers rapidly increased; this belief of Wright’s was an*
interpretation of individuality in architecture which he now found increasingly difficult to accomplish in his actual designs (McCarter, 1997: 39).

5.54 Boden’s description of the happenings in Mozart’s mental spaces could well apply to Wright: “The reason he could do it better…. is that he had more extensive knowledge of the relevant structures. Memory, as noted earlier, stores items in the conceptual spaces within the mind. The more richly-structured (and well-signposted) the spaces, the more possibility of storing items in a discriminating fashion, and recognising their particularities in the first place…” (Item 5.47).

And also: “These rare individuals, then, can search – transform – high-level spaces much larger and more complex than those explored by other people. They are in some sense more free than us, for they can generate possibilities that we cannot imagine. Yet they respect constraints more than we do, not less. Where we can do nothing, or at best mentally toss a coin, they are guided by powerful domain-relevant principles onto promising pathways which we cannot even see” (Item 5.49).

Wright also shows us: “the full potential of a given genre even though he did not invent it in the first place” (Item 5.48). In describing Wright’s ideas on the Susan Lawrence Dana House, 1900, a renovation, Secrest puts it this way:

Wright was hardly the first to reject the idea of a house and rooms as a series of boxes, but he took its possibilities in new directions. By positioning his rooms on the diagonal he avoided the error of creating, by the simple removal of walls, a larger box in place of two smaller boxes, and went much further than his predecessors in replacing those divisions, which had formerly dictated the use of individual spaces, with screens or freestanding slabs that merely suggested them. ‘Destroying the box’ in this way still did not go far enough to suit him; he wanted to achieve the same with exterior walls as well. His solution was, first, to expand vastly the size and number of windows and, then, by inventing a method of turning the corner with windows, placing the panes of glass edge to edge with no intervening supports, he created the trompe l’oeil effect of appearing to make the corner disappear…. (Secrest, 1992: 169).

5.55 To Boden, McCarter and Secrest, Wright’s innovation is explicit and can be described. Boden dismisses the notion that Wright’s innovation is purely intuitive. She argues instead that Wright’s Prairie Houses follow grammatical constraints and is contained within a generic framework. In denigrating Koning’s and Eizenberg’s suggestion that Wright’s achievement of balance of the Prairie Houses is ‘occult’ “inferring that the stylistic unity is a mystery, accessible only to the intuitive genius of Wright”; she argues instead: “the shape grammar apparently captures the crucial aspects of the Prairie Houses” (Boden, 2004: 310). She explains that Wright’s organisation of the Prairie Houses is explicit:

Most of Lloyd Wright’s Prairie Houses have only one fireplace. Occasionally, however, he replaced the single hearth with several fireplaces. Because of the pivotal role of the fireplace in this particular style, to add a fireplace is to make a fundamental
alteration to the overall structure. But it will still be recognised as an (unusual) form of the Prairie House. As the ‘grammarians’ responsible put it, varying the number of fireplaces generates ‘a veritable prairie village of distinct but interacting prairie-style designs’, all within a single building.

Since the grammar allows a range of choices at each point, one can move into various regions of the conceptual space differing from neighbouring regions in more or less fundamental ways. Distinct ‘families’ of houses inhabit different regions of the space, and our intuitive of architectural similarity and dissimilarity can be specified accordingly. The principle of unity is no longer occult, but has been made explicit (Boden, 2004: 310).

5.56 Taking another example of an iconic architect: Andrea Palladio. Records reveal that Palladio likewise had taken approximately twelve formative years to arrive at what we now recognise as the original Palladian architecture. Ackerman states as follows:

These great figures (Bramante, Romano, Michelangelo) of the first decades of the century drew Palladio first in one direction, and then in another, in the formative years, 1538-49, and his work was more erratic in style and quality than that of any apprentice to the profession in the Renaissance. But he matured with unpredictable suddenness; the designs of around 1549 – Palazzo Chiericati and the villas Thiene and Rotonda – were wholly his and wholly new. He had learned to find himself by knowing others (Ackerman, 1966: 31).

5.57 Like Mozart and Wright, Palladio also shows us: “the full potential of a given genre even though he did not invent it in the first place” (Items 5.48, 5.54). Boden describes as follows:

The Palladian villa, as a general class (conceptual space), has a rectangular outline and preferred numerical proportions and dimensions. Its internal walls divide the plan into smaller rectangles, and the rooms are positioned and proportioned only in certain ways. The sixteenth-century Italian architect Andrea Palladeo designed many variations on his basic theme, which survive as actual buildings or as drawings. He also left some remarks describing his design technique, such as his habit of ‘splitting’ rectangles vertically or horizontally. But art historians have long disagreed about just what are the underlying rules. The Palladian program is an attempt to clarify them….

What one would like to have is a program which simply cannot generate unacceptable designs. In other words, one wants a ‘shape grammar’ that will generate only allowable (‘grammatical’) structures (Boden, 2004: 308-9).

5.58 Boden speaks about ‘shape grammar’ and ‘grammatical structures’ as constraints that allows sustainable innovation, and an approximate twelve years formative period, working within the grammatical constraints for the ideas to mature. Similarly, Gardner estimates that it takes ten years to become an expert in a domain and he gives
another ten years to make a truly original contribution to the domain (ref. Gardner, 2004: 139). Depending on interpretation, the formative years is twelve according to Boden and, ten according to Gardner (from expertise to originality). Both estimates are close and this is evidently exemplified in the cases of Mozart, Wright and Palladio.

5.59 In Boden’s texts, ‘shape grammar’ and ‘grammatical structures’ are operational through conceptual spaces (Item 5.04), mental maps (Item 5.20), frames and semantic nets (Item 5.28). All of these are visually interpreted, just as the examples used by Boden are visually orientated. Her interpretations are also categorical, structural and ostensive in the sense that the discussions do not bleed into matters that are subjective, such as discussions on consciousness. Her goal is to provide a material and ostensive description of creativity so that it can be accessible and attainable to ‘everyman’.

5.60 Ricoeur’s discourse into the equivalence of conceptual spaces and mental maps are equally psychological. However, he offers that the imagination is less that of ‘vision’ and more in terms of ‘language’. Not dissimilar to Boden proposition, semantic plays an essential role in innovation: instead of using the phrase, ‘semantic nets’; he instead calls it ‘semantic innovation’ (ref. Kearney, 1998: 142). The next section will interrogate Ricoeur’s hermeneutic imagination.

House X3
5.61 House X3 follows rules set by a genre of houses in the practice that began with Pat’s House (1999) and House X2 (2004). The common traits of these houses are as follows:

– A main flexible space on a single floor that is nearly transparent, that reduces the boundary between internal and external spaces.
– The main space floats over the terrain, providing clarity of formal expression.
– The walls of the main space are inflected horizontally and vertically with the intention of creating emotive responses as the light changes with the inflection of the walls.
– Industrial materials are normally used to achieve consistent recognisable lineage between the genres of houses.
– They are tropical in attitude with large overhangs and freely ventilated walls. Louvres are normally used to cut excessive penetration of sunlight, particularly where walls face low angular sun.

5.62 The house is considered as an evolution within a series, which started with Pat’s House (1999), with maturity and refinements as the series evolve over the years. There is a ‘shape grammar’ about it. The shape grammar is also a kind of ‘sign-posting’ of the particular genre of houses.

For now, the houses are located at P-creativity – it would be in later years that the houses may arrive at H-creativity, which would be for others to judge.
5.63 Through following rules of formal grammar in these series of houses, it is suggested that these series of houses can be applied to many sites. Changes are necessarily made to accommodate contextual circumstances, for example, site terrain, site profile, sun orientation, prevailing winds, and client profile. Development evolution takes place over time. House X4 in Section 7 demonstrates how adaptation can take place to fit with different circumstances.
SIX:
HERMENEUTICAL IMAGINATION (ANTAGONIST)

Literature Review F:
Ricoeur, The Conflict Of Interpretations, 2004
Gadamer, Truth And Method, 2004

Supporting Literature:
Levi-Strauss, The Savage Mind, 1966
Bachelard, On Poetic Imagination And Reverie, 1971
Danto, The Transfiguration Of The Common Place, 1981
Vattimo, The End Of Modernity, 1988
Kearney, Poetics Of Imagining, 1998
Bohm and Peat, Science, Order And Creativity, 2000

Preamble: From Visual To Literary Image

6.01   In Sections 2, 3, 4 and 5 above, imagination is visually orientated. To Sartre in Section 2, it is an ‘unrealised mode of quasi-seeing’; in Section 4, it is a ‘neutralised’ mode of seeing to Husserl, and a dialectical counterpart of the visible to Merleau-Ponty. In the existential and phenomenological methods of description, privilege is granted to the visual model; however as we move from description to interpretation, privilege is revised from ‘visual’ to ‘language’. The common vein that runs throughout the existential, phenomenological, and now the hermeneutical methods, is psychological. Ricoeur justifies the privilege given to language in interpretation as follows:

The dream symbolism revealed by psychoanalysis – with all its equivalents in folklore, legends, proverbs, and myths; the verbal creations of the poet, following the guideline of the sensory, visual, acoustic, or other images or following the symbolism of space and time. In spite of their being grounded in different ways – in the physiognomical qualities of the cosmos, is sexual symbolism, in sensory imagery – all these symbolisms find their expression in the element of language. There is no symbolism before man speaks, even if the symbol is grounded much deeper. It is in language that the cosmos, desire, and the imaginary reach expression; speech is always necessary if the world is to be recovered and made hierophany. Likewise, dreams remain closed to us until they have been carried to the level of language through narration (Ricoeur, 2004: 13).

6.02   Ricoeur’s thoughts echoes Bachelard who preceded him in providing the link between language and imagination and, between ‘correspondence’ and ‘metaphor’ (ref. Bachelard, 1971: xxxvi). Bachelard propositions that the imagination is captivated by the literary image, which eventually leads to the desire for reverie:

There is no poetry preceding the literary image. The literary image does not clothe a naked image, does not give speech to a mute image. Imagination speaks in us; so
do our reveries, our thoughts. All human activities desire to speak. When this speech becomes conscious of itself, then human activity desires to write, to give order to reverie and thought. The imagination is captivated by the literary image. Literature is thus not a pure substitute for any other activity. It accomplishes a human desire. It represents an emergence of the imagination (Bachelard, 1971: 26).

6.03 Bohm and Peat suggests that language is an essential media that enables an enfolding order from consciousness all the way to the structure of society. It is the media that transcends the covert (consciousness) and the overt (society, culture, etc.) and enables external structure to be formed, such as the structure of society:

Language is an enfolding order. Meaning is enfolded in the structure of the language, and meaning unfolds into thought, feeling and all the activities that have already been discussed. In communication, meaning unfolds into the whole community and unfolds from the community into each person. Thus, there is an internal relationship of human beings to each other, and to society as a whole. The explicate form of all this is the structure of society, and the implicate form is the content of the culture, which extends into the consciousness of each person (Bohm and Peat, 2000: 185).

Engagement Of The Mythical

6.04 Unlike the purely scientific method of description as exemplified by Boden, which normally dismisses the mythical (ref. 5.46); hermeneutical imagination engages the mythical as it is deemed to precede rationalisation, and has a deeper signifying power (ref. Ricoeur, 2004: 29). In rationalising myths, Ricoeur refers to structuralism, particularly to structural anthropology, which method follows the lead of linguists: “But the mind contrives to introduce a principle of order and regularity in certain parts of mass of signs, and this is the role of the relative motivator. In this sense we might say that some languages are more lexicological and others more grammatical” (Levi-Strauss, 1966: 156). In comparing the creative acts in myths and art, Levi-Strauss states:

The creative act which gives rise to myths is in fact exactly the reverse of that which gives rise to the works of art. In the case of the works of art, the starting point is a set of one or more objects and one or more events which aesthetic creation unifies by revealing a common structure. Myths travel the same road but start from the other end. They use a structure to produce what is itself an object consisting of a set of events (for all myths tell a story). Art thus proceeds from a set (object + event) to the discovery of its structure. Myths start with a structure by means of which it constructs a set (object + event) (Levi-Strauss, 1966: 26).

6.05 Ricoeur however departs from structural anthropology because of its insufficient attention to the unity of mythical thought and complain about its overemphasis on canonical forms, where the structure is more important than the content (ref. Ricoeur, 2004: 39, 47). He is also not convinced that linguistic concepts are insufficient for the entire range of mythical thought, and expressed that:
There perhaps exists another pole of mythical thought where syntactical organisation is weaker, the connection to ritual less marked, the relation to social classifications more tenuous, and where, on the contrary, the semantic richness allows an indefinite number of historical discoveries in more varied social contexts. At this other pole of mythical thought… structural comprehension is perhaps less important, in any case less exclusive, and more explicitly requires being joined to a hermeneutical comprehension, which endeavours to interpret the contents themselves, so as to prolong their existence and thereby to incorporate what in these contents is efficacious for philosophical reflection (Ricoeur, 2004: 40)).

**Textual Over Visual Semantics**

6.06 An issue about textual semantics, as opposed to visual semantics (as propounded by Boden) is the presence of multiple meaning, which makes language an instrument of knowledge compared with the image:

_A sign can indicate one thing without ceasing to indicate another thing and thus that, in order to have an expressive value in regard to the second, it must be constituted as a sign of the first…. The ‘accumulated intention’ of words is the fruitful source of ambiguity, but it is also the source of that analogous predication through which the symbolic power of language comes into being (Ricoeur, 2004: 68)._

Leading on to creativity, multiple meaning can take on an expressive function with regard to realities signified in an indirect manner (ref. Ricoeur, 2004: 68).

**Requirement Of Context**

6.07 The terminology used for multiple meaning is ‘polysemy’ (ref. Ricoeur, 2004: 68). _Context_ is required to order polysemy, without which, polysemy merely floats about without any mechanism. Ricoeur explains as follows:

_Here we grasp its mechanism in what we can now call an effect of context. Let us look once more at the functioning of ordered polysemy, which…. is properly a meaning effect produced in a discourse. When I speak, I realise only a part of the potential signified; the rest is erased by the total signification of the sentence, which operates as the unit of speaking. But the rest of the semantic possibilities are not cancelled; they float around the words as possibilities not completely eliminated. The context thus play the role of filter; when a single dimension of meaning passes through by means of the play of affinities and reinforcements of all analogous dimensions of other lexical terms, a meaning effect is created which can attain perfect univocity, as in technical languages. It is in this way that we can make univocal statements with univocal words by means of this sorting or screening action of the context (Ricoeur, 2004: 69)._ 

6.08 According to Ricoeur, the problem with the above description is that: the achievement developed in the above description is exclusive to linguistics:

_In this way, semantics and its problem of multiple meaning remain inside the closed system of language…. We now know that the science of this multivocity – the_
science of linguistics – requires that we remain within the enclosure of the universe of signs (Ricoeur, 2004: 70-1).

For multivocity to apply to other domain requires a strategic change of analysis: from that of words (lexemes) to that of underlying structure, “constituted wholly for the needs of analysis” (Ricoeur, 2004: 72).

6.09 Operating within a semantic framework, innovative ideas necessitates greater complexities in structural semantics. Ricoeur requires all semantic variants to be anchored in context:

*The entire effort of structural semantics will be to reconstruct, bit by bit, the relations that allow us to account for these meaning effects, following an increasing complexity... Structural semantics attempts to account for the semantic richness of words by means of a highly original method which consists in matching the variants of meaning to classes of contexts. The variants in meaning can then be analysed in a fixed nucleus, which is common to all the contexts, and in contextual variables* (Ricoeur, 2004: 73).

6.10 In the process of formulating innovative ideas, the many semantic variables are rationalised in correspondence with contextual semes (meanings). Ricoeur puts the equivalent analysis in linguistic argument as follows:

*If we place this analysis inside the framework of operational language, by including lexemes to a collection of semes, we can then define the variable meaning effects of a word as derivative of semes – or of semes – arising from the conjunction of a semic nucleus and of one of several contextual semes, which are themselves semic classes corresponding to contextual classes* (Ricoeur, 2004: 73).

6.11 In taste and humour for example, contextual semes is culturally conditioned. As an analogous example, this is evident in the political difficulties that had arisen from the satirical cartoons that had appeared in the *Jyllands-Posten* newspaper, Denmark in September 2005. Critics of the cartoons describe them as Islamophobic and argue that they are blasphemous to people of the Islamic faith, “intending to humiliate and marginalize a Danish minority, and that they are manifestation of ignorance about history of western imperialism, from colonialism to the current conflicts in the Middle-East”; whereas, supporters of the cartoons claim that in the context of a period of extremist Islamic terrorism, their publication is a legitimate exercise of the right of free speech. (ref. en.wikpedia.org/wiki/Jyllands-Posten_Muhammad_cartoons)

6.12 As part of an argument for cultural context in taste and humour in the aesthetics, Danto argues that:

*It may be argued that the senses of taste and humour are culturally conditioned, so that people of a given tribe find hysterically funny things that appal us, such as the death throes of a of a wounded antelope; and it is notorious tat there are people who find
aesthetically valuable things that repel us; exaggerated earlobes, tiny feet, immense lips, huge scars, ponderous bellies. But it may be countered that even colour predicates vary from tribe to tribe and culture to culture, so that differences erected upon this basis amount to very little (Danto, 1981: 96).

**Ontological Necessity**

6.13 However, from the same perspective, the effect of cultural conditioning differs between art (including architecture) and non-art. To Danto, art is necessarily ontological whereas non-art is institutional:

No sensory examination of an object will tell me that it is an artwork, since quality for quality it may be matched by an object that is not one, so far at least the qualities to which the normal senses are responsive are concerned.... Our aesthetic responses will differ because the qualities to which we respond are different.... We may, upon learning that an artwork is before us, adopt an attitude of respect and awe.... Learning something to be an artwork, we may attend to its gleaming surfaces. But if what we attend to could have been attended to before the transfiguration, the only change will have been adoption of an aesthetic stance, which we could in principle have struck before. It is a matter merely of attending to what was there to be perceived – like the taste of raspberries in a glass of gigondas.... Learning it is a work of art means that it has qualities to attend to which its untransfigured counterpart lacks, and that our aesthetic responses will be different. And that it is not institutional, it is ontological (Danto, 1981: 99).

6.14 By means of context, Ricoeur sees that the mysteries in language is overcome; however as in art (as interpreted by Danto above) the outcome of language is also regarded as ontological:

I think we too can say that there is no mystery in language; the most poetic, the most ‘sacred’, symbolism works with the same semic variables as the most banal word in the dictionary. But there is a mystery of language, namely, that language speaks, says something, says something about being. If there is an enigma of symbolism, it resides wholly on the level of manifestations, where the equivocalness of being is spoken in the equivocalness of discourse (Ricoeur, 2004: 75).

6.15 Compared with Ricoeur’s semes (or semic), which has a linguistic and semantic basis, units of meanings in ontology are usually intentional relation. Gadamer refers to Husserl’s phenomenology to equate units of meanings as such:

The epistemological function of the concept of experience in Husserl’s phenomenology is equally universal.... The unit of experience is not understood as a piece of the actual flow of experience of an ‘I’, but as an intentional relation.... Experiences exist only insofar as something is experienced and intended in them. It is true that Husserl also recognises non-intentional experiences, but these are merely materials for units of meaning, intentional experiences. Thus for Husserl experience becomes the comprehensive name for all acts of consciousness whose essence is intentionality (Gadamer, 2004: 57).
Culture

6.16 Gadamer develops the ontological aspect of hermeneutics even more strongly than Ricoeur with the introduction of ‘Bildung’, which to Gadamer, “is intimately associated with the idea of culture and designates primarily the properly human way of developing one’s natural talents and capacities…. describes more the result of becoming than the process itself. The transition is especially clear here because the result of Bildung is not achieved in the manner of a technical construction, but grows out of an inner process of formation and cultivation, and therefore constantly in a state of continual Bildung… The cultivation of a talent is the development of something that is given, so that practising and cultivating it is a mere means to an end” (Gadamer, 2004: 10).

6.17 In the area of the aesthetics, ontological value is tampered by common sense and community value, taking taste as example, Gadamer observes that:

*Here one may speak of a true sense of community. Doubtful though it may be whether one may speak of knowledge in connection with aesthetic taste, and certain though it is that aesthetic judgments are not made according to concepts, it is still the case that aesthetic taste necessarily implies universal agreement, even if it is sensory and not conceptual. Thus the true sense of community, says Kant, is taste* (Gadamer, 2004: 30).

Taste

6.18 In the event of artistic innovation Gadamer suggests that innovation is accepted within a universal framework, which is the prevailing taste:

*Genius is ultimately a manifestation of the vivifying spirit for, as opposed to the pedant’s rigid adherence to rules, genius exhibits a free sweep of intervention and thus the originality that creates new models.*

*In this situation the question arises of how Kant sees the mutual relation between taste and genius. Kant preserves the privileged position of taste, inasmuch as works of art (that is, the art of genius) must be viewed from the guiding viewpoint of beauty. One may regret the improvements that taste imposes on the invention of genius, but taste is a necessary discipline of genius. Thus, in cases of conflict, Kant considers that taste should prevail…. Taste is a faculty of judgment, and hence reflective, but what it reflects about is only that state of mind – the vitalisation of cognitive powers that results as much from natural as from artistic beauty. Thus the systematic significance of the concept of genius is limited by its being as special case of the artistically beautiful, whereas the concept of taste by contrast is universal* (Gadamer, 2004: 46-7).

6.19 To Gadamer, taste provides the aesthetic context in the way that it eschews arbitrariness as “a society chooses and knows what belongs to it and what does not”: 
However, the unity of an ideal of taste that distinguishes a society and bonds its members together differ from that which constitutes the figure of aesthetic culture. Taste still obeys a criterion of content. What is considered valid in a society, its ruling taste, receives its stamp from the commonalities of social life. Such a society chooses and knows what belongs to it and what does not. Even its artistic interests are not arbitrary or in principle universal, but what artists create and what the society values belong altogether in the unity of a style of life and an ideal of taste (Gadamer, 2004: 73).

6.20 Gadamer however provides the possibility of innovation surpassing that of taste as Gadamer regards taste to be subservient to genius when art ‘steps into the foreground’:

It is in fact clear that the concept of taste loses its significance if the phenomenon of art steps into the foreground. The standpoint of taste is secondary to the work of art. The sensitivity in selecting that constitutes taste often has a levelling effect in contrast to the originality of the artistic work of genius. Taste avoids the unusual and the monstrous. It is concerned with the surface of things; it does not concern itself with what is original about an artistic production (Gadamer, 2004: 49-50).

Aesthetic Differentiation

6.21 To Gadamer, what is considered a work of art has ‘aesthetic differentiation’ and with it, it can exist in its own right. The extra-aesthetic elements are things like, ‘purpose, function, the significance of its content’, and these elements situates the work in context with the world and therefore provides meaning to the work:

It shows what a pure work of art is, and allows it to exist in its own right. I call this ‘aesthetic differentiation’.

Whereas a definite taste differentiates – i.e., selects and rejects – on the basis of some content, aesthetic differentiation is an abstraction that selects only on the basis of aesthetic quality as such. It is performed in the self-consciousness of ‘aesthetic experiences (Erlebnis) is directed towards what is supposed to be the work proper – what it ignores are the extra-aesthetic elements that cling to it, such as purpose, function, the significance of its content. These elements may be significant enough inasmuch as they situate the work in its world and thus determine the whole meaningfulness that it originally possessed (Gadamer, 2004: 74).

6.22 Among the members of the artistic fraternity, the architect is considered ‘sui generis’ because according to Gadamer, unlike the poet, painter, or composer, he is not independent of commission or occasion. Whereas, the free artist creates without a commission, and he (the free artist) seems distinguished by “the complete independence of his creativity and thus acquires the characteristic social features of an outsider whose style of life cannot be measured by the standard of public morality” (ref. Gadamer, 2004: 76). To Gadamer, the condition of the free artist is not necessarily a good thing:
But at the same time the artist, who is as ‘free as a bird or a fish’, bears the burden of a vocation that makes him an ambiguous figure. For a cultured society that has fallen away from its religious traditions expects more from art than aesthetic consciousness and the ‘standpoint of art’ can deliver. The romantic demand for a new mythology... gives the artist and his task in the world the consciousness of a new consecration. He is something like a ‘secular saviour’ (Immermann), for his creations are expected to achieve on a small scale the propitiation of disaster for which an unsaved world hopes. This claim has since defined the tragedy of the artist in the world, for any fulfilment of it is always a local one, and in fact that means that it is refuted. The experimental search for new symbols or a new myth that will unite everyone may certainly gather a public and create a community, but since every artist finds his own community, the particular of such communities merely testifies to the disintegration that is taking place. What unites everyone is merely the universal form of aesthetic culture.... Immermann calls this free-overflowing of spirit within itself ‘extravagantly self-indulgent’ (Gadamer, 2004: 76-7).

Extra-Aesthetic Elements

6.23 Gadamer thus infers that without the extra-aesthetic elements like ‘purpose, function, the significance of its content’ (Item 6.20), and context (Item 6.18), the work of art is without meaning and is refutable. On the other hand, the work of the architect, which is not independent of commission or occasion, (Item 6.21) is regarded as more meaningful. Gadamer hence suggests that for art (and architecture) to be meaningful; it cannot be pure abstraction – it is tied to the extra-aesthetic elements. This would likewise apply to innovative art (or architecture):

In Kant the concept of genius had a transcendental function, and the concept of art was grounded through it. We saw how this concept of genius was extended by its successors to become the universal basis of aesthetics. But is the concept of genius really suited to this?

Modern artistic consciousness seems to suggest it is not....

The work of art is not some alien universe into which we are magically transported for a time. Rather, learn to understand ourselves in and through it, and this means that we sublate the discontinuity of our own existence. For this reason, we must adopt a standpoint in relation to art and the beautiful that does not pretend to immediacy but corresponds to the historical nature of the human condition. The appeal to immediacy, to the instantaneous flash of genius, to the significance of ‘experiences’ (Erfahrungen), cannot withstand the claim of human existence to continuity and unity of self-understanding. The binding quality of the experience (Erfahrung) of art must not be disintegrated by aesthetic consciousness (Gadamer, 2004: 80, 83-4).

Architecture As Play

6.24 Gadamer’s premise that the work of art or architecture should necessarily be connected to the extra-aesthetic elements (purpose, function, content and context), which is “not independent of commission or occasion” to be meaningful, suggests a third
party involvement – i.e., a spectator or audience, with the author. The medium of the work of art is like drama between the author and the spectator, and Gadamer infers that it is more than rules. To Gadamer, the work of art or architecture is a ‘transformation’, or a ‘play’, which can subsequently exist without the author and the spectator. By means of play, the work of art overcomes mere abstraction:

The work of art understood as a drama is not a mere schema of rules or prescribed approaches within which play can freely realise itself. The play of the drama does not ask to be understood as satisfying a need to play, but as the coming-into-existence of the work itself. And so there arises the question of what such a work properly is, given that it exists only in being played and in its representation as a play, though is nevertheless its own being that is thereby presented.

.... Play is structure – this means that despite its dependence of being played it is a meaningful whole which can be repeatedly presented as such and the significance of which can be understood. But structure is also play because.... it achieves its full being only each time it is played. That both sides of the question belong together is what we have to emphasize against the abstraction of aesthetic differentiation (Gadamer, 2004: 116).

**Temporality**

6.25 When the work of art or architecture is seen as a play, it is not confined to one interpretation. By fulfilling its function, it becomes contemporaneous, having temporality (a past), and as drama, it has ‘total mediation’ and has an existence of its own:

The mediation that communicates the work is, in principle, total.

Total mediation means that the medium as such is superseded (aufhebt). In other words, the performance does not become, as such, thematic, but the work presents itself through it and in it. We will see that the same is true of the way buildings and statues present themselves to be approached and encountered. Here too the approach as such is not thematic, but neither is it true that one would have to abstract from the work’s relations to the life world in order to grasp the work itself. Rather, it exists within them. The fact that the works stretch out of a past into the present as enduring monuments still does not mean that their being is an object of aesthetic or historical consciousness. As long as they still fulfil their function, they are contemporaneous with every age.... Thus we have the task of interpreting the work in terms of time (zeit) (Gadamer, 2004: 118-9).

6.26 Compared with a work of art, Gadamer suggests that a work of architecture just cannot stand anywhere and be a blot in the landscape – it is a solution to ‘an architectural problem’ (ref. Gadamer, 2004: 149). Hence, a work of architecture is not merely an abstract consciousness, but something that is worth thinking about: It would have context of life and intention (points back to original). Gadamer suggests that:
If a building is a work of art, then it is not only the artistic solution to a building problem posed by the contexts of purpose and life to which it originally belongs, but somehow preserves them, so that they are visibly present even though the building’s present appearance is completely alienated from the original purpose. Something in it points back to the original. Where the original intention becomes completely unrecognisable, or its unity is destroyed by too many subsequent alterations, then the building becomes incomprehensible. Thus architecture, this most statuary of all art forms, shows how secondary ‘aesthetic differentiation’ is. A building is never a work of art. Its purpose, through which it belongs in the context of life, cannot be separated from it without losing some of its reality. If it has become merely an object of aesthetic consciousness, then it has merely a shadowy reality and lives a distorted life only in the degenerate form of a tourist attraction of a subject for photography. The ‘work of art in itself’ proves to be a pure abstraction (Gadamer, 2004: 149-150).

Historical Significance

6.27 On the necessity of architecture being contemporaneous, Gadamer suggests specifically that the architect is an artist of his time:

Works of architecture do not stand motionless on the shore of the stream of history, but are borne along by it. Even if historically-minded ages try to reconstruct the architecture of an earlier age, they cannot turn back the wheel of history, but must mediate in a new and better way between the past and the present. Even the restorer or the preserver of ancient monuments remains an artist of his time (Gadamer, 2004: 150).

Further to this, Gadamer rationalises that:

It remains irrefutable that art is never simply past but is able to overcome temporal distance by virtue of its own meaningful presence…. Even though it is no mere object of historical consciousness, understanding art always includes historical mediation (Gadamer, 2004: 158).

6.28 Gadamer explains this further by considering the relevance of historical context in the interpretation of the text, but again the explanation could equally apply to architecture in the generic sense, as he has suggested that the architect is an artist of his time:

Every age has to understand a transmitted text in its own way, for the text belongs to the whole tradition whose content interests the age and in which seeks to understand itself. The real meaning of a text, as it speaks to the interpreter, does not depend on the contingencies of the author and its original audience. It certainly is not identical with them, for it is always co-determined also by the historical situation of the interpreter and hence by the totality of the objective course of history (Gadamer, 2004: 296).

6.29 Temporality is tied to its production in the original environment, or world, which is its context, without which, it loses its significance. Referring to art, Gadamer suggests that: “It loses its meaning when it is wrenched from this environment and enters
into general circulation” (Gadamer, 2004: 159). Likewise a work of architecture enjoys its true significance only where it originally belongs.

6.30 Further to this, the hermeneutics perspective requires agreement between the spectator and the author, wherein the spectator transpose himself not into the author’s mind; but into the work. The work is described as a perspective (or mediation: ref. Item 6.24). Gadamer explains about text, but could equally apply to works of art or architecture:

*When we try to understand a text, we do not try to transpose ourselves into the author’s mind but, if one wants to use this terminology, we try to transpose ourselves into the perspective within which he has formed his views…. we are moving in a dimension of meaning that is intelligible in itself as such offers no reason for going back to the subjectivity of the author. The task of hermeneutics is to clarify this miracle of understanding, which is not a mysterious communion of souls, but sharing a common meaning….*

*We have seen that the goal of all attempts to reach an understanding is agreement concerning the subject matter. Hence the task of hermeneutics has always been to establish agreement where there is none or where it has been disturbed in some way (Gadamer, 2004: 292).*

6.31 Gadamer acknowledges that the requirement of temporality poses an obstacle to the appreciation of new or innovative works of art (or architecture) and suggests that they are appreciated historically, that is, after the age of their production. Gadamer calls this ‘historical distance’ (Gadamer, 2004: 297), that is: “Only when their relations to the present time has faded away can their real nature appear”:

*Everyone is familiar with the curious impotence of our judgment where temporal distance has not given us sure criteria. Thus the judgment of contemporary works of art is desperately uncertain for the scholarly consciousness. Obviously we approach such creations with unverifiable prejudices, presuppositions that have too great an influence over us for us to know about them; these can give contemporary creations an extra resonance that does not correspond to their true content and significance. Only when their relations to the present time has faded away can their real nature appear, so that the understanding of what is said in them could be authoritative and universal (Gadamer, 2004: 297).*

6.32 According to the Gadamer’s perspective, the conditions for the appreciation of an innovative work includes the closure of a historical event, which, “allows us to view it as a whole, and its distance from contemporary opinions concerning its import” (Gadamer, 2004: 297). The further the historical distance, the less subjective the judgment of the works become:

*The implicit presupposition of historical method, then, is that the permanent significance of something can first be known objectively only when it belongs to a closed*
context – in other words, when it is dead enough to have only historical interest. Only then does it seem possible to exclude the subjective involvement of the observer (Gadamer, 2004: 297).

6.33 Other than clearing away subjectivity and prejudices, Gadamer suggests that temporal distance allows the true meanings of the work to appear. So essential is temporal distance in the judgement of creative works that Gadamer suggests that, “the hermeneutically trained mind will also include historical consciousness”. With the historical consciousness, the true meaning of the creative work continues to reveal itself infinitely:

But the discovery of the true meaning of the text or the work of art is never finished; it is in fact an infinite process. Not only are fresh sources or error constantly excluded, so that all kinds of things are filtered out that obscure the true meaning; but the new sources of understanding are continually emerging that reveal unsuspected elements of meaning. The temporal distance that performs the filtering process is not fixed, but is itself undergoing constant movement and extension. And along with the negative side of the filtering process brought about by the temporal distance there is also the positive side, namely the value it has for understanding. It not only lets local and limited prejudices die away, but allows those that bring about genuine understanding to emerge clearly as such.

Often temporal distance can solve question of critique in hermeneutics, namely how to distinguish the true prejudices, by which we understand, from the false ones, by which we misunderstand. Hence the hermeneutically trained mind will also include historical consciousness (Gadamer, 2004: 298).

6.34 The real experience of art, or architecture must thus have historical consciousness, and to Gadamer’s mind, art cannot be ‘contemporary to all times’ and that, art or architecture outside history is false. He distinguishes real art from ‘aesthetic consciousness’:

If Hegel considers all art as something past, it is as it were absorbed by historical, rememorative consciousness; and as something past, it achieves aesthetic simultaneity. Insight into this context set me the hermeneutic task of employing the concept of aesthetic non-differentiation to distinguish the real experience of art – from aesthetic consciousness. This seems to me a legitimate problem, one that does not result in idolising history but is unmistakable in our experience of art. To regard ‘art’ either as contemporary with all times and outside history or as a way of attaining culture through the experience of history is to impose a false dichotomy (Gadamer, 2004: 575).

Practice And Experience

6.35 In the production of innovative works, it seems conceivable that knowledge and insight could be accumulated through experience prior to an innovative breakthrough. Gadamer suggests that: “The truth of experience always implies an orientation toward a new experience. That is why a person who is called experienced has
become so not only through experiences but is also open to new experience” (Gadamer, 2004: 350). Here, Gadamer infers that a person can be radically undogmatic because of the many experiences and knowledge he has drawn from them, he is particularly well equipped to have new experiences and learn from them. From this perspective the dialectic of experiences enable openness and invention.

6.36 The reliance on experience infers an inversion towards psychology instead of say, methodology, in the production of innovative works. A psychological agreement between the spectator and the author is also prerequisite to the appreciation of the works. Gadamer however admits the difficulty of reconciling the psychological inversion with historical significance, and it remains unresolved:

A philosophical theory of hermeneutics is not a methodology – right or wrong (‘dangerous’) as the case may be. It may be misleading when Bollnow calls understanding an ‘essential creative act’ – although Betti does not hesitate to describe the elaborative interpretation of law. But it is quite certain that to follow the aesthetics of genius, as Betti himself does, is not sufficient. The theory of inversion cannot really overcome what Betti recognises as a psychologising constriction.... If, in order to explain the possibility of understanding.... he has to presuppose that only a mind on the same level can understand another mind, the inadequacy of this psychological-hermeneutical ambiguity becomes apparent.

Even if we are basically clear about the difference between psychic particularity and historical significance, it obviously remains difficult to find the transition between the narrowness of psychology to a historical hermeneutics (Gadamer, 2004: 513).

6.37 From the Gadamer’s world-view, historical distance validates innovation, but it is psychological experience that produces innovation. With this comes the importance of ‘practice’, which he regards as a necessity over ‘method’. Compared to practice, method merely creates confusion. Practice could negotiate with things that are considered as subjective to arrive at the ‘concreteness of the case’ with ‘highest universality’, to guard against ‘technological self-understanding’, which he associates with method. He uses scientific enquiry, legal judgment and ‘play’ as analogies to proposition this point:

The final confusion that dominates methodology of the sciences is, I think, the degeneration of the concept of practice. This concept lost its legitimacy in the age of science with its ideal of certainty. For since science views its purpose as isolating the causes of events – natural and historical – it is acquainted with practice only as the application of science. But that is a practice that requires no special account. Thus the concept of technology displaces that of practice; in other words, the competence of experts has marginalized political reason....

We are acquainted with this problem in the form Kant gave it in the ‘Critique of Judgment’. There he differentiates between determinative judgment, which subsumes the particular under a universal, and reflective judgment, which seeks a universal concept
for a given particular.... The universal under which the particular is subsumed continues
to determine itself through the particular. Thus the legal meaning of a law is determined
through adjudication, and fundamentally the universality of the law is determined
through the concreteness of the case. Aristotle has even gone as far as to claim that the
atomic idea of the good is vacuous, and rightly so, if we really have to think of the good
as a being of the highest universality.

Relying on the tradition of practical philosophy helps guard us against the
technological self-understanding of the modern concept of science.... The concept of
play.... which I employed to critique ‘aesthetic differentiation’, involves an ontological
problem. For this concept unites event and understanding in their interplay, and also the
language games of our world experience in general, as Wittgenstein has thematised them
in order to criticise metaphysics (Gadamer, 2004: 560-1).

6.38 It is also Danto’s viewpoint that art cannot be isolated from its history,
which gives the art its identity and structure – he in fact regards that there is no
philosophical defence for an ahistorical theory of art:

There is a further point. I have inveighed against the isolation of artworks from
the historical and generally causal matrices from which they derive their identities and
structures. The ‘work itself’ thus presupposes so many causal connections with its artistic
environment that an ahistorical history of art can have no philosophical defence (Danto,
1981: 175).

6.39 However, according Vattimo, history is something that is made by
innovators, rather than something that is needed to validate innovation, and because of
this, he sees a non-historicity about innovators. Instead he sees that the innovator is more
dependent on taste and technical ability to “produce truly exemplary works which are
epoch-making”. Vattimo also advocates practice to arrive at innovation; but appearing to
by-pass history, he takes his cues from Kuhn’s idea of breaking existing paradigms to
arrive at true innovation:

The apparent non-historicity of genius stands opposed to the historicity
established by mechanical ‘heads’, and by great scientists as well. The genius cannot
teach others his ways of inventing and producing, since he himself dos not know how to
understand them fully. Works of genius nevertheless serve as exemplary models, and
when nature gives rise to other geniuses the latter becomes the impulse, for any existing
genius, towards new analogous works. This, perhaps more than anything else, can be
called historicity: for is the kind of progress established by mechanical ‘heads’ appears
primarily as a model of continuity and cumulation, it is still lacking in an authentically
processual nature. Everything that scientists discover is presupposed as already
available: in other words, scientific discoveries give articulation to already existing

Wickham Apartments
6.40 The project for luxury apartments at Jalan Wickham in Kuala Lumpur was designed in concurrence with the interrogation of hermeneutic imagination for this thesis. Hermeneutic imagination states that privilege is given to language over visual. It is closely related to phenomenological imagination in its engagement with psychology: “the verbal creations of the poet, following the guideline of the sensory, visual, acoustic, or other images or following the symbolism of space and time” (Item 6.01; Ricoeur, 2004: 13).

6.41 Hermeneutical imagination engages the mythical as it is deemed to precede rationalisation, and has a deeper signifying power (Item 6.03; ref. Ricoeur, 2004: 29). Following this, the narrative of the project revolves itself around the mythical preconditions that surround climate, wherein the engagement of climate becomes the main premise of the design:

1) The creation of breezeways: That the natural warm climate is good thing and the apartments should engage directly with the prevailing climate. The result is the creation of breezeways, where breeze is allowed to traverse from one end of the building to another, thereby cooling the whole abode. This follows that air-conditioning is dispensed with for the living areas of the house as the house is naturally cooled.

2) The creation of courtyards: Historically, the courtyard is inextricably linked with urban living, which is traced to the earliest townhouses in Malacca and Penang. Historically, the urban courtyards were all located close to the centre of deep land-plots, where the buildings were no more than two stories. Indeed the very earliest townhouses were single stories with courtyards in the middle. The buildings were normally 60’ to 100’ deep.

By economic necessity, the Wickham Apartments has arisen up to seven stories, and 70’ deep. Locating the courtyard in the middle will not work with a high building as little light is received at the lower levels. Hence the courtyards are placed at the edge of the buildings to become large voids that connect directly with the external environment and with the sky.

3) Being in the line of prevailing sea winds, the natural terrain is perpetually wet and green. Water and foliage are abundant in the natural landscape. This is introduced into the courtyards and at the podium. They flow naturally into the apartments, taking away the boundary between the internal and external spaces.

6.42 Hermeneutical imagination requires that the design is anchored in appropriate context (ref. Item 6.08): “It loses its meaning when it is wrenched from this environment and enters into general circulation” (Gadamer, 2004: 159). The present physical vicinity is made of scattered bungalows surrounded by bungalows. The bungalows come from different era, including the present era. Due to economic pressure, luxury apartments in similar scale to Wickham Apartments are gradually replacing the individual bungalows. Hence the prevailing physical context is one of low density residential, of varying scales and the Wickham Apartments is just one of these.
In the engagement of historicism, Gadamer requires that the ‘architect is an artist of his time’, for the work to be authentic (ref. Item 6.26), and taking a step further, Vattimo infers that the designer is entitled to break from existing paradigm to arrive at a new precedence. Wickham Apartments does not profess to do either. It is more a play of rules (or language games) – ‘the breezeway’, ‘the courtyard’, dealing with water elements and foliage: Gadamer’s hermeneutic imagination allows for the play of semantics – a play as part of practice that enables the work to rise above mere method (ref. Item 6.36).
SEVEN: CRYSTALLISATION OF MENTAL PROCESSES (PROTAGONIST)

Preamble

7.01 This section explores the mental processes that creates innovation. In the exploration of this process, Briggs asks several questions: 1) How innovators work; 2) Why they work as they do; 3) The way creative techniques and talents appear; 4) The flowering of particular creation (ref. Briggs, 2000: 5). The premise of Briggs thesis is to use the idea of ‘alchemy’ as a metaphor to interrogate the creative mental process:

One particularly delightful instance of the reminder lies in the felicitous phase ‘magnum opus’. So often applied to superior creative productions, the term originally was alchemic, referring both to the final product of the hierophant’s activity that created the stone (Briggs, 2000: 5).

Briggs qualifies that the metaphor ‘alchemy’ is not intended to carry any weight to determine claims:

By using this metaphor I am neither affirming nor denying any of the claims of alchemy as such. Also, in an actual (as opposed to a metaphorical) sense it should be kept in mind that geniuses are quite unlike alchemists (Briggs, 2004: 5).

7.02 Briggs opposes the reductionistic approach to the interrogation of mental processes that lead to innovation. He eschews the attempts to squeeze the mental processes to a simple cluster of traits or attributes, and differing from say, Boden’s computational imagination, Briggs complains that:

A reductionist approach treats the human mind as if it were a computer whose complexity may be explained by the logic of the computer language and the on-and-off status of the electromagnetic switches. But the mind is not a computer and during the
past few years a growing number of scientists and philosophers of science have pointed out the serious problems inherent in this view that the universe is fundamentally mechanical and reducible (Briggs, 2000: 8).

7.03 As propounded in Section 6, aligning with Gadamer’s hermeneutical imagination, Briggs appear to agree that innovators are motivated by non-objective aspects such as ‘truth’ and ‘vision’:

Curiously, the notion that a great genius possesses ‘vision’ is usually slipped into even the most reductionist discussions of creativity – an element assumed but not defined, vital but almost totally ignored. ‘Truth’ however, is a word seldom used by creativity theorists – though it is not uncommonly found in statements by creators…. Indeed, it is a little hard to imagine that you could say much scientifically about a person’s intimate sensations of truth.

Nevertheless, the obvious fact is that the lives of great creators are importantly motivated or guided by some quest for truth, some vision, some inner spirit…. “the inward voice that decides” (Briggs, 2000: 9).

Themata

7.04 Following the work of Holton, Briggs suggests that there are hidden elements in the minds of innovators, which is termed as ‘thematic ideas’, which are clusters of presuppositions and ‘gut’ assumptions, which are called ‘themata’: themes. Using scientific discoveries as examples, Briggs explains as follows:

For the most part themata are aesthetic qualities like the assumption that the universe is basically symmetrical, or the opposite assumption that it’s symmetrical…. ‘normal’ science share basically the same set of underlying assumptions. Scientists who end up revolutionising their fields appear to have a collection of themata at variance in some significant ways with the theme clusters held by most of their colleagues (Briggs, 2000: 26).

7.05 These themata are not abstraction, but are concrete feel for the surrounding world. Holton analogises the themata as ideas, but Briggs call them thematic perceptions. For example, one of Einstein’s themata includes the belief that scientific explanations should be formalistic mathematical set of ideas rather than involving observable natural phenomena; a belief that whatever laws that are found should be applicable to anywhere in the universe: “a conviction that the universe is in its deepest sense unified, symmetrical, simple, and causal; and a need to have descriptions and explanations be ‘complete’” (Briggs, 2000: 29).

7.06 Themata are seen as guiding visionary elements connected to the innovator’s emotional life. Briggs speculates that when Einstein theorises on light, like the way he elevates the speed of light to the status as the only constant, or invariance, it might have something to do with unconscious biblical significance as part of his childhood influence; “linking him to the themes that were part of his childhood sense of a
religious paradise. In relativity theory, light becomes the cornerstone of universal order” (Briggs, 2000: 30).

7.07 From Briggs’ perspective, the mind is not *tabula rasa*, but is made up of themata (he also calls these thought-forms), which for some minds can produce real insights and not for others. He speculates that innovators have a higher commitment to the pursuit of their idiosyncratic ensembles of themes than their less creative colleagues:

*Colleagues may ignore, even suppress some of their own subliminal thematic perceptions because they are not perceptions that people around them acknowledge....*

*Great creators are different in the sense that they feel compelled to show the world that their themata in fact point to a hidden reality that people pursuing the consensual themata of the moment have failed to notice.*

*The strength of this commitment is so powerful that rather than bend or suppress personal themata in order to carry on a successful career.... some (innovators) have switched fields looking for a place where their themata could attain full expression* (Briggs, 2000: 32).

7.08 Working in tandem with themata are ‘screen memories’, which provide nuances to the themata. Briggs describes as follows:

*Think of nuance in terms of colour. The three primary colours may be missed to produce a virtually endless number of shades, tones and hues – that is, nuances. Or, more dramatically, think of perfume. The same perfume on one woman smells differently on another. The perfume itself is composed of a huge number of odours, some of them not typically associated with pleasant aromas. Roots, mosses, beaver castoreum, even skunk oil are common ingredients of perfume. Together, the different scents fuse to produce a single subtly vivid odour.... the thematic qualities are in fact fused in the nuance* (Briggs, 2000: 39).

7.09 Further to this, Briggs propounded examples of works of writers, poets, musicians and artists. He suggests that: “an emotional and aesthetically images can’t be verbalised. It is a matter of nuance”. For example he quotes nature photographer Ansel Adams:

*“Why is an Edward Weston photograph of a rock vastly more exciting than a very competent informational or technical picture of the same rock? The chances are that the latter might be physically ‘sharper’, and may reveal to a geologist certain physical facts in all aspect that the Weston picture cannot do. The difference is one of purpose, sensitivity and the ability to visualise an emotionally and aesthetically exciting image. To further verbalise this is futile”* (Briggs, 2000: 40).

7.10 Dewey finds it equally difficult to ‘verbalise’ artistic nuances and he puts it in another way:
We are hardly conscious of anything metaphorical when we say of one picture or of another story that it is dead, and of another that it has life. To explain just what we mean when we say this, is not easy. Yet the consciousness that one thing is limp, that another has the heavy inertness of inanimate things, while another seems to move from within, arises spontaneously. There must be something in the object that instigates it (Dewey, 1934: 183).

7.11 Out of the exemplars of the many innovators from various domains: wherein Briggs quotes Virginia Woolf, John Keats, Beethoven, Georgia O’Keeffe, Louise Nevelson, Albert Einstein, Isaac Newton, Copernicus, Kepler, Charles Darwin, Nikola Tesla and Marie Curie (ref. Briggs, 2000: 36-47) – he concludes as follows:

What do all these cases show? It appears that for many (innovators), an obsession with some particular nuance or complex of nuances burns at the core of vision. For other (innovators), a general sensitivity to certain classes of nuances may be significantly at play. Such sensitivity would help a scientific creator, for example, sort out the relevant details from what is called the ‘noise’ in the experimental situation and go straight to the heart of the matter. Nuance and themata are clearly related. Nuance is the aura or nimbus that surrounds a thema or several themata, the energy that infuses thematic convictions (Briggs, 2004: 47).

Feeling Tones

7.12 The idea of ‘feeling tones’ was first developed in the research of William Gray and reformulated by Paul LaViolette as a psychodynamic and neuroanatomical picture of how the brain is organised (ref. Briggs, 2000: 48). Feeling tones are emotional nuances that are logged in the brain through thoughts and memories. Gray suggests that even in the ordinary course of thought, emotional nuances are evoked even if no attention is paid to them. To elucidate this, Briggs borrows Gray’s example of a simple cognition: take the cognition, 2+2=4:

Try to remember what it must have felt like to learn that concept. Something called 2 has a feeling to it. The process of adding, the process of equalling and something called 4 also have feeling to them. There must have been a small amazement, a shock to the brain, at being shown or told that all these nuances form an order. The order, 2+2=4, now has its own nuance that includes a sense of finality or closure, a sense that ‘this is the way it is’. Eventually that nuance-with-closure overshadows the others until 2+2=4 seems to be pure cognition, a rational thought with no emotion at all. That isn’t true of course. Thoughts always have emotion connected to them and, in humans, emotions are mostly set in motion by thoughts.

According to Gray, thought-emotions become associated together into structures vastly larger and more complex than 2+2=4. The structures include, for example, our knowledge of mathematics as a whole (Briggs, 2000: 49).
According to LaViolette, a closed-loop network of neurons connects the limbic organs of the human brain, in what is called the Papez circuit. They trigger feeling tone responses and generate what Gray and LaViolette call an emotional ‘theme’, which is similar to a musical theme – an organised pattern of feeling tones or musical notes (ref. Briggs, 2000: 52-3). Although researched separately, Gray-LaViolette’s ‘theme’ is common with Holton’s themata, wherein both terms refer to the qualitative and emotional elements underlying thought. LaViolette proposes that the waveforms that circulate through the Papez circuit evoke long-term memories, where these memories in turn become part of the evolving ‘theme’.

In similar vein, Bachelard speaks metaphorically about the poet’s dynamic imagination, which has integrative powers that enable us to incorporate images. He takes the metaphor of an upside down tree, and describes it emotively:

.... whose roots, like a delicate foliage, tremble in the subterranean winds while it branch take root firmly in the blue sky.

I believe that there are objects which have integrative powers, things which enable us to incorporate images. For me, the tree is an integrative object. It is normally a work of art.... The imagination then took possession of all the powers of plant life.... Immediately, within us, we feel the roots working, we feel that the past is not dead.... The tree is everywhere at once. The old root – in the imagination there are no young roots – will produce a new flower. The imagination is a tree. It has the integrative virtues of a tree. It has roots and boughs. It lives between earth and sky. It lives in the earth and in the wind. The imagined tree becomes imperceptibly the cosmological tree, the tree which epitomises a universe, which makes a universe (Bachelard, 1971: 84-5).

Probing deeper into memories that are carried in “the waveforms that circulate through the Papez circuit” (ref. Item 7.13), Bachelard describes about childhood reveries that are carried into adult life:

The dream-being passes through all the ages of man, from childhood to old age, without growing old. And that is why, later in life, one experiences a sort of double reverie when one attempts to revive childhood dreams....

Dreaming of childhood, we go back to the den of reveries, to the reveries which opened up the world for us. It is reverie which makes us the first inhabitants of the world of solitude. And we live all the better in the world, living as the solitary child lives in images. In the child’s reverie, the image comes first. Experiences only come afterward; they go against the current of all reveries of flight. The child’s vision is grand and beautiful. Reverie orientated toward childhood takes us back to the beauty of first images.... that reverie which unites us with the world (Bachelard, 1971: 96).

In a more ostensive and less metaphorical manner, Briggs elucidates the point the nuance tones (equivalent to Bachelard’s reverie) by quoting Virginia Woolf’s
own narrative about her first memories at St. Ives that influenced her adult writing, particularly her books, ‘To the Lighthouse’ and ‘The Waves’:

“…. in fact is the most important of all my memories. If life has a base that it stands upon, if it is a bowl that one fills and fills and fills – then my bowl without a doubt stands upon this memory. It is of lying half asleep, half awake, in bed in the nursery of St. Ives. It is of hearing the waves breaking, one, two, one, two, and sending a splash of water on the beach; and then breaking, one, two, one, two, behind the yellow blind. It is of hearing the blind draw its little acorn across the floor as the wind blew the blind out. It is of lying and hearing this splash and seeing this light, and feeling, it is almost impossible that I should be here; of feeling the purest ecstasy I can conceive” (Briggs, 2000: 36).

7.17 Briggs observes that not only the title but the entire structure of Woolf’s ‘The Waves’ is based on the metaphor of waves tumbling one after another on the beach. Briggs speaks of the rhythm of the book as follows:

Having eliminated plot and the traditional time-space structure of the novel, Woolf replaced it with sections in which the consciousness of each character speaks. These sections fall after one another in repeated sets, like waves. The early pages, representing the early childhoods of the characters, are filled with what Woolf called elsewhere ‘moments of being’, moments of exquisite, vibratory perception like the one she described having had as a baby in the nursery at St. Ives…. Thus in Virginia’s cortex, the angle of the blind, the rhythmic patterns of the waves are being abstracted out and transmitted through the brain as sensory information (Briggs, 2000: 37, 52).

7.18 From Briggs’ perspective, the nursery room nuance had activated in Virginia Woolf, a set of nuances that were part of the large ‘theme’ of nuances that have to do with her memories of the St. Ives’ summer. Briggs proposes that:

The ‘theme’ circulating mostly below the level of awareness, would contain hundreds of sensory fragments, each impregnated with emotional nuances. Over time these nuances would constantly be modified by other nuances, so that the ‘theme’ would vary in a complex way (Briggs, 2000: 54).

7.19 Briggs describes the mental condition, not as a cognition, but a ‘brain state’, which was not mainly thought but also not mainly feeling, and not mainly perception. Briggs describes it as a kind of ‘pulsation in a field of nuance’:

.... a state in which feelings, thoughts, memories and perceptions flowed vividly into each other and were inseparable. The words ‘emotion’, ‘nuance’ and ‘feeling-tone theme’ do not imply that the state is emotional in the ordinary sense of the word emotion, nor should we conclude that nuances do not importantly contain thoughts.

Thoughts are obviously an immense and indispensable feature of a creator’s mental activity in all phases of creative process. It’s only when a child begins to
formulate cognitions that creativity as we recognise it becomes possible. However, creators seem inclined to keep their thoughts pulsating in a field of nuance rather than having them dominate the field (Briggs, 2000: 55-6).

7.20 In parallel with Virginia Woolf’s description of childhood memories in St. Ives, Bachelard’s proposition of childhood memories of spaces in a dwelling resonates something similar, which is familiar to architects:

The house we were born in has engraved within us the hierarchy of the various functions of inhabiting. We are the diagram of the functions of inhabiting that particular house, and all the other houses are but variations on a fundamental theme. The word habit is too worn a word to express this passionate liaison of our bodies, which do not forget, with an unforgettable house.

But this area of detailed recollections that are easily retained because of the names of things and people we knew in the first house, can be studied by means of general psychology. Memories of dreams, however, which only poetic meditations can help us to recapture, are more confused, less clearly drawn. The great function of poetry is to give back the situations of our dreams. The house that we were born in is more than an embodiment of a home, it is also a embodiment of dreams. Each one of its nooks and corners was a resting-place for daydreaming. Our habits of a particular daydream were acquired there. The house, the bedroom, the garret in which we were alone, furnished the framework for an interminable dream.... In point of fact, we are in the unity of image and memory, in the functional composite of imagination and memory.... What special depth there is in a child’s daydream! And how happy the child who really possesses his moments of solitude! (Bachelard, 1964: 15-6).

Individual-Universal Equation Or Implicate Order

7.21 Briggs suggests that innovators see their works as manifestation of universal truths – in holistic and cosmic terms. Mozart, for example said that a piece would grow on him until “the whole, though it be long, stands almost complete and finished in my mind so that I can survey it, like a fine picture or a beautiful statue, at a glance. Nor do I hear in my imagination the parts successively, but I hear them, as it were, all at once” (Briggs, 2000: 82). In bringing this kind of discussion to the surface, Bohm calls it ‘implicate order’, wherein lone images are transformed into an organic whole rather than a succession of images, which is common to all works of art:

This perception of implicate order is generally common to all works of art. For example, the montage, or editing together of successive images, in the film of a great director has something in common with music, for the internal structure, quality, and feeling of each image infuses with all others. In this way the value and meaning of a particular image, seen alone, is totally transformed and the resulting scene is viewed as an organic whole rather than as a succession of explicit images. In poetry the various resonances of words and images act together in highly complex orders so that associations of memory and meaning in an individual word or image, together with the
particular sounds in vocalisation evokes, are all enfolded together (Bohm and Peat, 2000: 189).

7.22 John-Steiner explains that the innovator is driven by the largeness of his goal compared to the ordinary person, who is ordinarily content with repetitions:

These characteristics of creativity – its developmental nature, linking of overt and covert processes, and the construction of an open-ended and regenerative system – may also be seen in the lives lacking the distinction of creative achievements. What is the difference?

The difference lies in the intensity and continuity of the creative individual’s mental life. Work in the market place is discontinuous; one is given a task, which once completed leads to another, a discreet assignment. Daily thought, which accompanies these daily challenges, also has a certain discontinuity. Once we close the door behind our paid work, we also tend to close our mind to it. Indeed, ordinary, repetitive work needs to be extrinsically rewarded because it lacks the intrinsic rewards of sustained, continuous labour (John-Steiner, 1985: 221).

7.23 The innovator is hence driven to recreate whole systems. In Item 7.16, when Woolf reminisce the moment of life like, “a bowl that one fills and fills and fills – then my bowl without a doubt stands upon this memory”, the moment of life is also seen as a whole of her life. A biographer, Jean Love were to say that, Woolf “tried much of her adult life, by means of her writing, to compose the perfect whole of her past experiences (Briggs, 2000: 68). The innovator therefore uses the products of creative activity to identify the self with the whole in the desire to become the centre of a universe.

7.24 With deference to the creative side of art, particularly, in the domain of painting, Bohm and Peat attempt to make comparisons with of creative art with their experiences with creative science. Their objective description, using terms ‘matrix of ideas’ and ‘inward perception’ correlates with Woolf’s poetic description of literary insights. Their description reinforces Woolf’s perception from another perspective:

Yet all sensory data are deeply influenced by a person’s background and disposition. In the case of the artist, this includes everything that has gone before.... as well as with the artist’s relationship to the subject.

Psychological experiments have established that visual perception is clearly conditioned by the circumstances in which that perception takes place, for example, the ‘meaning’ of the scene and which questions are put to the viewer at the time. Clearly the artist is not immune to this process and the ‘artistic vision’ arises out of an outward communication with a vast matrix of ideas, social predisposition and so on. In addition, the artist is also very much concerned with the ‘inward perception’, a vision through the mind that is not dissimilar to that experienced by the (creative) scientist.... Indeed the
final painting must take its place within an artistic matrix that stretches over space and time (Bohm and Peat, 2000: 105).

**Synesthesia**

7.25 The term ‘Synesthesia,’ as interpreted by Briggs, is a concept developed from the mixing of senses and intelligences. Some of Gardner’s intelligences like spatial and bodily-kinesthetic intelligences have a degree of sensory content; while others like logical-mathematical and linguistic intelligences are high in conceptual content. All seven intelligences\(^5\), in turn, are mixture of core intelligences, having various levels of sensory and conceptual contents. Synesthesia goes beyond the ordinary mixing of senses that takes place in the consciousness. Briggs describes it as “sense and intelligence mixing in unusual patterns of perception and thought” (Briggs, 2000: 167). In the idea of synesthesia, innovators supposedly possesses the ability to:

.... mix senses or types of intelligence in unusual ways from early childhood (when the differences between the senses and intelligences were not yet discriminated), or they learn, later, through feedback, to map one intelligence onto another.

Synesthesia probably keeps the creator in touch with the nuance level of perception. Nuance may even be the actual source of synesthesia thought, or vice versa (Briggs, 2000: 167).

7.26 Briggs uses Jean Love’s quote on Woolf ‘s experience as an example of synesthetic experience:

“.... highly pleasant emotions came with synesthetic sensation. That is, she was enormously and pleasurably excited when sights, sounds, and other sensations seemed unified with each other. She was elated when her inner sensations seemed to be fused with sensations coming from the world around her. She remembered being intensely aware of the diffusion and unity of all her sensations and emphasised that a sense of unity and wholeness was essential to her feeling of pleasure.... She associated the sense of wholeness with her writing” (Briggs, 2000: 167).

7.27 It is evident that the idea of ‘synesthesia’ shares similarities with Gardner’s ‘heightened attention’, Csikszentmihalyi’s ‘flow’ and Collins’ ‘emotional energy’:

Gardner’s ‘heightened attention’ says, Certain brain centres and neural transmitters are mobilised in these states, whether they are induced by the ingestion of substances, involvement in a hobby, or sheer control of will (ref. 3.20) infers the same meaning as:

Csikszentmihalyi’s ‘flow’: The optimal state of inner experience is one in which there is order in consciousness. This happens when psychic energy – or attention – is invested in realistic goals, and when skills match the opportunities for action. The pursuit of a goal brings order to awareness because a person must concentrate attention on the task at hand and momentarily forget everything else (ref. 3.21).
This again is the same as Collins’ emotional energy: A high degree of intersubjectivity, together with a high degree of emotional entrainment – through bodily synchronisation, mutual simulation / arousal of participants’ nervous systems – results in feelings of membership that are attached to cognitive symbols; and result also in the emotional energy of the individual participants, giving them feelings of confidence, enthusiasm, and desire for action.... These moments of high degree of ritual intensity are high points of experience (ref. 3.03).

Therefore:

= ‘Synesthesia’ (Briggs)

–The psychological circumstances when innovation occurs.

7.28 Following Csikszentmihalyi description of ‘flow’, ‘synesthesia’ is likewise not an existential or mystical hidden energy, but one that is overt as he is to qualify:

After all, mystical experiences are not necessary to account for the performance of a great violinist, or a great athlete, even though most of us could not even begin to approach their powers.... Like all virtuos, he must spend many years learning, and he must keep constantly in training. Being a specialist he cannot afford the time or the mental energy to do anything other than fine-tune his skill at manipulating inner experiences....

Because no branch of science deals with consciousness directly, there is no single accepted description of how it works. Many disciplines touch on it and thus provide peripheral accounts. Neuroscience, neuroanatomy, cognitive science, artificial intelligence, psychoanalysis, and phenomenology are some of the most directly relevant fields to choose from; however, trying to summarise their findings would result in an account similar to the descriptions the blind men gave of the elephant: each different, and each unrelated to the others. No doubt we shall continue to learn important things about consciousness from these disciplines, but in the meantime we are left with the task of providing a model that is grounded in fact, yet expressed simply enough so that anyone can make use of it (Csikszentmihalyi, 1990: 25).

7.29 Although ‘synesthesia’ is a mental condition, same or similar with Gardner’s ‘heightened attention’, Csikszentmihalyi’s ‘flow’ and Collin’s ‘emotional energy’, it however has an extension towards specialisation. It follows Gardner’s theory of ‘multiple intelligence’, and suggests that the innovator “experiences a synesthetic mix of intelligences that chemically alters the intelligence or talent that governs their creative field. To elucidate this, Briggs proposes as follows:

For example, in the creative field of literature, the talents required for writing lyrical poetry or short stories are not the same as those required for writing novels. In
novel writing dramatising characters demand a high degree of what Gardner calls the interpersonal and intrapersonal intelligences. That doesn’t mean the creator needs to be good at getting along with people or at living a well-balanced intrapsychic life – but a novelist does need a capacity for insights in these areas.... Woolf in fact possessed the kind of eidetic sense memory....

This illustrates another facet of the uniqueness of talents: Each creator embodies a unique constellation of ancillary intelligences which (s)he brings to bear on the field in which the principal creative talent is exercised (Briggs, 2000: 172).

7.30 Architectural innovations could often be traced to synesthietic influences. Biographers have speculatively traced Frank Lloyd Wright’s geometrical innovations to the synesthetic interest in music, the various fields of arts, Japanese prints, love of nature and the Froebel blocks he played with as a child:

His sister, Maginal recalls: He couldn’t leave the (the piano) alone, and he would experiment, moderating tempo and tone and bring out the expression called for.... He loved to show off his mastery of certain passages so that they sounded as if they were really being played by a virtuoso (Secrest, 1992: 135).

His sons Lloyd and John recall: Soon there were Japanese prints as well, which Lloyd helped unwrap, unbook, clean and mount.... He introduced them to music, poetry, art; he had a love of nature and a Welsh belief in spirits (Secrest, 1992: 136).

Since (Wright) always organised his floor plans using the intricate patterns he learned from the Froebel blocks – he once said that he saw the method’s possibilities anew when his own children began playing with them.... this gave his designs, however modest or ambitious, uniform dimensions and properly orchestrated axes and directions to his houses (Secrest, 1992: 168).

**Structure To Thought Crystallisation**

7.31 In providing a structure to the way language crystallises through the mind, Chomsky has also given an outline to the process of creative crystallisation. In his thesis, ‘Aspects Of The Theory Of Syntax’, 1965, Chomsky formulated the first model towards the mental crystallisation of language, which makes explicit mental structures:
The base component consists of two elements: the rewriting rules which, as before, indicate the structure of sequences of words; and the lexicon, to which are assigned all the syntactic, semantic, and phonological properties of the lexical items. The base grammar generates the initial phrase marker, or the ‘deep structure’.

The transformational component transforms this initial structure into other structures, the last of which is termed the ‘surface structure’. The base component and the transformational component constitute the generative part of the model.

Relevant to mental crystallisation towards innovation is the introduction of two interpretive components, the phonological component and the semantic component. They provide the possibilities of changing prevalent morphology. The semantic component however extends the concept of generative grammar into the domain of meaning.

Semantic interpretation, according to Chomsky is intentional, leading to ‘meaning’. It is sometimes termed as ‘semantic representation’ and considered as thematic (ref. Chomsky, 1979: 145). In the crystallisation of mental process, it is equivalent to ‘themata’. Item 7.07 states:

“From Briggs’ perspective, the mind is not tabula rasa, but is made up of themata (he also calls these thought-forms), which for some minds can produce real insights and not for others. He speculates that innovators have a higher commitment to the pursuit of their idiosyncratic ensembles of themes than their less creative colleagues”.

Semantic representation is required to account for legitimate reference, truth condition, speech acts, and so on (Chomsky, 1979: 148)

In Chomsky’s phonological interpretation, there are vowels and there are consonants (Chomsky, 1979: 155). It is about phonetic nuances in the linguistic sense. In the crystallisation of mental process, it is equivalent to ‘feeling tones’. Item 7.12 describes ‘feeling tones’ as: “emotional nuances that are logged in the brain through thoughts and memories. Gray suggests that even in the ordinary course of thought, emotional nuances are evoked even if no attention is paid to them”. Hence the equivalent mental structure for the crystallisation of mental process is something like the following:
Figure 7.33

Extended Standard Theory

7.34 The above picture is based on Chomsky’s 1965 thesis. It is obviously incomplete, as the picture has not arrived at any kind of form to be useful schemata for creative innovation. Chomsky calls the above model (Figure 7.31) as ‘Standard Theory’ of ‘Aspects of the Theory of Syntax’ (1965). In the 1970s Chomsky arrived at the ‘Extended Standard Theory’ wherein, surface structure plays a primary role in semantic interpretation whereas previously, semantic interpretation was arrived only from deep structure (see Figure 7.31).

7.35 What is essentially new in the ‘Extended Standard Theory’ is the concept of ‘trace’, which marks the position of an element that has been displaced by a transformation. Chomsky propositions that:

Within the framework of trace theory, one can even go further and say that all of the semantic representation, including thematic relations, can in a sense be derived from surface structure: to be sure, with a considerably enriched notion of ‘surface structure’, because the new surface structures contain traces, in terms of which thematic relations as specified by the base rules can be reconstructed (Chomsky, 1979: 164).

7.36 The above proposes a non-linear process of thought where traces, $t$, from surface structure, “in terms of which thematic relations as specified by the base rules can be reconstructed” (Chomsky, 1979: 164). Surface structure is close to the location of ‘logical form’ which can be expressed ostensively. Conversely, the trace is returned to surface structure as, “a sort of memory of deep structure recorded in the surface structure” (Chomsky, 1979: 165). Yet, from another point of view, inferring the flexibility of ‘trace’, Chomsky describes it as follows:

From another point of view the trace in this case can be considered as indicating the position of a variable bound by the kind of quantifier which is introduced into the logical form by rules applying to the surface structure. In this later version, the theory has roughly the following form: Deep structures are generated by the base component,
with their specific properties. Transformations form surface structures enriched by traces. The surface structures are associated by further rules to representations by sound (phonic representation) and meaning (logical form) (Chomsky, 1979: 165). The resulting schema proposed by Chomsky is as follows:

![Figure 7.36 (ref. Chomsky, 1979: 165)](image)

7.37 Based on Chomsky assertions in Items 7.35-6 above, the more correct is a two-way traffic of influences, the process is not a linear one:

![Figure 7.37](image)

7.38 On ‘logical form’ above, Chomsky does not have a specific notion for it and infers that it is variable:

This is an alternative model of language as a cognitive system. Remember that by the phrase ‘logical form’ I mean the partial representation of meaning that is determined by grammatical structure. Beyond that, we can study the interaction of this cognitive system with others, just as in physiology, once the heart has been identified, we can study its interaction with the other organs…. Choice of the term ‘logical form’ may or may not have been a wise terminological decision – the term is used in other ways. But terminology aside, there are interesting directions for research here…. Consequently, it becomes possible to obtain empirical evidence to answer the question: Which is the correct system of logic, the notation actually used in the mental representation? (Chomsky, 1979: 165-6).
7.39 The terminology, ‘deep structure’ above does not mean that it is something invariant: “…. people have apparently been misled by the word *deep* and confuse it with *invariant*. Once again, the only thing I claim to be ‘invariant’ is universal grammar” (Chomsky, 1979: 172). By making surface structure and deep structure variable, Chomsky encourages creativity within grammatical rules. Using creative work in science as analogy, Chomsky describes as follows:

*What you expect of a scientist is to discover new principles, new theories, even new modes of verification…. That won’t happen by learning a fixed procedure. The same is true of linguistics today. It is impossible to explain to someone the procedure he must apply in order to find the generative grammar of some language. What one looks forward to is the discovery of new phenomena that will show that the theories that have been proposed are false, that they must be changed – new questions that no one has thought of posing before, at least in a clear manner, new contributions to understanding, achieved perhaps with new ‘methods’. And finally, new ideas and new principles, which will reveal how limited, false, and superficial are the assumptions that we hold to be valid today* (Chomsky, 1979: 179).

**Deep Structure, Surface Structure Symmetry**

7.40 Chomsky’s ‘deep structure’ is not something that is mysterious. It merely is phonetic interpretation, which is captured by trace theory, and it “designate a precise stage in the derivation of a sentence” (ref. Chomsky, 1979: 173, 183). It is symmetrical to ‘surface structure’, which is semantic interpretation (ref. Chomsky, 1979: 173). To aid understanding, he offers the following diagram:

![Diagram of deep structure, intermediate structure, phonetic interpretation, superficial structure, and semantic interpretations](ref. Chomsky, 1979: 173)
Extended Standard Theory For Visual Innovation

7.41 Chomsky’s models for the structures that determine the mental process for the competency of language possibly could apply to other domains. He assumes that the mental requirements for visual competency, for example, would be similar to that for language:

*It is possible that the theory for face perception resembles a generative grammar. Just as in language, if you suppose that there are base structures and transformed structures, then one might imagine a model which might generate the possible human faces, and the transformations which would tell you what each face would look like from all angles…. the human perceptual system is not learned, but is rather an innate capacity, perhaps specifically related to language, though this is debated* (Chomsky, 1979: 52).

7.42 Using the Chomsky’s premise that the mental processes for language competency and visual competency are similar, Chomsky’s model for the Extended Standard Theory is adopted to structure the thought process for visual competency. The variability of the ‘Extended Standard Theory’ provides a further extension towards a structure for visual innovation.

The proviso for the structure is an assumption of rules, for without which according to Chomsky, “we have arbitrary and random behaviour, not creative acts” (Chomsky, 1975: 133).

The basis for Chomsky’s structure is, “a system of intellectual organisation, call it the ‘initial state’ of the mind (Chomsky, 1975: 137) – The base for both the linguistic and visual abilities are innate, according to Chomsky: “Thus the theory of faces (like language) might be innate, though fully functional only at a particular stage of development” (Chomsky, 1975: 145). The modified diagram for visual innovation adopted from Chomsky’s model would become something like this:

![Diagram of Visual Innovation Structure](image)

Figure 7.42
Creating Mental Contexts

7.43 Chomsky’s type of mental structure is purely cognitive, however in architecture, external factors needs to be addressed. Quoting Gruber, Briggs suggests that contextual conditions can be created mentally: “Gruber calls this pearl-making ‘constructing a point of view – the slow process by which the thinker constructs the mental circumstances of his own insights’ (Briggs, 2000: 261). Briggs further suggests that: “Building a point of view means creating a context that unites the creator’s amorphous vision with the outward requirements of the creative field and its audience” (Briggs, 2000: 262). For example, Briggs suggests that Van Gogh created his own context which energises his career as a painter:

(Van Gogh explains to his brother Theo) that at the moment he remains idle, but that was only because he lacked a way to convey to others what was in him. He lacked a context. His first step in creating such a context so that others would see what was in him (and so that he himself could truly see it) was to crystallise his energies toward a career as a painter (Briggs, 2000: 263).

7.44 Briggs suggests that generally ‘a long time’ is required before the creator’s context shifts enough for the magnum opus to emerge. Cultivating the ability to think oppositionally allows the innovator to transform contexts, break prevailing operating mindset to plumb the materials from new angles. According to Briggs this is what purportedly happens:

During the apprenticeship period, the different nuance themes (themata) link up and creators recognise the nuances of other works in the creative field as having both relevance and irrelevance to the personal creative purpose. Most importantly, throughout apprenticeship, creators develop what Einstein called the capacity for ‘self-criticism’ (Briggs, 2000: 264).

7.45 The ‘long time’ that Briggs suggests is equivalent to Gardner’s ten-year rule – a requirement of concentrated work before the magnum opus emerges (ref. Gardner, 2004: 139). Boden’s estimate is 12 years, using Mozart as example:

Mozart needed twelve years of concentrated practice before he could compose a major work, and much the same seems to be true of other composers. In short, a person needs time, and enormous effort to amass mental structures and to explore their potential (Boden, 2004: 270).

In the architectural field, Palladio had taken twelve formative years (ref. Ackerman, 1966: 31) and Wright had taken twelve years from his first break from classicism to the first Prairie House (ref. McCarter, 1977: 35). (See also Items 5.50, 5.52, 5.56)

7.46 What is achieved through the shift of mental context, according to Briggs’ study of Conrad’s work, is the ‘inward voice that decides’, wherein:
The whole movement to evolve that inward voice entails linking feedback loops which join talent and vision, with the problem or material the creator is focussing on, with insight strategies, and with the tradition of the creative field. These interlocking loops, at a certain point (indicated in some creators by a ‘crystallising’ moment) interact to form what system theorists call a ‘self-organising structure’ (Briggs, 2000: 265).

7.47 The shift of mental context is continuous, evolving from one magnum opus to the next. Towards the end, anything can happen – the vision may be as different in the early stages from its later stages:

Vision evolves, the creator evolves, the magnum opus leads to a new magnum opus – otherwise the creative life dies. The completion of a work, the acceptance of a work by its intended audience, changes in the creator’s personal life, historical changes – all have an effect on the further development of the creative enterprise…. Anything may happen. The vision may be as different in the early stages from the later stages (Briggs, 2000: 268).

7.48 The prevailing mental context is thus precursor to the degree of the innovator’s creativity. This is thus situated early in the mental crystallisation toward creativity.

The only other area that needs to be included in a final model for the mental process leading to innovation is ‘synesthesia’, which is the “sense and intelligence mixing in unusual patterns of perception and thought” (Briggs, 2000: 167). ‘Synesthesia’ is thus located later in the process. ‘Synesthesia’ necessarily interacts with nuances.

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**Figure 7.48**

**House X4**
7.49 House X4 in Damansara, Kuala Lumpur carries several aspects that could be taken as analogies to the issues propounded in the crystallisation of the mental process.

‘Themata’ – The first of which is ‘themata’. It contains cognitive ideas about geometry, lines and construction, where in an abstract manner, these are seen as “guiding visionary elements” (ref. Item 7.06). They are taken as analogies of ‘thought-forms’ – which are “idiosyncratic ensembles of themes” (ref. Item 7.07).

‘Nuances’ - Artistic nuances (ref. Item 7.09) comes with the way in which the lines are constructed in tandem with the plan geometry of the site. The walls of the upper floors of the house are also inflected both vertically and horizontally to achieve geometric nuances.

‘Feeling tones’ – these are emotional nuances logged in the brain (ref. Item 7.12). The masses of the house are constructed to evoke emotive responses as they flare in varying directions. The way in which the walls are inflected creates variances in tonality as light hits the walls, also creating emotive responses to the observer. Through the complexity of the geometries, the house appears to contain multiple “sensory fragments, each impregnated with emotional nuances” (ref. Briggs, 2000: 54).

‘Implicate order’ – where, “lone images are transferred into an organic whole rather than a succession of images” (ref. Item 7.21). The house is seen as a whole system created from parts.

‘Synesthesia’ – this is the mixing of senses and intelligence, where creativity is described as “sense and intelligence mixing in unusual patterns of perception and thought” (ref. 7.25). In attitude, the house is at least this.

7.50 House X4 is a continuum of House X3 (see Section 5), carrying similar themes and visual grammar. In particular, they share the theme of formal inflection, particular in the main blocks, where the walls are inflected horizontally and vertically with the intention of creative emotive responses as light changes with each inflection. However, compared to House X3, House X4 has a more extensive programme, requiring a process of crystallisation rather than say, a simpler evolving computational process, which is more applicable to House X3.

As a result, House X4 is more generative, an endless process which is expected to continue until the house is completed.
EIGHT:
POSTMODERN IMAGINATION (ANTAGONIST)

Literature Review

Deleuze, Difference And Repetition, 2004

Supporting Literature:
Benjamin, ed., Philosophy And Architecture, 1990
Papadakis, ed., The New Moderns and The Supermoderns, 1990
Danto, After The End Of Art, 1997
Leach, ed., Rethinking Architecture, 1997
Kearney, Poetics Of Imagination, 1998
Wilson, Consilence, 1998
Tan, ed., Asian Architects 2, 2001
Lim, Alternatives In Translation, 2001
Kwinter, Architectures Of Time, 2002
Von Foerster & Poerksen, Understanding Systems, 2002
Lim, Asian Ethical Urbanism, 2005
Lim, Contesting Singapore Urban Future, 2006

Preamble

8.01 Contemporary urban culture is regarded by cultural critics as ‘postmodern’, in a phrase coined by Barthes: it is ‘civilisation of the image’. Baudrillard’s fascination with the modern American expansive landscape sums up the postmodern narrative of the contemporary metropolis:

Why is LA, why are the desert so fascinating? It is because you are delivered from all depth there – a brilliant, mobile, superficial neutrality, a challenge to meaning and profundity, a challenge to nature and culture, an outer hyperspace. With no origin, no reference-points.

What is arresting here is the absence of all these things – both the absence of architecture in the cities, which are nothing but long tracking shots of signals, and the dizzying absence of emotion and the character in the faces and bodies (Leach, ed: 223).

8.02 Baudrillard’s postmodernist culture is devoid of any fixed point to an origin, where the image appears to refer to other images, where the postmodern image circulates in a seemingly endless performances of imitation. Kearney describes this as ‘parody’:

The post-modern image circulates in a seemingly endless play of imitation. Each image becomes a parody of another which precedes it.... and so on. The idea of an
'authentic' image is subverted – as is evident in the practice of pastiche which informs contemporary forms of representation (Kearney, 1998: 178).

8.03 Although the term ‘post-modern’ was first used in 1938, current understanding of postmodernism is however traced to its reference to architecture in the nineteen seventies, particularly when Charles Jencks argued in favour of radical eclecticism with pseudo-historical overtones over the utopianism of international modernism. In literary criticisms in the nineteen seventies and the nineteen eighties, the word ‘post-modern’ began to used for a body of text that did not necessitate particular plots or characters but were instead reflection of writing itself. Many of the literature were works of earlier decades. Speaking about a literary movement, *nouveau roman*, Cuddon were to say that:

> Plot, action, narrative, ideas, the delineation and analysis of character.... such things had little or no place in a novel. On the contrary, a novel should be a form of ‘re-istentialism’ – to use Paul Jenning’s word. It should be about things; an individual version and vision of things; a systematised and analytical record of objects....

Such a view of the function of the novel is not entirely new. Long before. Huysmans had suggested what might be done about objects and how the novel might be depersonalised; Kafka had shown that the conventional methods of depicting character were not essential; James Joyce had demonstrated that plot was dispensable; and Louis-Ferdinand Celine, in several novels, but especially ‘Voyage au bout de la nuit’ (1932), had written of themes which later preoccupied the existentialists and the hodjas (mentors) of the cult of the absurd, and especially those of the Theatre of the Absurd (www.calvertonschool.org/waldspurger/pages/nouveau.html).

8.04 In some instances, writing became a reflection of the very process of writing, where text can disintegrate into an endless self-mirroring of: “the impossibility of authorial creation. Fiction swallows its own tail” (Kearney, 1998: 179). Samuel Beckett’s ‘Imagination Dead Imagining’ exemplifies this. Taking an excerpt from the writing for example:

> No trace anywhere of life, you say, pah, no difficulty there, imagination not dead yet, yes, dead, good, imagination dead imagining. Islands, waters, azure, verdure, one glimpse and vanished, endlessly, vomit. Till all white in the whiteness the rotunda. No way in, go in, measure. Diameter three feet, three feet from ground to summit of the vault. Two diameters at right angles AB CD divide the white ground into two semicircles ACB BDA. Lying on the ground two white bodies, each in its semicircle.... (www.olimu.com/Readings/ImaginationDeadImagine.htm).

8.05 In the visual arts, the postmodern movement is manifested by the erosion of the modernist belief in the artist as an elite avant-garde ‘committed to the salvation of mankind’; instead the distinction between high art and popular culture disappears. Warhol’s spoof seriographs of Marilyn Monroe, Jackie Kennedy, Coca-Cola bottles and ‘Brillo Box’ exemplify this. Danto describes the postmodern attitude art as follows:
It is part the sense of no longer belonging to a great narrative, registering itself in our consciousness somewhere between uneasiness and exhilaration, that marks the historical sensibility of the present…. helps to define the acute difference, of which I think that awareness only began to emerge in the mid-1970’s, between modern and contemporary art. It is characteristic of contemporaneity – but not of modernity – that it should have begun insidiously, without slogan or logo, without anyone being greatly aware that it had happened (Danto, 1997: 5).

8.06 Hence, by appearance, there is nothing that separates the difference between art and non-art. Andy Warhol’s ‘Brillo Box’ is frequently used to elucidate this parody. Danto says this for example:

To use my favourite example, nothing need mark the difference, outwardly, between Andy Warhol’s ‘Brillo Box’ and the Brillo boxes in the supermarket. And conceptual art demonstrated that there need not even be a palpable visual object for something to be a work of visual art. That meant that you could no longer teach the meaning of art by example. It meant that as far as appearances are concerned, anything could be a work of art, and it meant that if you were going to find out what art was, you had to turn from sense experience to thought (Danto, 1997: 13).

8.07 Danto’s proposition ‘to turn from sense experience to thought’ meant that appreciation of art (and architecture) in the postmodern context has to be an intellectual one with philosophical overtones. With its philosophical overtones, it then follows that postmodern imagination necessarily engages the following and asks the following questions:

1) ‘The endless performances of imitation as parody’ (ref. Item 8.02). How does innovation come in?

2) It no longer belongs to the ‘great narrative’ (ref. Item 8.05). How can innovation overcome this?

3) The idea of ‘authentic’ image is subverted (ref. Item 8.02, 8.03, 8.04, 8.06). What kind of innovation results with this?

4) The subversion of plot and character (ref. Item 8.03). What kind of innovation results with this?

5) ‘Endless self-mirroring’. The elevation of process (ref. Item 8.04). What is the order of innovation?

Difference And Repetition

8.08 Deleuze’s ‘Difference and Repetition’, first published in French in 1968, predicted Baudrillard’s engagement of the “seemingly endless play of imitation, where each image becomes a parody of another which precedes it” (ref. Item 8.02). Deleuze
regards repetition in art as paradoxical and extend the paradox even to the generalities of natural law, which in the end is subject to change:

The repetition of a work of art is like a singularity without a concept, and it is not by chance that a poem must be learned by heart. The head is the organ of exchange, but the heart is the amorous organ of repetition. (It is true that repetition also concerns the head, but precisely because it is its terror or paradox.) Pius Servien rightly distinguished two languages: the language of science, dominated by the symbol of equality, in which every term is irreplaceable and can be and can only be repeated. Repetition can always be ‘represented’ as extreme resemblance or perfect equivalence, but the fact that one can pass by degrees from one thing to another does not prevent their being different in kind.

On the other hand, generality belongs to the order of laws. However, law determines only the resemblance of the subjects ruled by it, along with their equivalence to terms which it designates. Far from grounding repetition, law shows, rather, how repetition would remain impossible for pure subjects of law-particulars. It condemns them to change. As an empty form of difference, an invariable form of variation, a law compels its subjects to illustrate it only at the cost of their own change. No doubt there are as many constants as variables among the terms designated by laws, and as many permanences and perseverations as there are fluxes and variations in nature. However, a perseveration is still not a repetition. The constants of one law are in turn variables of a more general law, just as the hardest rock becomes soft and fluid matter on the geological scale of millions of years (Deleuze, 2004: 2).

8.09 To Deleuze, in art as in natural order of things, repetition is unusual: he regard it as abnormal and calls it a ‘transgression’ of the norm:

If repetition is possible, it is due to miracle rather than to law. It is against the law: against the similar form and the equivalent content of law. If repetition can be found, even in nature, it is in the name of a power which affirms itself against the law, which works underneath laws, perhaps superior to laws. If repetition exists, it expresses at once a singularity opposed to the general, a universality opposed to the particular, a distinction opposed to the ordinary, an instantaneity opposed to the to variation and an eternity opposed to the permanence. In every respect, repetition is a transgression. It puts law into question, it denounces its nominal or general character in favour of a more profound and artistic reality (Deleuze, 2004: 3).

8.10 Deleuze then went on to speak about relationship between generalities, and that experimentation (or the act of creativity) is “a matter of substituting one order of generality for another”:

In these conditions, phenomena necessarily appear as equal to a certain quantitative relation between chosen factors. Experimentation is thus a matter of substituting one order of generality for another; an order of equality for an order of resemblance (Deleuze, 2004: 3).
To Deleuze, it is also the case that the theory of difference refers to a conceptual difference, in other words, difference between generalities:

According to the reciprocal principle of sufficient reason, there is always one concept per particular thing. According to the reciprocal principle of the identity of indiscernibles, there is one and only one thing per concept. Together, these principles expound a theory of difference as conceptual difference, or develop the account of representation as mediation (Deleuze, 2004: 13).

Deleuze regards ‘contradiction’ as a superior form of difference compared to ‘contrariety’ and also, generic difference is greater than specific. Specific difference itself is greatest only in a relative sense:

Return to the expression ‘the greatest difference’. It is now evident that the specific difference is the greatest only in an entirely relative sense. Absolutely speaking, contradiction is greater than contrariety – and above all generic difference is greater than specific (Deleuze, 2004: 40).

If we were to regard contradiction to prevailing norm as an attitude of innovation, then it is a greater form of difference than just being contrary, seen by Deleuze as merely a mild form of opposition.

Innovation infers contradiction, and it also infers change. Following Hume, Deleuze infers that change first occurs in the mind – that is, change is firstly a mental act, an act of the imagination. Change as a mental act is possible because of the presence of memory that is contained in a ‘temporal space’ in the mind. He first places the argument with reference to repetition:

In considering repetition in the object, we remain within the conditions which make possible the idea of repetition. But in considering the change in the subject, we are already beyond these conditions, confronting the general form of difference. The ideal constitution of repetition thus implies a kind of retroactive movement between these two limits. It is woven between the two. This is the movement which Hume so profoundly analyses when he shows that the cases contracted or grounded in the imagination remain no less distinct in the memory or in the understanding. Not that we return to the state of matter which produces one case only when the other has disappeared. Rather, on the basis of the qualitative impression in the imagination, memory reconstitutes the particular cases as distinct, conserving them in its own ‘temporal space’…. In other words, the active syntheses of memory and understanding are superimposed upon and supported by the passive synthesis of the imagination (Deleuze, 2004: 91-2).

Deriving its force from repetition and memory, Deleuze regards that the new is ‘not new’ at all – it is instead, a ‘difference’, doing away with recognition and evoking the powers of a completely ‘other model’. In other words, to arrive at the ‘new’, the ‘other model’ must eventually supersede repetition and memory:
The new, with its power of beginning and beginning again, remains forever new, just as the established was always established from the outset, even if a certain amount of empirical time was necessary for this to be recognised. What becomes established with the new is precisely not the new. For the new – in other words, difference – calls forth forces in thought which are not the forces of recognition, today or tomorrow, but the powers of a completely other model, from an unrecognised and unrecognisable ‘terra incognita’ (Deleuze, 2004: 172).

8.15 Anything that is new is attained through the interrogative, rather than say, through ‘participating form’, and to Deleuze, this always takes place within the framework of a community, that is, within a context. Deleuze framed the arguments around sense, or common sense:

Sense so defined is only a vapour which plays at the limits of things and words. Sense appears here as the outcome of the most logical effort, but as Ineffectual, a sterile incorporeal deprived of its generative power....

Is anything gained by expressing sense in the interrogative rather than the infinitive or participating form.... That is why – in accordance with etymology – interrogation always takes place within the framework of a community: to interrogate implies not only a common sense but a good sense, a distribution of knowledge and of the given with respect to empirical consciousness in accordance with their situations, their points of views, their positions and their skills, in such a way that a given consciousness is supposed to know already what the other does not.... (Deleuze, 2004: 195).

8.16 Deleuze suggests that there is psychological tension or ‘exchange’ between intensity and aesthetic ideas and suggests that there is a confrontational relationship between the two, and that the relationship between the two is asymmetrical, wherein “the power of intensity (depth) is grounded in the potentiality of the Idea”:

A whole flow of exchange occurs between intensity and Ideas, as though between two corresponding figures of difference. Ideas are problematic or ‘perplexed’ virtual multiplicities, made up of relations between differential elements. Intensities are implicated multiplicities, ‘implexes’, made up of relations between asymmetrical elements which direct the course of the actualisation of Ideas and determine the cases of solutions for the problems. The aesthetic of intensities thus develops each of its moments in correspondence with the dialectic of Ideas: the power of intensity (depth) is grounded in the potentiality of the Idea (Deleuze, 2004: 305).

8.17 Architecture is an actualisation of ideas. Deleuze propositions that “intensity is the determinant in the process of actualisation”. If we were to regard architecture as ‘extensive series’, it would be something that is actualised by differentiation through intensity. Intensity would also dramatise the architecture. The proposition culminates by saying that, “intensity creates the qualities and extensities in which it explicates itself, because these qualities and extensities do not in any way
How is the idea determined to incarnate itself in differenciated qualities and differenciated extensities? What determines the relations coexisting within the Idea to differenciate themselves in qualities and extensities? The answer lies precisely in the intensive qualities. Intensity is the determinant in the process of actualisation. It is intensity which dramatises. It is intensity which is immediately expressed in the basic spatio-temporal dynamisms and determines an ‘indistinct’ differential relation in the idea to incarnate itself in a distinct quality and a distinguished extensity. In this way, after a fashion (but, as we shall see, only after a fashion), the movement and the categories of differenciation reproduce those of explication. We speak of differenciation in relation to the Idea which is actualised. We speak of explication in relation to the intensity which ‘develops’ and which, precisely, determines the movement of actualisation. However, it remains literally true that intensity creates the qualities and extensities do not in any way resemble the ideal relations which are actualised within them: differenciation implies the creation of the lines along which it operates (Deleuze, 2004: 306-7).

8.18 In the postmodern world, Deleuze regards the sites of simulacra to be the centres of creativity, hence of innovation – they are the locations for the actualisation of ideas. The potential of the simulacra lies in their propensity toward divergence, decentring, differences, and chaos, with plenty of communication, making them the fecund ground for the actualisation of ideas and the distribution of them. In the spirit of little narratives in postmodernity, Deleuze also suggests that while each of the series is, constituted by differences, and communicates with the others through differences, no series enjoy a privilege over others:

Systems of simulacra affirm divergence and decentring: the only unity, the only convergence of all the series, is an informal chaos in which they are all included. No series enjoys a privilege over others, none possesses the identity of a model, none the resemblance of a copy. None is either opposed or analogous to another. Each is constituted by differences, and communicates with the others through differences of differences (Deleuze, 2004: 348).

8.19 With deference to the postmodern propensity toward little narratives, Deleuze puts forward this attitude as essential for the actualisation of ideas. Deleuze’s equivalent of the little narratives is, “a multiplicity constituted of different elements” and that there is a three-dimensional quality about it, consisting of “elements, relations and singularities”:

We saw how these systems were sites for the actualisation of Ideas. An Idea, in this sense, is neither one nor multiple, but a multiplicity constituted of different elements, differential relations between those elements, and singularities corresponding to those relations. These three dimensions, elements, relations and singularities, constitute the three aspects of multiple reason: determinability or the principle of quantitability, and complete determination or the principle of potentiality (Deleuze, 2004: 348).
8.20 Under the postmodern condition, Ideas can be ‘distinct’ and ‘clear’; but the two aspects are disproportionate. To Deleuze, being ‘distinct’ allows for differentiation between Ideas and non-ideas, however due to the chaotic, multifaceted condition of postmodernism, ‘clarity’ is disproportionate less than ‘distinct’. He describes ‘distinct’ as a differentiation, and ‘clear’ as a differenciation:

If we call the state of a completely differentiated Idea ‘distinct’, and the forms of quantitative and qualitative differenciation ‘clear’, then we must reject the rule of proportionality between the clear and the distinct: Ideas as they exist in themselves are distinct-obscur. Opposed to the clear-and-distinct of Apollonian representation, Ideas are Dionysian, existing in an obscure zone which they themselves preserve and maintain, in an indifferenciation which is nevertheless perfectly differentiated, in a pre-individuality which is nevertheless singular: the obscure zone of an intoxication which will never be calmed: the distinct-obscur as the double colour with which philosophy paints the world, with all the forces of a differential consciousness (Deleuze, 2004: 350).

**Deleuze’s Idea Of Postmodern Creativity**

8.21 Although Ideas always have to do with ‘variations of relations’, Deleuze proposes that the ultimate origin of Ideas is traced back to a ‘solitary and divine game’, in other words, to Deleuze’s mind, creativity has a solipsistic beginning, and touching on a precept of the later Wittgenstein, it has also to do with opposing prevailing human games:

For where do ideas come from, with their variations of relations and their distributions of singularities? Here, too, we follow the path to the bend at which ‘reason’ plunges into the beyond. The ultimate origin was always assimilated to a solitary and divine game. There are several ways to play, however, and collective and human games do not resemble this solitary divine game. Several characteristics allow us to oppose the human and the ideal as two aspects of game (Deleuze, 2004: 352-3).

8.22 Deleuze’s world of “a multiplicity constituted of different elements….. consisting of elements, relations and singularities” (ref. Item 8.19), which is also chaotic and multifaceted, where ‘clarity’ is disproportionately less than ‘distinct’ (ref. Item 8.20) is considered in the postmodernist context as ‘deterministic chaos’ (Kwinter, 2002: 12). The characteristics of ‘deterministic chaos’ are nonlinearity and indeterminacy. According to Kwinter, the cultural and political implications of this are:

It is as if today one were forced into a new type of intellectual and cultural warfare, forced to accept the mobile and shifting nature of the phenomena that make up our social and political world, and by this same token, forced to discover within this slippery ‘glacis’ of largely indistinct swells and flows, all the ledges, footholds, friction points – in short, all the subtle asperities that would permit us to navigate, and negotiate life, within it (Kwinter, 2002: 12).

8.23 There is a dynamic morphogenesis about Deleuze’s three dimensionality of “elements, relations and singularities”, where geometries and patterns are not static, but
appear over time. The study of phenomena would not be carried out in analytical isolation, but would instead be embedded within what Kwinter describes as, “a rich and unstable milieu of multiple communicating forces and influences” (Kwinter, 2002: 13) – the postmodern manifestation of Deleuze’s ‘singularities’. Deleuze’s singularity needs to be read with time.

Essentiality Of Process

8.24 With this attitude, architecture is not defined by how it appears, but by process, or by the practices. Hence, the “unitariness of the object vanishes, replaced by relations that are smaller than the objects” (ref. Kwinter, 2002: 14) – that is, micro-architecture or ‘weak architecture’. Kwinter describes the nature of the process as follows:

Just as the meaning of a sentence differs depending on who is speaking, to whom it is addressed, the time and place in which it is uttered, the infinitely complex interplay of will, desire, and systems of legitimisation, as well as on these same conditions applied to the referents of each and every element of the sentence, so any proper understanding of architecture must also confront its character as an illocutionary event, or at the very least as an element inseparable from and in constant interface with the world of force, will, action, and history (Kwinter, 2002: 14).

Little Narratives And Open System

8.25 Although Kwinter propagates a modernist alternative in architecture, the world in which he locates himself is one of little narratives, a postmodern one. The little narrative world is one of indeterminacy, where nothing is considered as absolute and every element is capable of reorganisation, redistribution and revaluation. From this perspective, pedagogical systems become open and receptive:

For here, all systems are open systems; they are labile and suffused with temporality; they are sensitive and chaotic in the sense that they are creative and adaptive – they ceaselessly undergo change, produce novelty; they transform or transmit unactualised potentials to a new milieu, in turn giving rise to a whole new series of potentials to be actualised or not. Open systems are not only open to ‘outside’, but to wild becoming itself – the outside of all outsides (Kwinter, 2002: 48).

Character Of Postmodern Urbanity

8.26 In concrete urban terms, the character of the spaces of indeterminacy are chance-driven, unpredictable and chaotic. William Lim sees this as positive and desirable. It is a character he continues to promote for overly controlled cities like Singapore. He sees it as essential for innovation to happen and for art to flourish. He describes the character of these spaces as follows:

Spaces of indeterminacy are anchored in the postmodern. They are pluralistic and exhibit tolerance of differences and complexities. They may exist as substantial areas, such as in the western districts of Taipei and the Geylang district in Singapore or as in-between spaces – cracks and gaps create by the new urban projects and major
infrastructure development, an example being disused land under highway. These life theatres offer potential environments from which to promote contemporary and cutting-edge intellectual, artistic, cultural and sociological discourses.

The spatial configurations of these spaces often teem with open displays of sexual sensuality and often become favourite hangouts of the avant-garde and the art community. Desire becomes a facilitator for inspirations and the narratives. The dialectics of art and desire are at once articulate, irrational and mystical. Together, they break the mould of expected normalcy, heighten the sense of desire within the city and provide greater texture to everyday life (Lim, 2005: 24-5).

8.27 Having concretised the character of the postmodern city in his 2005 thesis, Lim offers a prescription to achieve creative urban environment in a postmodern Asian city in a later thesis in 2006. He propositions that a creative postmodern Asian city is to have the following ingredients:

1) “Celebrating chaos”, wherein: “Vibrant urban activities continue unabated, notwithstanding dramatic physical changes and disruption to the immediate environment” (Lim, 2006: 35-6); and quoting Hou Hanru, Lim agrees with Hou that, “all these complex systems have acquired the ability to bring order and chaos into a special kind of balance…. the edge of chaos is where life has enough stability to sustain itself and enough creativity to deserve the name of life” (Lim, 2006: 36).

2) “Efficiency not enough”. Lim regards efficiency with disdain, particularly with reference to the prevailing Singaporean work ethos, which is based on the Eurocentric modernist model that leaves creativity behind. He offers another perspective, where:

In Asian architecture and urbanism, there is much to learn from non-western culturally-rooted urbanism. The exciting chaos, the incredible flexibility and complex spatial order have yet to be understood and creatively applied. An expertise such as the design and construction of generic high-rise buildings that is simply replicating and improving what has already been done before is not enough. To put in place exciting design concepts and urban spaces that can redirect priority from just efficiency to innovation is a challenging agenda (Lim, 2006: 36-7).

3) “Glocality”. It is a terminology that combines the terms ‘global’ and ‘local’, and when applied to architecture and urbanism, it embraces: “the external nature of the global and the internal tendencies of the local” (Lim, 2006: 37. With reference to the Singapore context, Lim reasons that:

In the successful straddling of these two polarities, the fluid frontier of architecture and urbanism will continued to be applied, tested and modified. Their complexity can be pushed even further into a realm where
even subconscious applications can be identified where the architect’s deep understanding of Chinese spatial characteristics can be incorporated, and deliberate interaction over a time dimension between history and contemporariness can be explored (Lim, 2006: 38).

4) “Overcoming risk aversion”. Again, with reference to the Singaporean ethos which has an aversion to risk and a propensity towards tried and tested regulatory practises, Lim contests that Shanghai offers a better model instead. By abandoning any aversion to risk, Shanghai has become an energetic, vibrant and exciting city, where innovation can take place:

*If no risks are taken, there can be no real progress and no real change, merely a mindless repetition and revival of tried and tested methods that may have worked in the past but are increasingly growing obsolete....*

*By abandoning any aversion to risk, urban development of Shanghai has in the past two decades soars beyond all limitations. It is now a very exciting city, so full of energy and vibrancy that it has taken the world by storm* (Lim, 2006: 38-9).

5) “Beyond Florida’s Vision”. By making the statement, Lim asks to go beyond Richard Florida’s argument for tolerance for the development of a creative culture and asks that other concerns be addressed such as: “the contesting concerns of race, religion and increasing income gap as well as the contemporary challenges of ecological sustainability, progressive activism and citizen participation” (Lim, 2006: 40).

He also asks for the active support of artistic rebellion and for those at the artistic fringe. His rationale being that:

*A creative culture is all embracing. It is a state of mind and an attitude to living. Its vibrant life-force is continuously being reflected particularly in all aspects of art creation from art, media, literature, creative writing, architecture and urbanism as well as critical discourses and cultural studies* (Lim, 2006: 40).

6) “Culture of architecture and urbanism”. Lim uses van Schaik’s arguments in ‘Mastering Architecture’ (2004) to express his concern that practise must not end in competency, which eventually fades into irrelevance (ref. Lim, 2006: 41-2). His prescription is a crossing of boundaries between architecture and urbanism and other arts, and to discard ‘mainstream norm’ (with reference to Singapore):

*Over the past two decades, it has become apparent to me when discussing architecture and urbanism that we cannot refrain from crossing disciplines. Scope and complexity of the discourse widen under the*
overarching category known as cultural studies, which encompasses the critical analysis of not only the social sciences, architecture and urbanism, but also art, literature, and various other cultural media. In adopting this approach, we must discard or modify much of the present theories and practices of mainstream norm of yesteryears (Lim, 2006: 42).

7) “Embracing the contemporary”. In the acceptance of fringe groups, contemporary culture “embraces multiple identities and deep commitments to universal humanism, generosity and concern for others”, and by recasting Eurocentric modernity, “Identity has undergone similar re-conceptualisation whereby the multi-layering of fuzzy hybridised identity needs to reflect complex fusions of nation-state, ethnicity, language and religion including secularism” (Lim, 2006: 43). The embrace of these aspects is regarded as essential for Singapore to ‘move ahead’ (ref. Lim, 2006: 44).

Premises For Postmodern Creativity

8.28 Above all, William Lim sets the premises for postmodern creativity to happen. He outlines the need for interaction between interested groups, and a rebellious spirit, a high degree of tolerance and the acceptance of controversy and criticism:

Creativity is not always an individual act. It can be manifested through intense interaction between small groups of individuals. The creative impulse can be destructive and painful, or exciting and joyful such as in the inspiration of artistic creation and architectural imagining.

To be rebelliously creative is a high-risk undertaking. The process is very stressful and often irrational…. For creative environment to exist, there must be a high degree of tolerance and acceptance of controversy and criticism. Every effort must be made to provide a complexity of intellectual space and opportunities for our creative individuals to actively contribute and participate in the process (Lim, 2006: 34).

Heterarchy System

8.29 The horizontal process advocated by William Lim does away with the traditional top-down process in the management of happenings, and it empowers fringe players in a the pursuit of innovation. Elsewhere in epistemological research, von Foerster, in taking cues from earlier work by McCulloch, discusses about a loop-back process, based on a ‘heterarchy’ of values. Instead of spreading an organisation along a plane, as in a horizontal process, von Foerster’s topological organisation is like a ring, just like the sensory motor circuit. Von Foerster describes the character of heterarchical organisation as follows:

The appropriate geometry is that of a ring (torus), in which the sensory motor circuit runs across the surface around the outer circuit of the ring, while the inhibitory circuits run alongside the periphery of the cross section. I’d like to point out that the word heterarchy stems from the Greek words ‘heteros’ (the other, neighbour) and
‘archein’ (to rule). Thus heterarchy means to rule of the other. It is no longer the holy one who rules from on high. There is no longer any point in talking about absolute values. Everyone is involved in ruling. Ruling becomes circular (von Foerster, 2002: 85-6).

8.30 McCulloch’s builds a ‘sensomotory’ circuit via a ‘reflex arc’. Von Foerster describes the neurological operation, which becomes a metaphor for appropriate management structure, and also for mental organisation:

A stimulus produces a response that leads to a motor activity, which in turn leads to another stimulus. What we have here is a sensory motor circuit, a loop consisting of seeing and acting, acting and seeing, which leads to a stability of action. But this is not all. As McCulloch mentioned, a theory of valuation must contain the possibility of choice. Yet the word ‘choice’ implies that two or more potential acts are incompatible. That means that the act that takes place has to change all of the incompatible acts. In other words, in the case of two complete sensorimotor circuits, which each determine one behaviour, the possibility must exist that one will block the other incompatible one. This scheme can be expanded as you choose and it shows that the organisation of a hierarchy can be drawn on a plane. The circularity of the value normally does not emerge until the inhibitors form a closed circle. The topology of this organisation can no longer be drawn on a plane (von Foerster, 2002: 85).

8.31 McCulloch propositions that a theory of valuation must contain the possibility for choice, and that the word ‘choice’ implies that ‘two or more potential acts are incompatible’. The diagram below shows the presence of inhibitors where, “the possibility must exist that one will block the other incompatible one”. In the diagram, the inhibiting link of the inner circuit to the outer circuit shows a closure which McCulloch calls ‘diallels’ (ref. von Foerster, 2002: 85).

8.32 Von Foerster recommends the heterarchy system for management where each employee in a company is a manager in his or her own area of expertise. He considers this to be psychological release as “it is always the other person who makes the decisions”. Every person hence has a turn at making decisions, which appears to be a democratic process, where, “everyone rules together for each other”. It is a circular structure with inhibiting links that enable decisions to be made (ref. von Foerster, 2002: 86-8).

8.33 Equally, the horizontal and chaotic process advocated by William Lim need eventually become a heterarchical, loop-back system whenever decisions are to be made. Particularly in Items 8.27.5-6 and Item 8.28 where a condition for a postmodern creative environment are:

– An all embracing culture (8.27.5)
– Life-force continually reflected in all aspects of art creation (art, media, literature, creative writing, architecture and urbanism, along with creative discourses and cultural studies) (8.27.5)
– Creativity is manifested through intense interaction between interested groups (8.28)
– Rebellious spirit a high degree of tolerance and the acceptance of controversy and criticism (8.28).

The above are conditions for controlled chaos, which can run a course without concrete decisions being arrived at. A loop-back with inhibiting links is hence necessary to mitigate the dissipation of creative energies.

**Self-Organisation**

8.34 Referring to the work of engineers W. A. Clark and B. G. Farley in the 1950’s, von Foerster proposes that the loop-back heterarchical system organises itself (‘self-organisation’). Von Foerster explains that Clark and Farley constructed models of binary networks in which the lights go on and off. Von Foerster explains the result of the experiment: “After a phase of randomly going on and off in no detectable order, the lights began to blink in a strange dance-like rhythm. If you inserted a little perturbation a different blinking pattern developed” (von Foerster, 2002: 90-1). Von Foerster however cautions that the principle of ‘self-organisation’ cannot be a completely closed system and that the context has to be considered:

_I also felt it was important to show that the idea of self-organisation, which assume a system that is thermodynamically completely closed is unacceptable. I warned that the word ‘self’ should not be taken too seriously. Nor should we only look at what we presume to be an isolated system that is no longer perceived in its environmental context. I pointed out that this environment functions as a supplier of energy. The system needs it in order to keep on organising itself (von Foerster, 2002: 91)._

8.35 Wilson offers the psychological equivalent ‘self-organisation’, where he describes consciousness a virtual world composed of scenarios consisting of multiple streams of activities that self-organises and change:

_Consciousness is the virtual world composed by the scenarios. There is not even a Cartesian theatre.... no single locus of the brain where the scenarios are played out in coherent form. Instead there are interlacing patterns of neural activity within and among particular sites throughout the forebrain.... There is no single stream of consciousness in which all information is brought together by an executive ego. There are instead multiple stream of activity, some of which contribute momentarily to conscious thought and then phase out. Consciousness is the massive coupled aggregates of such participating circuits. The mind is a self-organising republic of scenarios that individually germinate, grow, evolve, disappear, and occasionally linger to spawn additional thought and physical activity (Wilson, 1998: 120)._

**Ethics Of Postmodernism**

8.36 In an unrelated but parallel observation, Wilson traces the mental beginnings of the postmodernist attitude leading onto an observation of postmodern
culture that echoes Lim’s observation. Wilson questions the ethics of postmodenism, for its relativism:

*Reality, (the postmodernists) propose, is a state constructed by the mind, not perceived by it. In the most extravagant version of this constructivism, there is no ‘real’ reality, no objective truths external to mental activity, only prevailing versions disseminated by ruling social groups. Nor can ethics be firmly grounded, given that each society creates its own codes for the benefit of the same oppressive forces.*

*If these premises are correct, it follows that one culture is as good as any other in the expression of truth and morality, each in its own special way. Political multiculturalism is justified; each ethnic group and sexual preference in the community has equal validity. And, more than mere tolerance, it deserves communal support and mandated representation in educational agendas, not because it has general importance to society but because it exists. That is – again – if the premises are correct. And they must be correct, say the promoters, because to suggest otherwise is bigotry (Wilson, 1998: 44).*

8.37 As a scientist, Wilson is perturbed by the theoretical extremities of postmodernism, particularly those that promote irreality such as found in the deconstruction technique of literary criticism, where each author’s meaning is unique to himself. When devoid of outside context, Wilson considers Derrida’s form of postmodernism as a promoter of ‘lies’:

*That is what Jacques Derrida, the creator of deconstruction, meant when he stated the formula Il ‘n’y a pas de hors-texte’ (There is nothing outside the text). At least, that is what I think he meant, after reading him, his defenders, and his critics with some care. If the radical postmodernist premise is correct, we can never be sure that is what he meant. Conversely, if that is what he meant, it is not certain we are obliged to consider his arguments further. This puzzle, which I am inclined to set aside as the ‘Derrida paradox’, is similar to the Cretan paradox (a Cretan says ‘All Cretans are liars’).... (Wilson, 1998: 45).*

8.38 As an illustration to what Wilson had meant, Daniel Libeskind deliberately writes in a manner which is not intended to communicate. His essay, ‘Fishing From the Pavement’ (1990) is a jumbled collection of words is intended to exemplify a Deconstruction essay on architecture. A random extract of the essay for example reads:

*Erstwhile theophany: discharge from a roving beast's eye, beauty criticizing the colossus. Audacious faeries made of nuclear chromosomes form into threads, split lengthwise, associate with Don Juan's ovoid..... Enamoured with the medically depilated reflection races - are occidentals tired of animal mortar? Is a pneumatic NT. Built for sliding down Reason's annulated cadaver? (Benjamin, ed., 1990: 51).*
In his architecture, Libeskind’s avoidance of formal systems devises tangle, anguish shapes that are intended to defy formal logic. But they are merely formal games as his buildings follow standard architectural preconditions such as economics, rational structural systems, internal environmental comfort, materiality, security, urban logic and circulation. Even in the way that light is skilfully manipulated shows compliance to atmospheric delight, the approach is no different from the work of a traditionally recognised architectural master like Louis Kahn.

8.39 When Libeskind was asked to describe his real works of architecture, like all architects dealing with systems of reality, he likewise places his descriptions into categories. In describing his architecture in his essay, ‘Between the Lines’ (1990a), for the Jewish Extension to the German Museum in Berlin, he categorized his descriptions as follows: ‘Urban Design Concept’; ‘Organization of the Building and the Required Functions’; ‘Link to the Existing Building’; ‘Structure, Materials and Facade Design’; ‘Concept for Open Spaces Parking’. Under ‘Structure, Materials and Facade Design’, his description is as follows:

**Structure:** Pre-cast and cast-in-place concrete elements, constituting a type with variable inclination.

**Cladding:** Various cladding materials, including metal, mosaics, and glass. Special emphasis on light quality and lumination control.

**Facade Design:** Richly textured, visually de-naturalized, luminous surface, creating tension between the hand and the eye (Papadakis, ed., 1990: 66).

The description is precise and clear with the intention to communicate, completely opposed to his essay: ‘Fishing from the Pavement’, both of which were written in the same year, 1990.

8.40 Wilson tries to rationalise the postmodern alternative by suggesting that it is another way of thinking, whereupon disorder is viewed in order to create order, and those who upon encountering order try to protect it by creating disorder. He reasons that, “The tension between the two is what drives learning forward. It lifts us upward through a zigzagging trajectory of progress.... order always wins, because – simply – that is the way the real world works” (Wilson, 1998: 47).

8.41 Wilsons however concedes a place for postmodernism in intelligentsia for the following reasons:

Their ideas are like sparks from firework explosions that travel away in all directions, devoid of following energy, soon to wink out in the dimensionless dark. Yet a few will endure long enough and cast light on unexpected subjects. That is one reason to think well of postmodernism, even if it menaces rational thought. Another is the relief it affords those who have chosen not to encumber themselves with a scientific education. Another is the small industry it has created within philosophy and literary studies. Still another, the one that counts the most, is the underlying critique of scholarship it
provides. We will always need postmodernists or their rebellious equivalents (Wilson, 1998: 47).

**Gallery Evason Hotel**

8.42 The design of the Gallery Evason Hotel (2000), by William Lim Associates and TANGGUANBEE Architects was developed over a ten-year period in the 1990’s. From the 1980’s the two offices were experimenting with their own views of postmodernism, whereby Tang Guan Bee demonstrated his ideas through practice alone, while William Lim was expressing his thoughts through projects, lectures and in publications. Other than the resulting spatial and physical form, which is recognisably postmodern in style, the collaboration between the two practices incorporates a pluralistic and open process, described by Leong Teng Wui and Andrew Lee Siew Ming as follows:

Thus, while it is tempting to differentiate the individual firm and personalities’ contributions to the projects, it cannot be so easily reduced or attributed because the project defies such easy reduction. Both practices and their cast of characters brought with them their strengths, bias, idiosyncrasies and differences. Indeed, the conceptualisation and execution of the building would arguably be ‘impoverished’ without this strategic collaboration. This strategic alliance represents a transgressive, pluralistic practice which are inherently more strategic and able to exploit better the opportunities for innovation in an increasing complex urban environment (Tan, ed., 2001)

8.43 The ‘pluralistic’ way of collaboration is reflected in an architecture which is hybrid in formal expression, and appropriate for its time and in a part of Singapore which carries an air of pluralism and openness in both the mix of architecture and Bohemian lifestyle that now emerges in the Robertson Quay area. All along the riverfront are places of Bohemian gathering, many of which in converted colonial period buildings together with new exuberant architecture. Many of the converted buildings were earlier neglected.

**From Mohamed Sultan Road To Clarke Quay**

8.44 Nearby is the Mohamed Sultan Road, which was described by William Lim in 2001 as a ‘postmodern phenomenon’ (ref. Lim, 2001: 154). It was once a row of dilapidated double-storey shops and houses, which for no specific reason, spontaneously became favoured by young socialites as a place to meet and party. Lim describes the phenomenon as follows:

Mohamed Sultan Road used to comprise of a row of dilapidated, low-rise terrace shops and houses. Almost overnight, it seems to have morphed into the most exciting nightlife district in the city. Buildings have been restored and transformed. Bars, dance clubs and restaurants have swamped the area, which booms with the sound of ringing cash registers (Lim, 2001: 155).

8.45 In 2001, the ‘phenomenon’ at Sultan Mohamed Road offers a view of the character of a postmodern city. Lim views it as particularly exciting in Singapore as the
‘phenomenon’ went against the grain of normal development, which was nearly always planned:

Uncharacteristically, this urban regeneration had been spontaneous and was unplanned for by the authorities. The invasion of the district by savvy businessmen and trendy clubbers had been independent of official guidelines, campaigns and incentives that are so much a part of Singapore’s culture. At the same time, the State has responded carefully to this spectacle of energy and initiative. The police have moved in to monitor the situation while planners seem content to allow the place to develop, for now, along this trajectory (Lim, 2001: 155).

It became a ‘celebration of chaos’ as Lim was to later describe as a characteristic of a postmodern city (ref. Item 8.27.1).

8.46 However, with the completion of the chain of pods and umbrella structures at the nearby Clarke Quay by Will Alsop in 2006, nightlife shifted from Mohamed Sultan Road to nearby Clarke Quay – after-hours activity seems to have found a new equilibrium. Alsop’s large chain of umbrella structures which hovers over the rehabilitated old shophouses seems like an alien entity that has descended to engulf the part of the city, giving it a transient meaning, as the structures seems as removable as easily as they have been transplanted into position. This appears to be a manifestation of the postmodern world as described by Barthes, Baudrillard and Kearney. Kearney suggests that in the postmodern world, “Each image becomes a parody of another which precedes it…. and so on. The idea of the ‘authentic’ image is subverted – as is evident in the practice of the pastiche which informs contemporary forms of representation” (Kearney, 1998: 178).

8.47 The bohemian life in both Mohamed Sultan Road and Clarke Quay echoes a world of indeterminacy, where nothing is considered as absolute and where every element is capable of reorganisation, redistribution and revaluation – the system becomes open and receptive:

For here, all systems are open systems; they are labile and suffused with temporality; they are sensitive and chaotic in the sense that they are creative and adaptive – they ceaselessly undergo change, produce novelty; they transform or transmit unactualised potentials to a new milieu, in turn giving rise to a whole new series of potentials to be actualised or not. Open systems are not only open to ‘outside’, but to wild becoming itself – the outside of all outsides (Kwinter, 2002: 48).

8.48 William Lim describes such an urban situation as something desirable to have for facilitating inspiration, for the arts to flourish or simply, a locus of life. This kind of environment opposes control and encourages chance and unpredictability, a mystical realm of innovation:

The spatial configurations of these spaces often teem with open displays of sexual sensuality and often become favourite hangouts of the avant-garde and the art
community. Desire becomes a facilitator for inspirations and the narratives. The
dialectics of art and desire are at once articulate, irrational and mystical. Together, they
break the mould of expected normalcy, heighten the sense of desire within the city and
provide greater texture to everyday life (Lim, 2005: 24-5).

8.49 These are also places of intense consumption, intermingled with a myriad
of conversations and hedonism. In Singapore, the intense consumption of goods,
beverages, desires and ideas in Clarke Quay seems like a rebellion against the staid
routine of normality. With reference to similar conditions in parts of Paris, Baudrillard
calls this ‘a condition of critical mass’:

It is here that a condition of critical mass develops, surpassing that of
merchandise become hypermerchandise, or culture become hyperculture – a critical
mass that is no longer tied to specific exchanges or to determinate needs but to a kind of
total universe of signals; through this integrated circuits impulses travel everywhere in a
ceaseless transit of selections, readings, references, marks, decodings. Like consumer
objects elsewhere, the cultural objects here have no other purpose than that of
maintaining one in a state of integrated mass, of transistorised flux, of magnitised
molecularity (Leach, ed.: 1997: 214).
NINE:
DISCUSSION
Reference Literature:
Li, Power And Virtue, 2007
Weisberg, Creativity, 2006
van Schaik, Mastering Architecture, 2005
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Shermer, The Borderlands Of Science, 2001
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Chomsky, Language And Responsibility, 1979
Chomsky, Reflections On Language, 1975

Preamble

9.01 Having interrogated the various literatures that support and oppose the hypothesis, “Architectural innovation is ostensively meaningful and validated through context, and launched from the mastery of Language Games and Form of Life”, and having both sides of the arguments on record, this section on Discussion begins with sieving the points of arguments through a series of questions and answers. The purpose of the sieve is to distil the points of arguments.

9.02 The arguments for both sides at first seem equally powerful and formidable, and it seems also that the dialectic arguments can continue perpetually without drawing a conclusion. A conclusion is however desirous, but it is also important to the integrity of the thesis that the discussion is not steered by preconception but arrived at heuristically. This meant that the discussion is required to have a framework. For the sake of relevance, the framework of the discussion will be its relationship to the practise of architecture.
### Distillation – Questions And Answers

The questions below are arranged in the order of provisional priority in order to create a flow.

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|                            | Innovators are made (3.10, 3.11, 3.12, |
|                            | 3.13, 3.14, 3.16, 3.17, 3.24)          |
|                            | **Phenomenological Imagination**       |
|                            | Innovators are born – dependent on mass |
|                            | of sensory fields (4.47, 4.48)          |
|                            | **Computational Imagination**          |
|                            | Innovators are made (5.02, 5.13, 5.20, |
|                            | 5.28, 5.29, 5.30, 5.31, 5.32, 5.33, |
|                            | 5.34, 5.35, 5.44, 5.45, 5.46, 5.50, |
|                            | 5.51, 5.52, 5.53)                      |
|                            | **Hermeneutical Imagination**          |
|                            | (Not discussed)                        |
|                            | **Crystallisation of Mental Process**  |
|                            | Innovators are made – takes ‘long time |
|                            | to develop’ (7.54, 7.56)               |
|                            | **Postmodern Imagination**             |
|                            | (Not discussed)                        |
3a Is architectural innovation an individual quest?
3b Or must it be a collective pursuit?

4a Can it be born out of isolation?
4b Or must it be an extension of a domain?

5a Is the structure of architectural innovation ostensive?
5b Or is it necessarily intrinsic?
| 6a | Is there a structure to architectural innovation? | Intrinsic (overcome by context) (6.13, 6.14, 6.16) |
| 6b | Or is it the result of architectural insight? | Crystallisation of Mental Process Intrinsic (7.10, 7.11, 7.12, 7.14) |
| 7a | Is architectural innovation possible outside of context? | Postmodern Imagination Ostensive (8.26, 8.27) |
| 7b | Is it valid outside of context? | Existential Imagination Insight (2.05, 2.28, 2.33) |
|     |     | **IR Theory** Structure through network (3.02, 3.03) |
|     |     | **Phenomenological Imagination** Adumbrative insight – changing reflection (4.02, 4.07, 4.20, 4.22, 4.23) |
|     |     | **Computational Imagination** Structure – conceptual spaces (5.03). P-creativity, H-creativity (5.14, 5.15) Structure (5.54) |
|     |     | **Hermeneutical Imagination** Structure (6.04) |
|     |     | **Crystallisation of Mental Process** Insight (7.15, 7.16, 7.17, 7.24) Also has structure (7.51, 7.57) |
|     |     | **Postmodern Imagination** Horizontal structure, loop-back process (8.29, 8.30, 8.32, 8.33) |
| 8a | Is it possible without mastering rules and activity? | Existential Imagination Need context (2.09, 2.15, 2.22, 2.34, 2.35) |
|     |     | **IR Theory** Need context (3.01, 3.02, 3.15) |
|     |     | **Phenomenological Imagination** Need context – as medium of perception (4.12, 4.34, 4.36, 4.37, 4.38, 4.42, 4.43) |
|     |     | **Computational Imagination** Having context (5.14, 5.41) |
|     |     | **Hermeneutical Imagination** Need context (6.07, 6.09, 6.10, 6.11, 6.26, 6.27, 6.28, 6.29, 6.33, 6.34) |
|     |     | **Crystallisation of Mental Process** Need context (7.52) |
|     |     | **Postmodern Imagination** Need context (8.15) |

| 8a | Is it possible without mastering rules and activity? | Existential Imagination Experience (2.09, 2.10, 2.11, 2.20, 2.28) |
8b Can it be a result of just experience and intuition?

IR Theory

Phenomenological Imagination
Intention over experience (4.02, 4.05, 4.13, 4.14, 4.15, 4.16, 4.18)

Computational Imagination
Mastering rules (5.16, 5.17, 5.23)

Hermeneutical Imagination
Experience (6.15, 6.35, 6.37)

Crystallisation of Mental Process
Experience and intuition (7.08, 7.09, 7.10, 7.25, 7.26)

Postmodern Imagination
Deterministic chaos, indeterminacy (8.22, 8.25, 8.26)

9a Is there a trait towards innovation?

9b Or is there none identifiable?

Existential Imagination
Ability to imagine (2.24). Unbound to a system (2.25). Apprehension of the unreal (2.29). Alternating between real and unreal (2.32)

IR Theory
Break from mentor (3.16). High productive output (3.17). Personality (3.19). Flow state (3.21, 3.22, 3.23)

Phenomenological Imagination
Mental shifts between imagination and perception (4.21, 4.42)

Computational Imagination
Mental mapping (5.22). Change generative system (5.24). Explore rules better (5.48, 5.51). Extensive knowledge (5.53)

Hermeneutical Imagination
Differentiation (6.21)

Crystallisation of Mental Process
Having thematic ideas (7.04). Mental intensity and continuation (7.22). Synesthesia (7.25, 7.26, 7.30). Transform context mentally (7.53)

Postmodern Imagination
Rebellious spirit (8.28)
9.04 The summary of results for the questions and answers is condensed to only salient issues and are arranged in the same order as above but simplified. ‘Context’ is the most consensual where full weightage is given, and ‘traits’ is the least consensual, where no weightage is given, but is useful for general discussion.

**Purpose:**
The answers to the purposes of innovation are varied from section to section. However, there appear to be a general shared accent, which is the desire to break barriers. All the section discusses the desire to break mental barriers, except that IR Theory discusses the desire to break social and cultural barriers. IR Theory provided the most powerful arguments for the purpose of innovation (9.03 – 1). Also in the framework of practice, IR Theory is most pertinent.

Weightage that the purposes of innovation are explained in IR Theory: **8/10**.

**Born Or Made:**
On the question as to whether innovators are born or made, the force of arguments lean towards the answer that innovators are made. However, although the weight of argument favours this, it is not without doubt (9.03 – 2).

The evidence is not compelling, but evidence for practice leans towards the notion that innovators are **made**: **7/10**.

**Individual Quest Or Collective Pursuit:**
On the question as to whether architectural innovation is an individual quest or a collective pursuit, the force of arguments from the protagonists and the antagonists are evenly balanced. It could either be one or the other (9.03 – 3).

Both sides of the arguments could apply to practice, however, IR Theory influences sways the weightage towards **collective pursuit: 6/10**

**Isolation Or Extension Of A Domain:**
On the question as to whether architectural innovation is born out of isolation or an extension of a domain, there appears to be a slight weight advantage toward an extension of a domain, particularly when framed in the context of practice (9.03 – 4).

Weightage toward innovation being an **extension of a domain: 7/10**.

**Ostensive Or Intrinsic:**
On the question as to whether the structure of architectural innovation is ostensive or intrinsic, both are equal in the literature review (9.03 – 5). However, everyday practice requires that the process of innovation is not hidden.

Hence, there is a slight edge towards **ostensivity: 6/10**.

**Structure:**
The next question was to ask whether there was a structure to architectural innovation after all, or was it the result of insight. Based on the literature review, the answers are quite even between having some kind of structure and having an insight. The answers imply that there is both (9.03 – 6).

This requires further investigation: meanwhile, the presence of **structure in innovation is 5/10**.

**Context:**
Based on the literature review above, one particular consensus was arrived at: Architectural innovation is not possible outside of context and it is validated within a context (ref. 9.03 – 7).

There is consensus all round that context is essential to enable and to validate architectural innovation. Weightage toward the presence of **context: 10/10**.

**The Mastering Of Rules, Intuition, Or Experience:**
Except for the emphasis in favour of deterministic chaos under Postmodern Imagination, all the other sections shares the general premise that innovation is arrived at either through experience, or through the mastering of rules, with nuances toward intention. With a view toward practice, this suggests that innovation must be developed and worked upon over time (ref. 9.03 – 8).

Hence, weightage toward the presence of **rules and experience in innovation: 9/10**.

**Traits:**
The most varied answers came with question on the traits leading toward innovation. Each section appears to have different answers. While in general most of the sections provided answers to do with mental abilities, IR Theory and Postmodern Imagination provided answers to do with social and cultural reasons (9.03 – 9).

All the sections of literature review have a trait with regard to innovation, but the traits are not shared. Hence it would not be relevant to give weightage to this.

9.05 The discovery could be further summarised as follows:

<table>
<thead>
<tr>
<th>Items</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose of innovation – based on IR Theory</td>
<td>8/10</td>
</tr>
<tr>
<td>Innovators are made</td>
<td>7/10</td>
</tr>
<tr>
<td>IR Theory influences: it is a collective pursuit</td>
<td>6/10</td>
</tr>
</tbody>
</table>
Innovation is an extension of domain 7/10
Process of innovation is ostensive 6/10
Presence of structure in innovation 5/10
Requirement of context 10/10
Mastery of rules and experience 9/10

Whilst the structure for innovation is not particularly conclusive based on the literature review, all the other evidence leanings toward the following: That architectural innovation is purpose led; innovators are made; it is a collective pursuit; it is an extension of domain, it is ostensive; there is a definite requirement for context and mastery of rules and experience. The following investigations probe further the structure of innovation.

Science Filter To Bacon

9.06 The latest studies on creativity, say, by Shermer (2001) and Weisberg (2006) have swayed from the illusory toward the pedagogical viewpoints – the studies have purpose of utility. The equivalence in architecture is a viewpoint that has usefulness in practice. Using a commonsensical approach, Shermer applies a knowledge filter toward creativity and argues that: “Most of the time the knowledge filter works quite well. We can tell the difference between truth and illusion, and when we can’t there is usually a good reason for it – a magician is trying to fool us, or we choose to be fooled. Think of the knowledge filter as a mental module that screens incoming ideas for their veracity. It works by comparing new facts and ideas with what we already know from previous experience” (Shermer, 2001: 39).

9.07 For the sake of credence, society too builds its own knowledge filter. The television audience has come to realise that there is always another perspective to most issues, and it has become a standard practise in television discourse to have point-counterpoint to most assertions. Science have a built-in peer review system, where in order to get a paper published it must be refereed by colleagues where errors and unsubstantiated assumptions are weeded out.

9.08 To Shermer, the best knowledge filter is science as every assertion made can be tested. He went on to provide an example of how he went on to test the claims of a psychic healer, Dr. Kam Yuen. By simple method of statistics, it was concluded that Dr. Yuen did no better than random chance (Shermer, 2001: 41-46).

9.09 In architecture, the prevailing viewpoint is that assertions are tested in practice, where ultimately, buildings become real, tangible edifices, which can be used, experienced and critiqued. The process of designing and document a work of architecture and, to have it constructed is tested all the way by the requirements of reality. Indeed, traditionally, an architect is taken for granted as someone who puts an idea into use. For example, Kepler who supported the new and radical Copernican heliocentric model of the
universe, observed after a time spent with Brahe: “He lacks only the architect who would put it all to use” (Shermer, 2001: 129).

9.10 Also new ideas do not emerge from the imagination alone, but is an assemblage of previous ideas. Darwin, for example, acknowledges Francis Bacon’s (1561-1626) development of inductive reasoning: “I worked on true Baconian principles, and without any theory collected facts on the wholesale scale” (Shermer, 2001: 210). He also credits Thomas Malthus for contributing a significant step toward the development of the theory of natural selection: “I happened to read for amusement ‘Malthus on Population’, and being well prepared to appreciate the struggle for existence which everywhere goes on from long-continued observation of the habits of animals and plants, it at once struck me that under the circumstances favourable variations would tend to be destroyed. The result of this would be the formation of a new species” (Shermer, 2001: 210).

Bacon’s Method Of Induction

9.11 The Baconian principles that Darwin speaks about are in essence a method of science, generically known as induction, wherein he repudiates the syllogistic method and defines his alternative procedures as one “which by slow and faithful toil gathers information from things and brings it into understanding” (ref. http://plato.stanford.edu/entries/francis-bacon/).

9.12 When Li provided the narrative to explain architectural and intellectual change in England between the years 1660-1730 (ref: Li, 2007), he used a number of key scholars as markers that strung the narrative together. At the forefront was Francis Bacon. Li suggested that Bacon was perhaps the single most influential individual in the Royal Society and through it; the Baconian framework became fundamentally important to seventeenth-century English thought (ref. Li, 2007: 23). With regard to architectural change, Li regarded the Baconian framework as one that leaned toward utility, or practice:

Within the province off human reason, Bacon’s view was that the credibility of knowledge is inextricably linked to its use. Once the structure and content of human knowledge is crucially aligned with utility, humanity would be immeasurably empowered.... The ‘truth’ of knowledge comes precisely from this empowerment (Li, 2007: 24-5).

9.13 Li then outlines Bacon’s five aims of knowledge that leads to change or innovation, all of which are normal in terms of architectural practice:

The object of knowledge should be, first, the understanding of physical reality, not fantasies of the mind, nor the ‘instruments’ of thought such as words. Second, the nature of knowledge is progressive and cumulative, not eternal and unchanging.... Third, the method of gaining access to the new knowledge lies in observation and documentation.... Fourth, knowledge is not a matter of single individual working in isolation, but a form of social cooperation....
Last, the final aim of knowledge must lie in utility, and not in the satisfaction of curiosity, nor in the entertainment of the mind, nor in the pursuit of ornament and reputation (Li, 2007: 26-7).

9.14 According to Li, the main characteristic of the Baconian approach toward innovation has to do with the utilisation of sensory perception. In the seventeenth century, this approach was regarded as ‘modern’ – an attitude that is opposed to the application of canons of earlier periods, particularly so with regard to art and architecture, a result that appeals to utility and power:

What Francis Bacon had begun, with his elaborate strategy to embrace both faith and reason, was the possibility of a profound intellectual change. While avoiding issues of faith, Bacon took on the authorities of the ancients, and developed a way of constructing knowledge based on sensory perception that appealed to utility and power. Bacon’s ideas indeed inspired a popular imagination: the seventeenth century had become ‘modern’ (Li, 2007: 45).

9.15 In predicting a characteristic of modernity, Bacon did away with the notion of beauty as a *priory* to art and architecture. He instead articulated an intellectual context for the problem of beauty in the early seventeenth century. Li further narrates:

In The Advancement of Learning, Bacon considered the ancient techniques of representations of reality – poesy – as ‘feigned history’ in various ‘styles’ in that it consisted of imitations of life which were adapted to satisfy the imagination of the mind and to reinforce morality…. In his essay on beauty, Bacon claimed that ‘Beauty is as summer fruits, which are easy to corrupt, and cannot last’ (Li, 2007: 57-8).

9.16 Li postulated that: “(Christopher) Wren’s crucial interpretation of this intellectual conviction in usefulness in terms of positive and customary beauties set an important framework for English architecture through his virtual monopoly of important public projects for over forty years (1670s-1710s). The royal society through its frequent discussions on issues such as architectural antiquity and principles of masonry construction, provided a crucial intellectual and institutional setting for new development in English architecture” (Li, 2007: 54). Li also mentioned Robert Hooke, Nicholas Hawksmoor and John Vanbrugh and according to Li:

Seen together, their works brought substances to the political agendas of propagating courtly magnificence and divine mysteries, and explored architectural designs inspired by the settings and forms of early Christian worship, military metaphors and the irreverent delight of the Restoration theatre (Li, 2007: 59).

9.17 However, through the observation of their architecture, Wren, Hawksmoor and Vanbrugh did not extricate themselves from the styles of the past, and Li’s thesis seems contradictory to Bacon’ requirement of utility as a priory as utility was secondary to formal beauty in their architecture. Although their architecture had formal innovation,
past doctrines, particular classical doctrines were still continued. The ‘feigned history’ in various ‘styles’ in architecture was to not to be broken until the late nineteenth century.

**Bacon’s Ideas Manifested Through Heterogeneous Influences**

9.18 Bacon’s new way of looking at art and architecture places utility above the doctrine of beauty, and by inference, also of harmony and proportion, which were pre-eminent in architecture before the seventeenth century (ref. Wittkower, 1949; March, 1998). However, the dominance of classical representation was not overcome until the late nineteenth century and early twentieth century when modern communications, particularly in print and communication graphics impacted architecture, the arts and other design fields such as product and furniture design. The print media also impacted the way paintings were abstracted, which in turn influenced the aesthetics of architecture in the twentieth century. For example, Art Nouveau graphics influenced Charles Rennie Mackintosh (1868-1928) and Frank Lloyd Wright (1867-1959) in the late nineteenth century (ref. Meggs, 1998: 210-1). Art Nouveau graphics was also an early influence on Peter Behrens (1868-1940); but he subsequently developed a more objective graphic style at the turn of the century. Through Peter Behrens, the print media indirectly influenced Walter Gropius, Mies van der Rohe, Le Corbusier and Adolf Meyer who were all apprenticed to Behrens at different times during the first decade of the twentieth century (ref. Meggs, 1998: 225, 229).

9.19 Besset was also to postulate that early twentieth century (second and third decades) painting and sculpture had influenced architecture and, it was during that time that art became intellectual: when for the first time intellectual content replaced ‘beauty’ that Bacon had advocated. Speaking about Le Corbusier, Besset stated:

*With Neo-Plasticism and Suprematism on the other side on the other side and Constructivism on the other, the position of Le Corbusier in this debate was an original and, for all his peremptory manner of diction, a highly differentiated one. In common with Mondrian and Malevich, as well as Gleizes and Juan Gris, he shared the demand for severity in the organisation of space – the need to retain, beyond the accidental, only the mathematical element – and went on to postulate the purely spiritual vocation of art in the following words: “Modern painting has abandoned the wall, the tapestry, the decorative urn, and has withdrawn into a frame. Nurtured, replete with facts, far removed from the distracting influence of figuration, it lends itself to meditation. Art no longer tells a tale, it makes one think”* (Besset, 1987: 50).

**Heterogeneous Linkages Between Architecture And The Arts**

9.20 Throughout history, architecture, the building crafts and the arts were seen in close proximity with one another for the obvious reason that architecture, until lately was regarded as just one of both the arts and building craft. Gadamer, for instance describes architecture as the ‘greatest and most distinguished’ form of art (ref. Leach, ed. 1997: 134). Equally, during the Renaissance, artists regarded architecture as a privileged extension of their normal artistic vocations. For example, famously, the dome of St. Peter’s in Rome, built in 1564, was designed by the sculptor and painter Michelangelo
Buonarotti, and in 1667, Gian Lorenzo Bernini, also a sculptor and painter, designed the piazza in front of the cathedral.

9.21 The link between architecture and music is also common. Frank Lloyd Wright is known to have regularly played the piano to take his mind off the vicissitudes of life (ref. Secrest, 1992: 135-6), and the musicality of his architectural spaces is apparent. Comparably, Nick Mason, Roger Waters and Rick Wright were studying architecture at the Regent Street Polytechnic in London at the time they formed the band Pink Floyd in the 1960’s. The influence of their architectural background became most evident in ‘The Wall’ but was also evident in the construction of their elaborate structures, which they often worked with Mark Fisher. Their music also seems carefully constructed, like works of architecture. Even the visuals of their album covers are as carefully constructed as works of architecture.

9.22 Wright was at first influenced by Art Nouveau, but sometime at around the turn of the nineteenth and twentieth century, he evolved the curvilinear Art Nouveau into a rectilinear spatial depiction, together with the introduction of horizontal planes. It is thought that Wright became influenced by Japanese prints: he was an avid collector of Japanese prints, which were popular at the time, but he also saw Japanese architecture as a model of harmonious proportion and visual poetry. Indeed in the Japanese measurement of spaces based on the tatami mat, there seemed to be a mathematical repetition in the creation of spaces. Equally, Wright used repetition to create symmetry in spatial organisation. Moreover, he extended and expanded his vision into other artistic realms that included furniture, graphics, fabrics, wallpapers, and stained-glass windows (ref. Meggs, 1998: 211).

9.23 Throughout his career as an architect Wright was to periodically turn his hand to graphic design. He built his first house for his friend, William H. Winslow; but before that, he had collaborated with Winslow to produce a handcrafted book, The House Beautiful. In the end only 90 copies were printed, using a handpress method on handmade paper. Wright’s border designs were executed in a delicate freehand line drawing, which inscribed a lacy pattern of stylised plant form. The lines had a clear English Art Nouveau influence, particularly that of Aubrey Beardsley graphic work (ref. Meggs, 1998: 211).

9.24 Another architect who was influenced by Beardsley and the English Art Nouveau was Charles Rennie Mackintosh (1868-1928). Mackintosh was part of a group of Scottish collaborators known in artistic circles as ‘The Four’. Which also comprised of J. Herbert McNair, and sisters Margaret and Frances Macdonald. The four were first known for their print illustrations, which were distinguished by their stylised and symbolic imagery derived from bold, simple lines on planes of flat colours. The spiritual nuances of their works were probably influenced by the Macdonald sisters who held strong religious beliefs with mystical ideas. The effeminate, melancholic and disquiet visual nuance is fairly overt. The influence of their style on Wright and the Vienna Secession in Austria is apparent although they seemed to have little influence in Britain itself (ref. Meggs, 1998: 211).
9.25  Mackintosh was to bring the style into his architectural designs and extend them into other associated areas like decorative objects, chairs and interiors. Just like Wright, Mackintosh applied the style to the total environment. In contrast to the usually busy interiors at the time, Mackintosh had the interior walls white and bathed in light and, uncluttered except for a few carefully placed ornaments. He used rising vertical lines as the unifying theme, the rising lines often had subtle curves at the end, tempered with horizontal lines at the junction. He also often included tall slivers of rectangles coupled with ovals, circles and arcs as counterpoint. These seemed to be the visual signature of his work. Like Wright, his furniture and interior are detailed to be compatible with the whole. The rising lines of the ‘Mackintosh chair’ exemplify this (ref. Meggs, 1998: 213).

Behrens’ Significant Influences

9.26  The movement that most scholars know about today, which exemplifies the unity of the arts is the ‘Bauhaus’. It is an art school in Germany that was started in 1919 through the merger of two previous art schools. The full name for the ‘Bauhaus’ is Das Staatliches Bauhaus (The State Home for Building). The first director of the Bauhaus was Walter Gropius (1883-1969), already a renowned pioneer of modern architecture when he was appointed as director. Significantly, his mentor was Peter Behrens a German contemporary of Wright and Mackintosh, all of whom were born at around the same time, 1867, 1868. Like Wright and Mackintosh, Behrens was an architect who was also proficient in the printed arts. Behrens started his career as an artist who painted poor people and industrial landscape. He was to later embrace the Jugendstil movement – the German equivalent to the art nouveau movement. Indeed, one of Jugendstil iconic images is Behren’s The Kiss, which is a six-color woodcut, and controversial for its androgynous imagery (ref. Meggs, 1998: 205).

9.27  Behrens was to switch back and forth between graphic arts, product design and architecture. He pioneered new typographic forms for the new industrial era and thinking like an architect, was among the first to use a grid system to structure space in his graphic designs. He also designed products like streetlamps and teapots for mass consumption using an industrial-like aesthetics, considered as innovative at the time. His work for the German company, AEG, is considered the first comprehensive visual identification program, commonly known today as branding (ref. Meggs, 1998: 223). Behrens rigour was continued to architecture, where he pioneered non-load-bearing glass curtain walls spanning the spaces between structural supports. The association of this method of construction with modern architecture still continues today – not a lot has changed since the first decade of the twentieth century.

9.28  Well before the emergence of the Bauhaus in 1919 in Weimer, Behrens was to pioneer an art course in Dusseldorf in 1903, which combined architecture, graphic and interior design together as a preparatory course of study to precede specific studies. His intention was to raise perceptive skills through artistic and spontaneous form making rather than through mechanical studies. Significantly, the preparatory courses were precursors for the Bauhaus own preparatory course, and even more significantly, two of Behren’s apprentices, Walter Gropius and Mies van der Rohe served as directors of the Bauhaus and were themselves icons of the modern movement (ref. Meggs, 1998: 229).
9.29 However, Behrens later became involved with the German version of the arts and craft movement known as the *Werkbund*, which unlike the English version of the arts and craft movement, tried to reconcile with the machine. With the involvement, his work became less spontaneous and more objective, later descending into a form of neoclassicism, moving away from the both the art nouveau and the arts and craft to draw inspiration from the aesthetics of ancient Greece and Rome. It was thought that the muscular, objective Greek and Roman geometry could make ornament universal and impersonal, satisfying the nature of mass production (ref. Meggs, 1998: 227). In pioneering the attitude of modern product design, he sought neutrality and standardisation for the machine to manufacture. His forms were simple, devoid of decoration with all the connotations of social class association stripped away. His work pointed to a new aesthetic sensibility, which was to mature in the 1920s into the Modern Movement. Behrens pointed to a rational approach to the arts deemed appropriate for the new industrial age, where form was to follow function.

**Bacon’s Utility And Power In Advertising Posters**

9.30 Bacon’s advocacy of utility and power over beauty emerged most fully in advertising graphics, where communications of products take precedence over the classical requirements of visual beauty and harmony. In putting effective message across from the manufacturers to the consumers, communication had to be persuasive rather than pretty. Bacon’s ideal of utility is manifested in the minimalist aesthetics, where minimal graphics communicates exactly the author’s intention without any need for embellishment. The medium of advertising posters took on expressive, symbolic images and were organised in a manner that was effective rather than beautiful for its own sake. The result was a distillation of energy, capturing the attention and imagination of the observer.

**Bernhard, The Accidental Minimalist**

9.31 Early in the twentieth century, a flat-color, reductive design school emerged in Germany in the early twentieth century known as *Plakatstil* or, ‘poster style’. At around the turn of the twentieth century, Lucien Bernhard (1883-1972) was unsuccessfully supporting himself as a poet in Berlin when, in 1905, he saw an advertisement for a poster contest sponsored by Priester matches. Bernhard who had excelled in art in school decided to enter the contest. His first design showed a round table with a checked tablecloth, with an ashtray holding a lighted cigar, and a box of matches. He thought at first that the image was too bare, so he painted scantily clad dancing girls in the background (ref. Meggs, 1998: 249).

9.32 Later, during the course of the day, he decided that the image had become too complex and painted out the dancing girls. And when a friend dropped by and asked whether it was a poster for a cigar, Bernhard decided to paint out the cigar. Without the dancing girls and the cigar, the tablecloth and the ashtray stood out too prominently, so Bernhard painted them out as well. What was left was a pair of matches on the bare table. He thought at first that the image was too bare, so he painted scantily clad dancing girls in the background (ref. Meggs, 1998: 249).
background. He quickly wrapped the poster and sent it off just in time to have it postmarked before midnight to beat the deadline (ref. Meggs, 1998: 249).

9.33 Bernhard’s submission was at first rejected by the jury, but was rescued from the trashcan by a tardy juror, Ernst Growald, who convinced the other jurors of the merit of Bernhard’s image. The poster became the now famous Priester poster, which reduced communication to two matches and a word. The message was effective and powerful, minus all the peripheral frills and decoration. Bernhard was to repeat the formula over and over again over the next two decades. In total, he is estimated to have designed over three hundred packages for thirty-six products, becoming a highly successful illustrator based on a minimalist formula. The poster for Stiller shoes (1912), which uses flat, austere graphics was to exemplify the better of Bernhard’s many works of poster illustrations (ref. Meggs, 1998: 249-10).

9.34 Like the significant architects of his generation (Wright, Mackintosh, Behrens), Bernhard became heterogeneous in his design vocation. As time went on, he tackled interior design, then studied carpentry to learn furniture design and construction, which led to a study of architecture. From the 1910s Bernhard designed furniture, rugs, wallpapers, and lighting fixtures as well as office buildings, factories, and houses (ref. Meggs, 1998: 250).

9.35 The effectiveness of Bernhard’s reductive, minimalist and simple visuals were to anticipate the constructivist movement (ref. Meggs, 1998: 250), and with it, the aesthetics of the modern movement through the Bauhaus. With Bernhard, classical aesthetics was finally overcome since Bacon’s thesis for utility and power over beauty in the seventeenth century. Hence it was not architecture that first broke from classical aesthetics, but the print media and the advent of new communication. New painting style also broke from classicism ideal toward a minimalist expression that evoked utility, with perceptual purposes, rather than for beauty, narrative or decorative.

**Malevich To El Lissitzky**

9.36 Several years after Bernhard’s Priester poster (1905) and soon after his Stiller shoes poster (1912), Kasimir Malevich (1878-1935) emerged with a minimalist type of painting that dealt only with slaps of plain colours to evoke perception. In 1913 he made a composition with a black square on a white background, asserting that the feeling this contrast evoked was the essence of art. In works such as the 1915 *Suprematist Composition*, “Malevich saw the work of art as a construction of concrete elements of colour and shape. The visual form becomes the content, and expressive qualities develop from the intuitive organisation of the forms and colour” (Meggs, 1998: 262). In suprematism, Malevich hence founded a painting style of basic forms of pure colours. It is a style that is purely abstract, seeking the supreme “expression of feeling, seeking no practical values, no ideas, no promised land” (Meggs, 1998: 262).

9.37 Meggs suggests that the background for Malevich’s suprematism is futurism and cubism (Meggs, 1998: 262). Futurism and cubism also forms the background for the constructivist movement in Russia, which was accelerated by the
1918 revolution. However, whilst Malevich (and also Kandinsky) argued that art must remain an essentially spiritual activity apart from the utilitarian needs of society, believing that the sole aim of art was to realise perceptions, the Russian movement was to attempt to give art a social role, in keeping with the spirit of its 1918 revolution. The constructivist ideal was best realised by the architect El (Lazar Markovich) Lissitzky (1890-1940), who was also a painter, graphic designer and photographer. Being an architect, Lissitzky used mathematical and structural properties as bases for his art. In 1919, Lissitzky joined the faculty of the art school at Vitebsk, where Malevich was already teaching. Meggs suggests that Malevich became a major influence on Lissitzky, who developed a painting style, which he called PROUNS (an acronym for “projects for the establishment of a new art”) (ref. Meggs, 1998: 264).

9.38 Compared with Malevich’s flat compositions in his suprematist works, Lissitzky’s PROUNS have a three-dimensional illusion about them. Lissitzky called PROUNS “an interchange station between painting and architecture”. Meggs describes how Lissitzky in one of the works transformed Malevich’s suprematism:

This indicates his synthesis of architectural concepts with painting; it also describes how PROUNS pointed the way to the application of modern painting concepts of form and space to applied design. This seen in his 1919 poster, Beat The Whites With The Red Wedge. The space is dynamically divided into white and black areas. Suprematist design elements are transformed into political symbolism that even a semiliterate peasant can understand (Meggs, 1998: 264).

9.39 Meggs sees Lissitzky as the most significant among the Russian constructivists for his range of work, particularly in the print media. For example, one of the most influential graphic designs in the 1920s was the book The Isms of Art 1914-1924, which Lissitzky edited with the dadaist Hans Arp, wherein Lissitzky’s format for the book was seen as an important step toward the creation of a visual programme for organising information. The book has an architectonic quality about it: Lissitzky used a three-column horizontal grid structure for the title page; a three-column vertical grid structure was used for the text page, and a two-column structure for the contents page. The structure of the book was like an architectural framework which organises a forty-eight page pictorially illustrated portfolio (ref. Meggs, 1998: 267).

Merger Between Art And Architecture

9.40 Whilst architects have influenced the direction of art in the 1920s as in the case of Lissitzky as described above; it was however art that first influenced the direction of architectural aesthetics prior to the 1920s, also outlined above. In writing about the influences on Russian constructivism during the time, Catherine Cooke states that: “As in Europe during the time, the most obvious and direct influence in shaping the architectural theories and aesthetics of the avant-garde was the new art” (Papadakis, ed., 1991: 9). She goes on to say:

If we consider the origins of architecture’s new language, as opposed to the spatial and social dimensions, then we are looking at quite another area of pre-
Revolutionary activity: to art.... It was Malevich’s ‘supreme abstraction’ of form in a four-dimensional space-time that provided the formal innovators of many different post-Revolutionary trends with their ‘clean slate’ for building up a new formal language from first principles (Papadakis, ed., 1991: 11).

9.41 The basis of constructivist ideals was not architecture itself, but the merger between different media of art, where architecture was considered as just one of these. According to Cooke, the statement that Vladimir Tatlin (1885-1953) issued in 1919 in The Work Ahead of Us was of seminal importance for the future relationship between the plastic arts. She goes on to state:

The ‘functionless’ counter-reliefs’ he did as ‘art’ in the pre-Revolutionary years, he said, were the ‘laboratory scale’ preparation of a new formal language through which to respond now to the new society’s requirements for material objects. What were formerly ‘painting’, ‘sculpture’ and ‘architecture’ would now become part of a continuum of work with real materials whose end product was functional. From these studies of materials must come a whole new set of ‘disciplines’ as the designer’s tool, which in their different way must be ‘as rigorous as the disciplines of Classicism (Papadakis, ed., 1991: 13).

9.42 Earlier in 1911, Wassily Kandinsky (1866-1944) wrote the influential On the Spiritual in Art, where he advocated the analysis of the different artistic medium, which challenge was taken up by various working ten years later. Kandinsky wrote that:

The first part of the programme consists of an analysis of the specific properties of each different artistic medium. The point of departure is the psychological response of the artist to the property – for example, red is known to excite activity (Papadakis, ed., 1991: 13).

9.43 The writings of Tatlin and Kandinsky prompted further investigation and Working Groups were established to investigate ‘the specific properties’ of painting, sculpture and architecture. Nikolai Ladovsky (1881-1941) led the groups with specific focus on architecture. His ‘work-plan’ for the group was:

1: The collection of theoretical studies and the existing theories of architecture of all theoreticians, 2: The extraction and assembly of relevant material from the theoretical treatises and from research in other arts that has a bearing in architecture, and 3: The exposition of our own theoretical attitudes to architecture (Papadakis, ed., 1991: 13).

Objective Analysis Group And Scientific Modernism

9.44 In parallel to Ladovsky’s group, were the painting and sculpture groups. Another group was the Objective Analysis Group, of which Ladovsky was also a member. The priority discussion of this group was on the principles of construction and composition. Cooke describes the character of the Objective Analysis Group as follows:
(The Objective Analysis Group) consisted of the most radically innovative abstractionists, who were aware of the emergence of a new creative principle in their work, which differed significantly from the principles in which they had been trained. It was not their abstraction itself which was new, but a more self-consciously programmatic way of creating a form that involved ‘building it up’, literally ‘constructing’ it, rather than composing the work as a single perceived image (Papadakis, ed., 1991: 13).

9.45 The debate of the Objective Analysis Group marked a turning point for architecture. Two main groups, which believed in scientific modernism were formed. Those who still believed in the primacy of the established notion ‘composition’, and still sought to develop the psychological and perceptual direction established by Kandinsky’s initial programme, were to become the architectural Rationalists, led by Ladovsky and his colleague Vladimir Krinsky. In 1923, they created ASNOVA (the Association of New Architects) to propagate the new Rationalist approach. On the other side, another subgroup was convinced about the special importance of the new principle of ‘construction’, and went on to become the First Working Group of Constructivists. In 1925 this group became the OSA (the Union of Contemporary Architects). The key architects in this group were Alexander Vesnin (1883-1959) and Moisei Ginzberg (1892-1946).

9.46 The two significant artists who played a key role in the First Working Group of Constructivists (which later became the OSA) were Alexander Rodchenko (1891-1956) and Alexei Gan (1893-1942). In a 1922 brochure Konstructivism Gan criticised the abstract painters for their inability to break the compositional ties to traditional art, and he boasted that constructivism had moved on from ‘laboratory work to practical application’. Gan wrote that tectonics, texture, and construction were the three principles of constructivism: wherein tectonics represented the unification of communist ideology with visual form; texture meant the nature of materials and how they were used in industrial production; and construction symbolised the creative process and the search of laws for visual organisation (ref. Meggs, 1991: 264). In the print media these were exemplified in Lissitzky’s *The Isms of Art 1914-1924* (Ref. Item 9.39).

**Bacon’s Method Realised With Constructivism**

9.47 Cooke describes ASNOVA and OSA as two main groups of scientific modernism (ref. Papadakis, ed., 1991: 13). However, ASNOVA continued to regard the traditional requirement for composition as a factor in architecture. On the other hand, OSA had theoretically done away with the requirements for composition and embraced a laboratory method instead (ref. Item 9.46). In 1927, Ginzberg described that using the laboratory method, any particular design problem was first ‘dismembered’ for closer examination and then ‘reassembled’. It also needs to be noted that OSA is a product of the 1918 revolution. Ginzberg hence advocated that every particular design problem was subject to the ‘general characteristic of the epoch as a whole’. These were purportedly the fact of a collective client and a new way of life; the fact that architecture was part of a larger state plan; the economic need to operate through norms and types; the ideological requirements to operate through ‘one single monistic method’ (ref. Papadakis, ed., 1991: 15).
9.48 Guinzberg’s laboratory method has four stages:

Stage one involves generating ‘the basic spatial diagram of the building’, which was that ‘social condenser’, which is achieved through the analysis of the ‘flows’ and ‘needs’ of social processes inside it, the environmental requirements, and the ‘revolutionary thinking’ of how the technical means available might be used.

Stage two demands that ‘the material forms crystallise as the social condenser be examined in terms of the problem of perception’ so that the perception enhances the useful activity of the condenser.

Stage three examines ‘the elements of architecture which are the objects of perception: surface, volume and the volumetric co-existence of bodies in space’. It stresses the importance of those ‘types of transformation’, like cutting holes in surfaces, changes in the relationships of parts or ii their material, that offer means of making formal response to a change of the brief.

Stage four involves detailed examination of ‘the particular processes of industrial production which leave their stamp…. on individual components and organisms within the building…. freed from handed-down models of the past’ (ref. Papadakis, ed., 1991: 15).

9.49 Guizberg further wrote that: “Form is a function, \( x \), which has always to be evaluated anew by the architect in response to changes in the form-making situation”. Cooke suggests that:

*The mathematical language reflects one of their lessons from engineering: that mathematical precision is necessary in understanding properties of both materials and spatial organisations, and that when mathematical develops further a genuinely multivariate optimisation of form would become possible in architecture* (Papadakis, ed., 1991: 15).

9.50 In effect, constructivism is anti-style. Architecture, like every other aspect of cultural life, was subjected to an examination as the Soviet Union sought a popular proletarian art. Architecture became part of the new socialist realism, a conscious style with avowed social and didactic aims. It also carried with it the conditions of culture. For example, Ilya Alexandrovich Golosov (1883-1945) wrote in 1921 that: “Style is not the essence of architecture, and what really matters is to distinguish true artistic spirit from style and material values” (ref. Papadakis, ed., 1991: 7). The constructivist philosophy also resolutely refused to evoke past and present values – constructivism eventually became a language of pure form, where the architect becomes a super technician. Any symbolism is contained within the construction. Constructivist ideal in effect carries the Baconian ideal for a laboratory (or scientific) approach, devoid of stylistic doctrines and pre-determined rules.

**Breaking The Classical Paradigm**

9.51 In architecture, the requirement for historicism and the classical Vitruvian paradigm for ‘commodity, firmness and delight’, where composition and proportion were always a demand were finally broken with constructivist theories and application. In his
article, *New Methods of Architectural Thought*, 1926, Ginzberg outlined the nature of the break as follows:

But the Revolution, in sweeping away the stagnant prejudices and outlived canons, has turned the fissure into abyss. On the far side of the abyss remain the last withering of the already decrepit system of European thinking, of that unprincipled eclecticism which always has a thousand aesthetic recipes at the ready, all of them approved by our grandfathers and great-grandfathers. Such thinking ready to ladle out truth from wherever suited – provided only it was from a source in the past.

On this side of the abyss is opening up a new path which still has to be paved, and a great new expanses of space which still have to be developed and populated. The outlook and worldview of the contemporary architect is being forged in the circumstances of today, and new methods of architectural thinking are being created (Benjamin, ed., 1990: 43)

9.52 To Ginzberg, the old system of designing would normally be a process wherein the task is hammered out logically and which represents a consciously creative process from the beginning to the end. He suggests that this process be replaced by one where the architecture “could only be solved through a precise elucidation of the unknowns…” (Benjamin, ed., 1990: 43). The recommended method echoes a process in a science laboratory, which is the Baconian inductive method. Ginzberg puts it rhetorically as follows:

The architect sees around him the fearless creativity of inventors in various fields of contemporary technology, as with gigantic steps it conquers the earth, the ocean depths and the air, winning new bridgeheads by the hour. It is not difficult to see that these astonishing successes of the human genius are explained, in general, by the fact that the right method was pursued in tackling the task. The inventor knows full well that however energetic the upsurge of this creative enthusiasm may be, it will be useless without a sober consideration of all minutiae in the circumstances surrounding his activity. He is fully armed with contemporary knowledge, he takes account of all the conditions of today, he looks forward, he conquers the future (Benjamin, ed., 1990: 43).

9.53 The purpose of adopting the inductive method is to eventually invent, or to discover something which is previously unknown. In architecture, the sole purpose is to innovate. Ginzberg states that:

In this field it is only the inventor’s creative method that the contemporary architect must master. Any mould or model from the past must be categorically repudiated, however beautiful it may be, for the pursuits of the architect are in their essence precisely such invention, just like all other invention. His is a work of invention which has set itself the aim of organising and constructing a concrete practical task not just in response to the dictates of today, but as something that will serve the needs of tomorrow (Benjamin, ed., 1990: 43-4).
Constructivism To Deconstruction

9.54 Sixty years later Peter Eisenman is to elucidate views similar to Ginzberg. Eisenman regards the ‘modern’ architecture as merely the continuum of established classical architecture and that it did not rupture the classical paradigm as commonly assumed:

Thus it is now possible to see that, although stylistically different from previous architectures, ‘modern’ architecture exhibits a system of relations similar to the classical. Prior to this time, the ‘classical’ was taken to be either synonymous with ‘architecture’ conceived of as a continuous tradition from antiquity or, by the mid-nineteenth century, a historical style. Today the period of time dominated by the classical can be seen as an ‘episteme’, to employ Foucault’s term — a continuous period of knowledge that includes the early twentieth century. Despite the proclaimed rupture in both ideology and style associated with the Modern Movement, the three fictions (representation, reason and history) have never been questioned and so remain intact. This is to say that architecture since the mid-fifteenth century aspired to be a paradigm of the classic, of that which is timeless, meaningful, and true. In the sense that architecture attempts to recover that which is classic, it can be called ‘classical’ (Eisenman, 2004: 153).

9.55 Like the constructivists, Eisenman suggests the doing away with composition as a priori to the architectural process to enable form to become a place for invention, that there should be an internal process that can generate a non-representational architecture. To Eisenman, the way toward achieving formal invention is to undermine classical aesthetic and replace it with the poetic of architectural text:

In this context architectural form is revealed as a ‘place of invention’ rather than as a subservient representation of another architecture or as a strictly practical device. To invent an architecture is to allow architecture to be a cause; in order to be a cause, it must arise from something outside a directed strategy of composition.

The end off the end also concerns the end of the object representation as the only metaphoric subject in architecture. In the past the metaphor in architecture was used to convey such forces as tension, compression, extension, and elongation; these were qualities that could be seen, if not literally in the objects themselves, then in the relationship between objects. The idea of the metaphor here has nothing to do with the qualities generated between buildings and spaces; rather, it has to do with the idea that the internal process itself can generate a kind of non-representational figuration in the object. This is an appeal, not to the classical aesthetic of the object, but to the potential of architectural text. The problem, then, is to distinguish texts from representations, to convey the idea that what one is seeing, the material object, is a text rather than a series of image references to other objects or values (Eisenman, 2004: 163).

9.56 What Eisenman advocates is similar to the Objective Analysis Group of the constructivists who asked for a more self-consciously programmatic way of creating a
form that involved ‘building it up’, literally ‘constructing it’, rather than composing the work as a single perceived image (ref. Item 9.44). In Eisenman, the ‘building it up’ and ‘constructing it’ have evolved into the idea of architecture as ‘writing’, which like the constructivists is also opposed to architecture as image (ref. Eisenman, 2004: 163). To Eisenman, the reader of the writing is not regarded as a user or observer, who is therefore distanced from any from any external value system (especially an architectural-historical system). Therefore, to Eisenman, such a reader has no preconceived knowledge of what architecture should be in terms of its proportions, textures, scale, and the like; nor does this kind of architecture aspire to make itself understandable through these perceptions (ref. Eisenman, 2004: 163). Eisenman describes what happens to the reader and to the architectural process as follows:

The new reader is no longer presumed to know the nature of truth in the object, either as a representation of a rational origin or as a manifestation of a universal set of rules, governing proportion, harmony and ordering.... The activity of reading is first and foremost in the recognition of something as a language (that it is). Reading, in this sense, makes available a level of indication rather than a level of meaning or expression.... Architecture in the present is seen as a process of inventing an artificial past and futureless present (Eisenmen, 2004: 164).

Dadaist ‘State Of Mind’

9.57 In the above statement, Eisenman asks for freedom for architecture from having to have a truth in the object, and freedom from having to be tied to a past or tied to an assumed future. The opposition to architecture having a tradition, a future or an image is no less than politicising architecture. Especially when Eisenman were to state, with regard to innovation that: “In this context architectural form is revealed as a ‘place of invention’ rather than as a subservient representation of another architecture or as a strictly practical device. To invent an architecture is to allow architecture to be a cause; in order to be a cause, it must arise from something outside a directed strategy of composition” (ref. Item 9.55). What then forms the basis of the spirit of the ‘new’ architecture if it is without history, assumed future, image or composition? The only thing that Eisenman agrees it must have is a language. Architecture to Eisenman is therefore some kind of political statement. According to E. M. Farrelly, writing about ‘The New Spirit’ in 1986, when deconstruction ideas were still new, her Dadaist ‘state of mind’ echoed to what Eisenman had envisaged:

In a few short years (Dada) was to re-evaluate the role of art and artists in society so profoundly that none of the arts – poetry, music, painting, sculpture, photography – would, or could, ever be the same again. It was, in the words of Werner Haftmann, a movement in which “all the values of human existence.... were brought into play, and every object, every thought, turned on its head, mocked and misplaced, as an experiment, in order to see what that was behind it, beneath it, against it, mixed up in it.... a state of mind feverishly exalted by the freedom virus, a unique mixture of insatiable curiosity, playfulness, and pure contradiction”.
Dada was not a new style or technique but in the words of Tristan Tzara, a ‘state of mind’. It could not, therefore, be copied so far as absorbed – and, consciously or unconsciously, and with varying degrees of success and superficiality. Dada’s ‘freedom-virus’ has been absorbed, direct into the blood stream of twentieth-century art (Davey, ed., 1986: 10).

9.58 The result of the Dadaist ‘state of mind’ to architecture, according to Farrelly, in 1986, was a new spirit:

The New Spirit, like Dada, is fired in part by the need to break-down and break through existing patterns of deceit and smug self-interest. It is not only anti-stasis, anti-concealment, but also profoundly anti the increasing smoothness, glibness and facile predictability of the established (and by and large unexamined) canons of the prevailing architectural order (Davey, ed., 1986: 11).

9.58 Farrelly was of course overselling her idea of ‘New Spirit’ as it did not turn out to be generic. Farrelly’s ‘New Spirit’ were exemplified on the main by: the works and manifesto of Co-op Himmelblau for architecture; Elias Moser and William Goodwin for interior architecture; Neville Brody for graphic design (ref. Davey, ed., 1986: 18-33). Co-op Himmelblau would become part of the deconstruction movement and interior designers like the Japanese Super Potato, would continue Elias Moser and William Goodwin kinetic, tactile interior architecture. Neville Brody was associated with punk graphics due to his album covers for the Sex Pistols in the 1970s. Clearly, Farrelly was on to something then, but her ‘New Spirit’ never caught on; but something else did, which was Derrida’s ‘Deconstruction’.

From Freedom To Imagination

9.59 Derrida’s terminology ‘deconstruction’ is a translation of Heidegger’s terminologies, *Destruktion* and *Abbau*. *Destruktion* does not equate to destruction; but instead, it is a process of destructuring that: “dismantles the structural layer in a system’ and, *Abbau* means, “to take apart an edifice in order to see how it is constituted”. Both signify “an operation bearing on the structure or traditional architecture of the fundamental concepts of ontology or of western metaphysics”. Derrida’s idea is that the ‘deconstructing’ disturbs a tradition by inhabiting its structure in a way that exploits its metaphoric resources against itself, not to abandon the structure but to locate what it conceals” (ref. Wigley, 1993: 42).

9.60 It takes imagination to understand what Derrida is saying and his sayings are known only intuitively as his interest is to discard the rules that realise structure, particularly the structure of language. With regard to architecture, it would be easier to assume that the unbuilding, which is deconstruction, has to do with demolishment; but it is not. It attempts instead to: “establish the conditions of possibility of the ‘traditional architecture’ rather than staging its fall” (Wigley, 1993: 42). Whilst it takes imagination to understand the point Derrida tries to make, the execution itself is a scientific process, like Baconian induction. Wigley explains the architectural process as follows:
To make a building tremble is precisely not to collapse it by subjecting it to some external force, but to explore it from within, even to consolidate the structure, imitating its every gesture, faithfully repeating its operations but in a way that exposes its limits, opening up its structure or, rather, finding the openings that are already there, the concealed points of weakness…. an appropriation of structures that identifies structural flaws, cracks in the construction that have been systematically disguised, not to collapse those structures but, on the contrary, to demonstrate the extent to which the structures depend on both these flaws and the way they are disguised (Wigley, 1993: 42).

9.61 The inductive process as described by Wigley’s passage above is like an execution of a particular language, a way of architecture that also requires the interjection of the imagination. It is one of many ways of making architecture, embraced by some and rejected by others for myriad reasons. As far back as 1917, Gropius had already articulated the prerequisite of imagination above all else, and he did with the surety of conviction – the issues raised then are equally valid today:

What is architecture? The crystalline expression of man’s noblest thoughts, his ardent, his humanity, his faith and his religion! That it once was! But who of those living at this time, cursed as it is with functionalism, does still understand the all embracing and cheering nature of architecture…. The grey, empty, obtuse stupidities in which we live and work will bear humiliating testimony to the spiritual abyss into which our generation has slid…. Ideas perish as soon as they are compromised…. Build in fantasy without regard for technical difficulties. To have the gift of imagination is more important than all technology, which always adapts itself to man’s creative will (ref. Jencks, 1995: 20).

**Question Of Language**

9.62 The arguments above trace the lineage from the emergence of scientific attitude in the seventeenth century to modernism and later, to deconstruction, all of which seem to have begun with the method of induction that started with Bacon. However, all the while, other styles have run in concurrent with modernism in the twentieth century till today. The twentieth century has witnessed in concurrence with modernism, critical vernacular, ethnic vernacular and architectural postmodernism, together with deconstruction. Particularly with critical vernacular, function and locality form the basis of its formal language. From Wigley’s passages, deconstruction is an architectural language of choice, and by extension of the same spirit of argument, so would modernism, postmodernism and vernacular be extensions of chosen languages. There is however degrees of validity for each language at different times and localities. Some sort of subjective morality seems to determine this validity. For example, in opposing deconstruction for its ‘relativism’ and defending postmodernism, Jencks invoked plural architecture that is appropriate for different localities – in similar way that William Lim does:

By contrast, the tradition of Post-Modernism to which I belong – called various ‘restructive’, ‘constructive’ or ‘ecological’ – contends that metanarratives have not ended but, rather, have become contested, and are seen now in their plurality. It is this,
not nihilism or absolute relativism, that is the big shift in our time: a movement towards the fullness of different meanings and diverse ways of life, continuously created by an expanding universe. If plural meanings did not exist we – or any species that can feel or think – would soon invent them. Cosmic values, as I will argue, precede and are mirrored by aesthetic and social values. Truth, beauty and morality are not, pace so much Western philosophy, just in the eye of the beholder (Jencks, 1995: 25).

9.63 This recalls the kinds of examples that Li was using to demonstrate innovation in architecture in the seventeenth and eighteenth century in England (ref. Li, 2007). It seems too at the time it was all a matter of appropriate language; the difference being that values at the time was void without historical continuum. As acceptable aesthetic language, history provided some kind of certainty or truth – the formal language of the past was used to certify the meaning of the present. Modern architecture then purported to liberate architecture from the past by suggesting that architecture should not represent the past; but embodied its function, with the deductive conclusion that form followed function.

9.64 With the purpose of distancing itself from historical representational tradition, modern architecture stripped itself of the outward trappings of historicism, particularly the ‘Classical’ style. Following abstract art, the process of reduction was often referred as abstraction. For example, a column without a base and a capital was thought to be an abstraction. Thus the reduced form was thought to embody function and, without adornment, it represented honesty. The column thus becomes the simple load-bearing element, in the language of aesthetic honesty. However, in a critique of modernism, Eisenman infers that its language of function is just another accent of the classical language:

*Functionalism turned out to be yet another stylistic conclusion; this one based on a scientific and technical positivism, a simulation of efficiency. From this perspective the Modern Movement can be seen to be continuous with the architecture that preceded it. Modern architecture therefore failed to embody a new value in itself. For in trying to reduce architectural form to its essence, to a pure reality, the moderns assumed they were transforming the field of referential figuration to that of non-referential ‘objectivity’. In reality, however, their ‘objective’ forms never left the classical tradition. They were simply stripped down classical forms, or forms referring to a new set of givens (function, technology). Thus Le Corbusier’s houses that look like modern steamships or biplanes exhibit the same referential attitude toward representation as a Renaissance or classical building. The points of reference are different, but the implications for the object are the same* (Eisenman, 2004: 164).

9.65 If architecture cannot be a truth then it could possibly be a language, which speaks in different accents to convey intended meanings. As observed in the various manifestations of twentieth century architecture, they (particularly the modern) purport to speak the language of science just as the architecture of antiquity purport to speak of the language of ‘truth’, where historicism often played a part. In the modern, science and reason are used as vehicles in the quest for origin in architecture, in the Baconian
inductive manner. Whereas in the architecture of antiquity, origin was self-evident, belonging to a then universal a priori values. With the modern, the origin was thought to contain architecture’s original purpose and thus its inevitable destiny – that the ideal origin would presumably lead to an ideal end, like finding the Holy Grail. Taking all possible frills away, the discourse is inevitably reduced to a discourse about function.

9.66 In Item 9.64, Eisenman tries to demonstrate that the language of truth and origin in architecture has in effect shown to be self-deceiving, as it is no less only another accent of the classical language. Truth also infers timelessness, and modernism infers this with its purported being as the ‘spirit of the age’. Through Hegel’s nineteenth century thesis, ‘The Phenomenology of Spirit’, dialectical time became the modern idea of zeitgeist, where presentness is rooted in cause and effect – what it meant is that an a priori relationship exists with between history and all its manifestation at any given moment, wherein architecture should be appropriate to its age. The governing spirit determines the style of the time, in other words, appropriate expression – or rather, appropriate language. Based on the ideology of the zeitgeist, origin, or truth, then cannot be found as the appropriate architecture is contingent and of the present, rather than absolute or eternal.

9.67 The difference in value between historical classicism and twentieth century modernism, between the eternal value of classicism and the contingent value of the zeitgeist in the end is aesthetic preferences – or style – or language. From the critical viewpoint, the historical moment of the zeitgeist seems merely the continuum of many historical moments – like steps of evolution. In that sense, the modern idea of zeitgeist is not a rupture of history as its proponents would hope. The time of modernism, in the twentieth century is hence not ideologically eternal – the precepts of modernism will again change with time. From within history it does not seem possible to argue for a case of timelessness or a single eternal truth, otherwise history would cease to be an objective source of truth. Timelessness of any idea or ideology is hence illusory.

9.68 With no one single man-made timeless truth; there is hence no timeless meaning for the reason that the loss of self-sustaining value results also in the loss of timelessness of meanings. Hence architecture can be timeful, linked to history; but it cannot be timeless – there is a separation between timelessness and value. By the extension of this argument, it becomes invalid to search for a single origin in architecture. Much of critical architectural discussion thus seem erroneous, whether it was a discussion on the validity of modernism against postmodernism against deconstruction or the rightness of the vernacular and so on.

9.69 Before the advent of what we understand now as modernity, architecture had naturally been mimetic – a simulation of something, whether of an object or of a narrative. For example, classical columns were simulation of trees and rising religious edifices were symbolic of religiosity. Even in the era of modernity, round windows were representative of portholes of ships. In this sense architecture is similar to the other arts, where for example in literature, metaphors and similes have wide range of nuances, enabling the poetic and the ironic to happen.
9.70 Equally, by extension of the same argument, the application of reason in architecture is also another form of simulation. The architectural manifestations of reason would naturally include the rational value of structures, rational representations, the quest for an ideal original leading to an eventual end and that the process would be deductive. That would still be the classical way of doing architecture, as the origin is left unruptured. Innovation would still be only incremental, whilst the classical paradigm still continues. The incremental innovation would have the same sense as the classical period where the columns were essentially the same with capitals evolving from the Doric to the Ionic to the Corinthian.

9.71 Without the baggage of history, to be innovative then would be to modify the origin or to invent another origin. To get to modify the origin would then not be one of causal strategy, but instead a process of manipulating the origin through a non-directional, non-dialectical and non-goal-orientated process. The ultimate motive is to reinvent the origin. However, the process of engaging the origin is value-laden even before the process could begin. For example, since the arbitrary origin cannot be known in advance, as it does not depend on historical tradition, hence the origin cannot engender a strategy – in a way it is saying that no strategy can begin without some kind of knowledge – if not historical knowledge, then at least knowledge that is a progeny of culture or domains. From the literature reviews, we have come to realise that none of the great innovators begin in a void, all of whom in effect are influenced by their predecessors, they require a period of time to develop their ideas (10-12 years) and they interact actively within their own and with other domains (ref. Items 5.46-60).

9.72 It seems then that the way to modify the origin is to engage architecture outside of object representation, beyond the normal discourse that concerns appearances, forms and spaces – outside discussions about proportion, harmony, formal tension and so on. To shake the prevailing classical-dominant origin, the engagement with the origin could possibly move away from object and spaces to something else – pure language perhaps. The engagement with the origin could possibly have been the prime motivator behind deconstruction theory, Farrelly’s ‘New Spirit’ (ref. Davey, ed., 1986) and Jencks’ cosmic postmodernism (ref. Jencks, 1995).

9.73 For example, deconstruction theorists attempt to convert the engagement of the origin from that of object representation to that of language representation. In the 1980s, Eisenman used text to attempt to modify the origin and in the 1990s, he used diagrams. Eisenman suggests in the 1980s that ‘architectural writing’ evokes another system of signs called ‘traces’ that have no other value than to ‘signal the idea’. It does not simulate the real but in a complicated way, skirts around it, through the ‘idea to read’, which is not a simulation of reality, but an action in process:

What is being ‘written’ is not the object itself – its mass and volume – but the act of massing. This idea gives the metaphoric body to the act of architecture. It then signals its reading through an other system of signs called traces. Traces are not meant to read literally, since they have no other value than to signal the idea that there is a reading
event and that reading should take place; trace signals the idea to read. Thus a trace is a partial or fragmentary sign; it has no objecthood. It signifies an action that is in process. In this sense a trace is not a simulation of reality; it is a dissimulation because it reveals itself as distinct from its formal reality.... Thus the trace is the record of motivation, the record of an action, not an image of another object-origin (Eisenman, 2004: 163).

9.74 By distancing herself from the object, and from formal reality, Eisenman’s ‘reader’ of architecture holds a disinterested position, which recalls Kant’s aesthetic judge – who has no vested interest in the work of art in order to provide value judgment (ref. Kant (1790), 2000). Eisenman describes the qualities the ‘reader’ needs to break away from the classical paradigm:

Such a reader brings no prior competence to the act of reading other than an identity as a reader. That is, such a reader has no preconceived knowledge of what architecture should be (in terms of its proportions, textures, scale and the like); ‘nor does a not-classical’ architecture aspires to make itself understandable through these preconceptions....

The new competence comes from the capacity to read per se, to know how to read (but not necessary to decode) architecture as a text. Thus the new ‘object’ must have the capacity to reveal itself first of all as a text, as a reading event (Eisenman, 2004: 163).

9.75 What Eisenman has done through the ‘reader’ is to turn architecture into a linguistic activity, where the reader behaves like a linguist, and reading architecture is like reading a fiction novel, without commitment to a ‘truth’. By this time, Eisenman had already regarded architecture as fiction, more indicative than meaningful:

The architectural fiction proposed here differs from the classical fiction in its primary condition as a text and in the way it is read: the new reader is no longer presumed to know the nature of truth in the object, either as a representation of a rational origin or as a manifestation of a universal set of rules governing proportion, harmony, and ordering. But further, knowing how to decode is no longer important; simply, language in this context is no longer a code of assign meanings (that this means that). The activity of reading is first and foremost in the recognition of something as a language (that it is). Reading, in this sense, makes available a level of indication rather than a level of meaning and expression (Eisenman, 2004: 164).

9.76 It is apparent that with the application of the methodologies of language into architecture, Baconian science began to mutate to areas of uncertainty. The quest for ‘underlying principles’ to innovate holistically instead of incrementally, has necessitated the destabilising of the origin – Eisenman calls it ‘dislocation’. Baconian science had by necessity given way to cognitive thinking in order to progress and to enable wholesale innovation. In architecture, Eisenman seems to have demonstrated that the laboratory method is limiting and is insufficient to test the ‘origin’.

**Time Context – Cybernetics Theory**
The statements Eisenman made could not have been possible before 1945, before Einstein’s theories of relativity and quantum mechanics began to be assimilated outside of the scientific circles. Since then, the paradigms of certainty and linearity were questioned. The frequent quest for a single truth could be done away with. Also after the war, ideas concerning connecting fields of interdisciplinary studies began to happen. Contemporary cybernetics for example, was first coined by Norbert Weiner in 1948 and included the study of ‘teleological mechanisms’ and included the interdisciplinary study of control systems, electrical network theory, logical modelling and neuroscience. It was popularised through his book, ‘Cybernetics, or Control and Communication in the Animal and Machine’ (1948). Through another book, ‘The Human Use of Human Beings: Cybernetics and Society’ (1950), Weiner popularised the social implications of cybernetics, drawing analogies between the automatic systems and the human institutions.

Its incarnation today, termed as the second order cybernetics, under the direction of Heinz von Foerster at the University of Illinois since 1958, emphasises how observers construct models of the systems with which they interact (eg. complex systems) to maintain, adapt and self organise. The circularity, or self-reference makes it possible to make precise, scientific models of purposeful activity that is orientated toward a goal or preferred condition. In that sense, cybernetics proposes a revolution with respect to the linear, mechanistic models of traditional Newtonian science. Prior to the twentieth century science and cybernetics, in classical science, every process is determined solely by its cause, that is, a factor residing in the past (ref. http://pespmc1.vub.ac.be/CYBERN.html).

Cybernetics has discovered that teleonomy (or finality) and causality can be reconciled by using non-linear, circular mechanisms, where the cause equals the effect. The simplest example of such a simplest mechanism is feedback. The simplest application of negative feedback or self-maintenance is homeostasis. The non-linear interaction between the homeostatic or goal-directed system and its environment results in a relation of control of the system over the perturbations coming from the environment (ref. http://pespmc1.vub.ac.be/CYBERN.html).

Just as Eisenman had used ‘trace’ to presumed underlying principles in deconstruction theory, cybernetics too presumed that there are underlying principles, which are applicable to complex systems, such as organisms, ecologies, minds, societies and machines. In the case of cybernetics, the underlying principles are used to unify the understanding of disparate types of systems. The characteristics of the underlying principles are:

- **Complexity**: Cybernetic systems are complex structures, with many heterogeneous interacting components.
- **Mutuality**: These many components interact in parallel, cooperatively, and in real time, creating multiple simultaneous interactions among subsystems.
- **Complementarity**: These many simultaneous modes of interaction lead to subsystems which participate in multiple processes and structures, yielding any single
dimension of description incomplete, and requiring multiple complementary, irreducible levels of analysis...

**Evolvability**: Cybernetic systems are constructive, in that as they tend to increase in size and complexity, they become historically bound to previous states while simultaneously developing new traits.

**Reflexivity**: Cybernetic systems are rich in internal and external feedback, both positive and negative. Ultimately, they can enter into ‘ultimate’ feedback of reflexive self-application, in which their components are operated on simultaneously from complementary perspectives, for example as entities and processes. Such situations may result in the reflexive phenomena of self-reference, self-modelling, self-production and self-reproduction (http://pespmc1.vub.ac.be/CYBSNAT. Html).

**Mutuality**

9.80 The idea of mutuality is also a popular idea outside of cybernetics. In popular science prominent scientists like David Bohm and Edward O. Wilson mooted similar ideas. For example, Bohm states that: “The notion that all these fragments are separately existent is evidently an illusion, and this illusion cannot do other than lead to endless conflict and illusion” (Bohm, 1980: 2). Wilson comparably states this as follows:

As the century closes, the focus of the natural sciences has begun to shift away from the search for new fundamental laws and toward new kinds of synthesis – ‘holism’, if you prefer – in order to understand complex systems. That is the goal, variously, in studies of the origin of the universe, the history of climate, the functioning of cells, the assembly of ecosystems, and the physical basis of the mind. The strategy that works best in these enterprises is the construction of coherent cause-and-effect explanations across levels of organisation. Thus the cell biologist looks inward and downward to ensembles of molecules, and the cognitive psychologist to patterns of aggregate nerve cell activity (Wilson, 1999: 292).

9.81 Baconian science, through the laboratory method aims at getting a result that answers a question, in other words its purpose is to achieve certainty, which in the end provides a theory or a law. However, alternative science also asks questions but it expects uncertainty. The expectant uncertainty could be traced to the early twentieth century discovery of the laws of relativity and even more so, to the discovery of quantum mechanics that establishes the uncertainty of universal laws:

Thus, the quantum theory shows that the attempt to describe and follow an atomic particle in precise detail has little meaning. The notion of an atomic path has only a limited domain of applicability. In a more detail description the atom is, in many ways, seen to behave as much as a wave as a particle. It can perhaps best be regarded as a poorly defined cloud, dependent for its particular form on the whole environment, including the observing instrument. Thus, one can no longer maintain the division between the observer and the observed. Rather, both observer and observed are merging and interpenetrating aspects of one whole reality, which is indivisible and unanalysable (Bohm, 1980: 11-2).
9.82 According to Bohm, relativity infers the same thing, that new observations requires the world to be viewed as an undivided whole:

Relativity calls for this sort of way of looking at the atomic particles, which constitute all matter, including of course human beings, with their brains, nervous systems, and the observing instruments they have built and that they use in their laboratories. So, approaching the question in different ways, relativity and quantum theory agree, in that they both imply the need to look on the world as an undivided whole, in which all the parts of the universe, including the observer and his instruments, merge and unite in one totality. In this totality, the atomist form of insight is a simplification and an abstraction, valid only is some limited context (Bohm, 1980: 13-4).

Undivided Wholeness In Flowing Movement

9.83 Bohm calls the new form of insight ‘Undivided Wholeness in Flowing Movement’. This is a kind of ‘stream of consciousness’, a flux of awareness, which is not precisely definable (ref. Bohm, 1980: 14). Bohm suggests that the insight is: “…. prior to that of the ‘things’ that can be seen to dissolve in this flow…. Evidently prior to the definable forms of thoughts and ideas which can be seen to form and dissolve in the flux, like ripples, waves and vortices in a flowing stream. As happens with such patterns of movement in a stream some thoughts recur and persist in a more or less stable way, while others are evanescent” (Bohm, 1980: 14). Bohm goes on to suggest that:

The proposal for a general form of insight is that all matter is of this nature: That is, there is a universal flux that cannot be defined explicitly but which can be known only implicitly, as indicated by the explicitly definable forms and shapes, some stable and some unstable, that can be abstracted from universal flux. In this flow, mind and matter are not separate substances. Rather, they are different aspects of one whole and unbroken movement. In this way, they are able to look on all aspects of existence as not divided from each other, and thus we can bring to an end the fragmentation implicit in the current attitude toward the atomic point of view, which leads us to divide everything from everything in a thoroughgoing way. Nevertheless, we can comprehend that aspect of atomism which still provides a correct and valid form of insight; i.e. that in spite of the undivided wholeness in flowing movement, the various patterns that can be abstracted from it have a relative autonomy and stability, which is indeed provided for by the universal law of the flowing movement (Bohm, 1980: 14).

9.84 The new science recalls Wittgenstein’s remark regarding language and thought, which comes together like a stream and only in the ‘flow’: “Conversation, the application and interpretation of words flow on, and only in the flow (Fluß) does a word have meaning” (Wittgenstein, 1980: S 135). Following the remark, Wittgenstein also states that, “Words only have meaning in the river of thought and life” (Wittgenstein, 1980: S 174). This further recalls Item 1.31 earlier on in this thesis, which refers to the relationship between the visiocentric nature of architecture and Wittgenstein’s remarks regarding ‘flow’. Here he sets his river image as a visual illustration of the nature of boundary of every assertion and the words we use to describe the background, and also why the background is so hard to describe. The passages begin with a sketch of a world-
picture, which is a graphic depiction of his understanding of the world and our place in it. The use of imagery is consequence to his of his conception of a world-picture, which can be described in terms of myth, or of the rules of a game that we may know mentally but not articulated. This is not ostensive analysis because the rules are implicit and normative rather than explicit and factual: any explicit formulation of the world-picture will not draw out the embedded:

But I did not get my picture of the world by satisfying myself of its correctness; nor do I have it because I am satisfied with its correctness. No: it is the inherited background against which I distinguish between true and false.

The propositions describing this world-picture might be part of a mythology. And their role is like that of rules of a game; and the game can be learned purely practically, without learning any explicit rules.

It might be imagined that some propositions, of the form of empirical propositions, were hardened and functioned as channels for such empirical propositions as were not hardened but fluid; and that this relation altered with time, in that fluid propositions hardened, and hard ones became fluid.

The mythology may change back into a state of flux, the river-bed of thoughts may shift. But I distinguish between the movement of the waters on the river-bed and the shift of the bed itself; though there is not a sharp division of the one from the other.

But if someone were to say “So logic too is an empirical science” he would be wrong. Yet this is right: the same proposition may get treated at one time as something to test by experience, at another as a rule of testing.

And the bank of the river consists partly of hard rock, subject to no alteration or only to an imperceptible one, partly of sand, which is now in one place now in another gets washed away, or deposited (Wittgenstein, 1969: SS94-99).

9.85 The above image holds that change is possible against a background. It implies indeterminacy in the world; however some things must remain constant. Wittgenstein is to later point to the primacy of the background and its indeterminacy: “If a pattern of life is the basis for the use of a word then the word must contain some amount of indefiniteness. The pattern of life, above all, is not one of exact regularity” (Wittgenstein, 1982: S211). Once indeterminacy is introduced into the picture, the boundary between the subjectivity of background and objective ostensivity is blurred. He then says in ‘Philosophical Grammar’, “.... In our study of symbolism there is no foreground and background; it isn’t a matter of tangible sign with an accompanying intangible power or understanding” (Wittgenstein, 1969a: S43). The background that Wittgenstein discusses about is an indeterminable pattern of life, which is causal to our thoughts: “Behind our thoughts, true and false, there is always to be found a dark background, which we are only later able to bring into the light and expressed as thought”
(Wittgenstein, 1979: 36). The influence that this background has on form of life is further described as follows:

We judge an action according to its background within human life, and this background is not monochrome, but we might picture it as a very complicated filigree pattern, which, to be sure, we can’t copy, but which we can recognise from the general impression it makes.

The background is the bustle of life. And our concept points to something within this bustle.

And it is the very concept ‘bustle’ that brings about this indefiniteness. For a bustle only comes about through constant repetition. And there is no definite starting point for ‘constant repetition.’

How could human behaviour be described? Surely only by showing the actions of a variety of humans, as they are all mixed up together. Not what one person is doing now, but the whole hurly-burly, is the background against which we see action, and it determines our judgment, our concepts, and our reactions (Wittgenstein, 1980a: SS624-626, S629).

9.86 Wittgenstein’s ‘flow’ is little known among contemporary protagonists of ‘flow’, as he is not quoted at all. However, the idea of flow began to be discussed in the 1990s and began to be associated with Csikszentmihalyi, Gardner and Collins. When Csikszentmihalyi first suggested ‘flow’ in 1990, he describes it as:

The optimal state of inner experience is one in which there is order in consciousness. This happens when psychic energy – or attention – is invested in realistic goals, and when skills match the opportunities for action. The pursuit of a goal brings order to awareness because a person must concentrate attention on the task at hand and momentarily forget everything else. The periods of struggling to overcome challenges are what people find to be the most enjoyable times of their lives…. By stretching skills, by reaching toward higher challenges, such a person becomes an increasingly extraordinary person (Csikszentmihalyi, 1990: 6).

9.87 It is evident that Gardner’s ‘flow states’, Csikszentmihalyi’s ‘flow’ and Collins’ ‘emotional energy’ share exactly the same meaning.

Gardner’s ‘heightened attention’ where, Certain brain centres and neural transmitters are mobilised in these states, whether they are induced by the ingestion of substances, involvement in a hobby, or sheer control of will (ref. 3.20) infers the same meaning as:

Csikszentmihalyi’s The optimal state of inner experience is one in which there is order in consciousness. This happens when psychic energy – or attention – is invested in realistic goals, and when skills match the opportunities for action. The pursuit of a goal
brings order to awareness because a person must concentrate attention on the task at hand and momentarily forget everything else (ref. 3.21).

This again is the same as Collins’ *A high degree of intersubjectivity, together with a high degree of emotional entrainment – through bodily synchronisation, mutual simulation / arousal of participants’ nervous systems – results in feelings of membership that are attached to cognitive symbols; and result also in the emotional energy of the individual participants, giving them feelings of confidence, enthusiasm, and desire for action.... These moments of high degree of ritual intensity are high points of experience* (ref. 3.03).

Therefore: Bohm’s ‘Undivided Wholeness In Flowing Movement’ = Wittgenstein’s ‘FlùB’ = Gardner’s ‘Flow States’ = Csikszentmihalyi’s ‘Flow’ = Collins’ ‘Emotional Energy’

–The psychological circumstances when innovation occurs.

9.88 Although Csikszentmihalyi describes psychic energy in ‘flow’, it is not an existential or mystical hidden energy, but one that is overt as he later qualifies:

*After all, mystical experiences are not necessary to account for the performance of a great violinist, or a great athlete, even though most of us could not even begin to approach their powers.... Like all virtuos, he must spend many years learning, and he must keep constantly in training. Being a specialist he cannot afford the time or the mental energy to do anything other than fine-tune his skill at manipulating inner experiences....

Because no branch of science deals with consciousness directly, there is no single accepted description of how it works. Many disciplines touch on it and thus provide peripheral accounts. Neuroscience, neuroanatomy, cognitive science, artificial intelligence, psychoanalysis, and phenomenology are some of the most directly relevant fields to choose from; however, trying to summarise their findings would result in an account similar to the descriptions the blind men gave of the elephant: each different, and each unrelated to the others. No doubt we shall continue to learn important things about consciousness from these disciplines, but in the meantime we are left with the task of providing a model that is grounded in fact, yet expressed simply enough so that anyone can make use of it (Csikszentmihalyi, 1990: 25).

9.89 The ‘undivided wholeness in flowing movement’ as propositioned by Bohm is a necessary part of the process to arrive at art and poetry. It is a process that avoids the notion of ‘the fixed and final form’ (Ref. Bohm, 1980: 79) – to separate from the idea of atomistic certainty. Instead, it is to allow the free movement of the mind needed for clarity and perception, and thinking about totality is a necessity:

As indicated earlier, thought and totality as its content has to be considered as an art form, like poetry, whose function is primarily to give rise to a new perception, and to
action that is implicit in this perception, rather than to communicate reflective knowledge of ‘how everything is’ This implies that there can no more be an ultimate form of such thought than there could be an ultimate poem (that would make all poems unnecessary) (Bohm, 1980: 80).

**From Flow To Socio-Culture**

9.90 When Csikszentmihalyi propositioned his version of flow in 1990 (Ref. Csikszentmihalyi, 1990), he speculated that it was the result of liberty of the consciousness from the ‘shields of culture’ (p. 11) and institutions (p. 21) – it was an internal act, or as Bohm puts it, an implicit order. However, he also suggested that flow is achievable through training:

> In the first place, the kind of knowledge – or wisdom – one needs for emancipating consciousness is not cumulative. It cannot be condensed into a formula; it cannot be memorised and then routinely applied. Like other complex form of expertise, such as a mature political judgment or a refined aesthetic sense, it must be carried through trial-and-error experience by each individual, generation after generation. Control over consciousness is not simply a cognitive skill. At least as much as intelligence, it requires the commitment of emotions and will. It is not enough to know how to do it; one must **do** it, consistently, in the same way as athletes or musicians who must keep practicing what they know in theory....

> Control over consciousness cannot be institutionalised. As soon as it becomes part of a set of social rules and norms, it ceases to be effective in the way it was originally intended to be (Csikszentmihalyi, 1990: 21).

9.91 Later, in 1996, new thinking about creativity emerged and the socio-cultural bases for creativity began to be consolidated and emphasised. In concurrence with the researches of Gardner and Collins at the time, creativity became part of cultural activity, arrived at interactively, moulded in a chain of encounters. Collins argues that progressive human events are a result of an interaction chain of social activities and individual psychology forms only part of the activities (Ref. Collins, 2004: 4-6). Earlier in 1996, Csikszentmihalyi stated as follows:

> Therefore, to understand creativity it is not enough to study the individuals who seem most responsible for a novel idea or a new thing. Their contribution, while necessary and important, is only a chain, a phase in a process. To say that Thomas Edison invented electricity or that Albert Einstein discovered relativity is a convenient oversimplification. It satisfies our ancient predilection for stories that are easy to comprehend and involve superhuman heroes. But Edison’s and Einstein’s discoveries would be inconceivable without the prior knowledge, without the intellectual and social network that stimulated their thinking, and without the social mechanisms that recognised and spread their innovations (Csikszentmihalyi, 1996: 7).

9.92 To Csikszentmihalyi’s later thinking, culture plays an integral part in creativity, and that tends to happen at the intersections of different cultures:
It also seems true that centres of creativity tend to be at the intersection of different cultures, where beliefs, lifestyles, and knowledge mingle and allow individuals to see new combinations of ideas with greater ease. In cultures that are uniform and rigid, it takes greater investment of attention to achieve new ways of thinking. In other words, creativity is more likely in places where new ideas require less effort to be perceived (Csikszentmihalyi, 1996: 9).

9.93 Later again, in 2002, Florida explains the reason why creativity happens at these geographical locations:

Creative people always gravitate to certain kinds of communities, such as the Left Bank in Paris or New York’s Greenwich Village. Such communities provide the simulation, diversity and a richness of experiences that are the wellprings of creativity.... These communities are defined by the impermanent relationships and loose ties that let us live the quasi-autonomous lives we want rather than those that are imposed on us (Florida, 2002: 15).

9.94 Creative culture seemingly pervades at street level, where creators are able to interact and build upon it:

You may not paint, write or play music, yet if you are at an art show opening or in a nightspot where you can mingle and talk with artists and aficionados, you might be more creatively stimulated than if you merely walked into a museum or concert hall, were handed a programme, and proceeded to spectate....

The culture is ‘street-level’ because it tends to cluster along certain streets lined with a multitude of small venues. These may include coffee shops, restaurants and bars, some of which offer performance or exhibits along with food and drink; art galleries; bookstores and other stores; small to mid-sized theatres for film and live performance or both; and various hybrid spaces – like a bookstore/tearoom/little theatre or gallery/studio/live music space – often in storefronts or old buildings converted from other purposes. The scene may spill out onto the sidewalks, with dining tables, musicians, vendors, panhandlers, performers, and plenty of passersby at all hours of the day and night (Florida, 2002: 183).

9.95 William Lim refers to such a scene as a ‘celebration of chaos’, a characteristic of a postmodern city (ref. Item 8.27.1). In Singapore, a similar description occurred to Mohamed Sultan Road in the late 1990s, and in the turn of the millennium, similar activities shifted to Clarke Quay after the redevelopment there (ref. Items 8.45-9). Kwinter rationalises this phenomenon as part of a culture of ‘open system’:

For here, all systems are open systems; they are labile and suffused with temporality; they are sensitive and chaotic in the sense that they are creative and adaptive – they ceaselessly undergo change, produce novelty; they transform or transmit unactualised potentials to a new milieu, in turn giving rise to a whole new series of
potentials to be actualised or not. Open systems are not only open to ‘outside’, but to wild becoming itself – the outside of all outsides (Kwinter, 2002: 48).

9.96 Florida further states that creativity has both social and cultural bases:

Human creativity is multifaceted and multidimensional. It is not limited to technological innovation or new business models. It is not something that can be kept in a box and trotted out when one arrives at the office. Creativity involves distinct kinds of thinking and habits that must be cultivated both in the individual and in the surrounding society. Thus, the creative ethos pervades everything from our workplace culture to our values and communities, reshaping the way we see ourselves as economic and social actors – our very identities. It reflects norms and values and both nurture creativity and reinforce the role that it plays. Furthermore, creativity requires a supportive environment that provides a broad array of social and cultural as well as economic stimuli (Florida, 2002: 22).

9.97 Florida postulates that the ‘multifaceted and multidimensional’ facets of creativity is the reason that creative individuals are attracted to the eclectic urban culture favoured also by William Lim:

Think of the DJs in Harlem nightclubs of the 1970s who started the technique known as ‘sampling’ – frenetic mixing snatches of music from different records, on different turntables, for the crowd to dance to. Think of the proliferation of hyphenated music genres like Afro-Celt. Think of Warhol, Rauschenberg and a host of visual artists after them from appropriating images from new photos, comic strips, food packages, wherever. Eclectic scavenging from for creativity is not new. Picasso borrowed from African art as well as Greco-Roman classical forms; rock and roll pioneers melded blues and R&B; and one could argue that the literary DJ who really pioneered sampling was T. S. Elliot in The Waste Land, a poem built largely by stringing together, and playing upon, quotations and allusions from all corners of the world’s literature. Today, however, eclecticism is rampant and spreading to a degree that seems unprecedented. It is a key element of street-level culture – and eclectic taste is a social marker that can usually be counted on to distinguish a Creative Class person. Eclecticism in the form of culture intermixing, when done right, can be a powerful creative stimulus (Florida, 2002: 185).

9.98 The ‘powerful creative stimulus’ Florida speaks about involves interactive social and artistic happenings that intervene these urban fabrics, which could be staged performances, street theatre, street art or even creative conversations over a cup of coffee. The perceived free, eclectic and creative atmospheric setting allows these events to happen. Florida puts it as follows:

One can meet people, hang out and talk, or just sit back to watch tonight’s episodes of the human comedy. To many the social milieu is indeed the street’s main attraction. If that sounds a bit vapid and superficial, sometimes it is. This is not high art; it admits amateurs. Hanging in a sidewalk café does not deliver the exquisite and
carefully crafted artistic intensity of Beethoven’s Ninth. It is also true that some people, hitting the street-level cultural scene devolves into little more than cruising the single scene. And even when experiencing culture is truly the goal, if hanging out in nightspots frequented by artists and aficionados is how you choose to pick up your creative stimulations, you are going to pick up a lot of chaff along with it. You run the risk of becoming chaff yourself: a dilettante, a poseur, a gallery gadfly, a coffee-shop talker (Florida, 2002: 185).

9.99 Florida’s bohemian setting that reins in creativity is a cosmopolitan one, which would have ‘excitement and energy’, and enjoy a mix of influences. Florida describes the kind of place as ‘cosmopolitan’:

…. a place where anyone can be can find a peer group to be comfortable with, and also find other groups to be stimulated by; a place seething with the interplay of cultures and ideas; a place where outsiders can quickly become insiders. In her book ‘Cosmopolitan City’, Bonnie Menes Kahn puts it very simply. She says that a great city has two hallmarks: tolerance for strangers and intolerance for mediocrity. These are precisely the qualities that appeal to members of the Creative Class – and they also happen to be qualities conducive to innovation, risk-taking and the formation of new businesses (Florida, 2002: 227).

**Interaction Between And Within Domains**

9.100 The cosmopolitan setting is a microcosm of interaction of various domains. Csikszentmihalyi postulates that the interaction between domains is a condition for creativity – it is unlikely that creativity is achieved out of isolation:

Yet it is important to keep in mind that most breakthroughs are based on linking information that usually is not thought of as related. Integration, synthesis both across and within domains, is the norm rather than the exception. Madeleine L’Engle is inspired by molecular biology to write her stories; Ravi Shankar finds ways of harmonising music of India and Europe; and almost all scientists cross and recross the boundaries of physics, chemistry and biology in the work that turns out to be creative.

Even when not directly integrated in one’s work, other domains contribute to the overall mental life of creative individuals to the degree that belies the stereotype of the sterile, narrowly trained specialist (Csikszentmihalyi, 2002: 329).

9.101 The point Csikszentmihalyi makes is not that external opportunities determine a person’s creativity, but something more modest – in that no matter how gifted a person is, he or she has no chance to achieve anything creative unless the right conditions are provided by the external environment, field or domain. He identified seven elements in the social milieu that help make creative contributions possible:

In terms of what we have learned from the study, it is possible to single out seven major elements in the social milieu that help make creative contributions possible: training, expectations, resources, recognition, hope, opportunity, and reward. Some of
these are direct responsibilities of the field; others depend on the broader social system. If our argument is correct, then creativity can be substantially increased by making sure that society provides these opportunities more widely (Csikszentmihalyi, 2002: 330).

9.102 For example, before Bob Dylan began to write and played his own songs, he threw himself among various musicians and audiences at different clubs at Greenwich Village in New York in the early 1960s, already then known for its bohemian setting, a magnet for musicians and artists. Cameron Crowe, Dylan’s biographer observes as follows:

_The frail-looking Dylan was a voracious learner. Once in New York, he was at the centre of all action. It was a chance to actually see and sometimes meet the artists he’d come to admire, including Woody Guthrie. Dylan listened to everybody and took it all in. … Dylan soon developed a style that would synthesise many different folk influences. At this time, it was bold move. Even the stodgiest standards sounded different Dylan’s way_ (Crowe, 1985: 6).

9.103 What Dylan did was to take in all the different and rigid folk music around him from different parts of the U.S. and gave them a new musical attitude, which was influenced partly by the protest movement, and the cosmopolitan setting of Greenwich Village (ref. Crowe, 1985:6). Dylan’s innovation of American folk music was not at all a self-taught journey; but one that was at first a mastery of a particular predecessor. Dylan at first followed and mastered Woody Guthrie’s style before consciously breaking away, infusing other genre of music, like rock ‘n’ roll and rhythm and blues. What Dylan thought he did was merely to keep up with the times (ref. Crowe, 1985: 7).

9.104 Equally, in classical music, Boden suggests that ‘creative geniuses’ like Mozart does not have ‘special powers granted only to the artistic elite’; only a highly developed version of the power we all share (ref. Boden, 2004: 267). She suggests that myths were invented around these individuals, for example, letters which Mozart purported to have written, claiming sudden inspirations were later found to be spurious:

_Musicologists have rejected this spurious ‘letter’ since the mid-1960s. Yet, a quarter of a century later, it is still being cited without qualifications by some writers on creativity. It is, of course, seductively plausible – for it fits in with the romantic and even inspirational views, and endorses our hero-worship of Mozart to boot_ (Boden, 2004: 266).

9.105 It is similar in architecture. If we were to take Frank Lloyd Wright’s Prairie Houses for example, Boden dismisses the notion that Wright’s innovation is purely intuitive. She argues instead that Wright’s Prairie Houses follow grammatical constraints and is contained within a generic framework. In denigrating Koning’s and Eizenberg’s suggestion that Wright’s achievement of balance of the Prairie Houses is ‘occult’ – “inferring that the stylistic unity is a mystery, accessible only to the intuitive genius of Wright”; she argues instead: “the shape grammar apparently captures the crucial aspects
of the Prairie Houses” (Boden, 2004: 310). She explains that Wright’s organisation of the Prairie Houses is explicit:

Most of Lloyd Wright’s Prairie Houses have only one fireplace. Occasionally, however, he replaced the single hearth with several fireplaces. Because of the pivotal role of the fireplace in this particular style, to add a fireplace is to make a fundamental alteration to the overall structure. But it will still be recognised as an (unusual) form of the Prairie House. As the ‘grammarians’ responsible put it, varying the number of fireplaces generates ‘a veritable prairie village of distinct but interacting prairie-style designs’, all within a single building.

Since the grammar allows a range of choices at each point, one can move into various regions of the conceptual space differing from neighbouring regions in more or less fundamental ways. Distinct ‘families’ of houses inhabit different regions of the space, and our intuitive of architectural similarity and dissimilarity can be specified accordingly. The principle of unity is no longer occult, but has been made explicit (Boden, 2004: 310).

**Collective Interaction Rituals**

9.106 The terminology that Collins uses for the interaction between individuals or groups of people, is ‘Interaction Ritual Chains’. In the purview of interaction ritual (IR), architecture as an activity is a result of “momentary encounters among human bodies charged up with emotions and consciousness because they have gone through chains of previous encounters” (Collins, 2004: 3). This points to the case that architectural innovation is a cultural activity, arrived at interactively – it has social and cultural premise. Unlike existentialism, IR does not accept the permanence of uniqueness of individuals, as: “Individuals are unique to just the extent that their pathways through interactional chains, their mix of situations across time, differ from other persons’ pathways. If we reify the individual, we have an ideology…. but we cut off the possibility of explaining how individual uniqueness are moulded in a chain of encounters across time” (Collins, 2004: 4,5). Collins thus argues that human events result from an interaction chain of social activities and individual psychology forms only a part of IR chains (ref. Item 3.01).

9.107 Further to the interaction between and within domains, Collins’ ‘Interaction Ritual Chains’ propositions a collective motivation towards innovation through a mutual focus of attention towards a goal. What purports to happen, according to Collins is:

*A high degree of intersubjectivity, together with a high degree of emotional entrainment – through bodily synchronisation, mutual simulation / arousal of participants’ nervous systems – results in feelings of membership that are attached to cognitive symbols; and result also in the emotional energy of the individual participants, giving them feelings of confidence, enthusiasm, and desire for action.... These moments of high degree of ritual intensity are high points of experience* (Collins, 2004: 42) (ref. Item 3.03).
9.108 What is mutually focussed upon becomes the emblems, or cognitive symbols of the group. In the cult of innovators, canonical names and their works are the emblems that represent the group. Through the emblems the group focuses on its own feelings of intersubjectivity and shared emotions – it reifies its experiences. Collins explains IR role in this as follows:

One chief result of rituals is to charge up symbolic objects with significance, or to recharge such objects with renewed sentiments of respect. Along with this, individual participants get their own reservoir of charge. The ‘sort of electricity’ that Durkheim metaphorically ascribes to the group in its state of heightened excitement is stored in batteries: one component of which is the symbol, and the other pole of which is the individual. Participant in the ritual gives the individual a special kind of energy, which I will call emotional energy (Collins, 2004: 38) (ref. Item 3.04).

9.109 In Collins’ Interaction Ritual Theory, what motivates the architect in the cult of innovators is to be recognised as an emblem of the group. The innovative architect who has become an emblem, or cognitive symbol of the group equates with the way a politician, a religious leader, or a sports figure can become emblems for other IR groups. The emblems are essential for the prolongation of the group, as they become subjects for third-person narrations, gossips and are subjects of conversation within the network: “Both individual names and narratives about them are symbols, which get charged up with significance through the amount of momentary effervescence of the conversations in which they play a part” (Collins, 2004: 85). The emblem then becomes mythic as: “The accuracy of these accounts is a minor consideration in successful conversational ritual, and the further the network goes from the source, the less a consideration it becomes at all” (Collins, 2004: 85). There is also perceived profit in this for emblems whose names are canonised and mythicised, as they are situated at the pinnacle of an elitist group (ref. Item 3.05).

9.110 In sociological terms, the emblem of the group acts also like the sacred symbol for the group: it provides a flow of emotional energy to the group. What the innovative architects, when recognised as emblem has gained over the group is asymmetrical power, under this circumstance, Collins explains that, “Power is an asymmetrical focus of attention upon such a situation, so that one side battens on the energy that all the participants have mutually produced. In a power ritual, the social battery is revved up, but the benefit goes largely to one side” (Collins, 2004: 125). It is thus evident that the emblem gains not only social significance (ref. 3.05) but also power and becomes the main beneficiary of collective emotional energy. The type of emotional energy associated with such gain would be joy and enthusiasm (ref. Collins, 2004: 125).

9.111 According to Collins, there is asymmetrical stratification of emotional energy within the group, and that the emblem fits analogically, in an energised upper class, “Lording over a depressed lower class, with moderately energised middle-class persons in between” (Collins, 2004: 132). Taking this pattern, the winning innovators become the ‘energy stars’ – they become socially significant and would appear as such:
Persons with lower amounts of EE (emotional energy) are impressed by those who have accumulated a lot of it; such people have an EE-halo that makes them easy to admire. They are persons who get things done; they have an aura of success surrounding them. And since having high EE allows one to focus attention, one can get a certain amount of rise in one’s own EE by following them... This high EE gives dominant persons a kind of micro-situational legitimacy (Collins, 2004: 132, 133) (ref. Item 3.09).

9.112 Interaction Ritual (IR) theory infers that individual behaviour is shaped by ritual participation, and that EE operates as the common denominator in the determinant of choices made between various courses of action and behaviour: “Emotional energy is the common denominator of all social comparisons and choices” (Collins, 2004: 172). Under IR theory, the investment of emotion, energy, costs and time is intended to result in emotional energy benefits. In architectural innovation, the benefit to the innovator is to be accepted as an emblem of the group with all the benefits raised in 3.08. Hence:

\[
\text{IR maximise ratio} = \frac{\text{benefits (EE)}}{\text{investments (EE + time + material)}}
\]

According to Collins, “the theory of maximisation ration is more powerful when applied to emotional currency of social life and the structures of interaction that produce it” (Collins, 2004: 182) (ref. Item 3.10).

9.113 According to Collins’ theory, an intensive network between successful innovators enables architectural innovation: successful innovators have more network ties to other successful innovators than less successful innovators do. It infers that great innovators are more closely connected to other great innovators than are those in the lower rungs of innovation, and minor innovators have fewest ties of all. To Collins, “In the case of ideas we are concerned with here, the ideas which have mattered historically, it is possible to demonstrate that the individuals who bring forward such ideas are located in typical social patterns: intellectual groups, networks and rivalries” (Collins, 1998: 3) (ref. Item 3.11).

9.114 Taking philosophers for example, Collins observe a chain of mentoring both upstream and downstream and, “across the generations both backward and forward in time. Great philosophers have more pupils and grandpupils who are relatively successful than lesser philosophers do; intellectual success propagates forward but also backward – having pupils who do important work is part of what gets an individual a long-term historical reputation as having had very important ideas” (Collins, 2004: 190). This observation could equally apply to architectural innovators, and the reasons given by Collins from the IR perspective could be said of architectural innovators:

One of the reasons why there tend to be a chain from one highly creative intellectual to another is that the younger persons draws energy from the older just as such a symbolic hero. It is not merely a matter of transmitting cultural capital from one generation to the next, since we are dealing here with creative departures rather than
loyal discipleship. The protégé’s consciousness is filled by the image of what it is to be an intellectual hero, by an ideal to emulate, even while one challenges the content of the master’s ideas (Collins, 1998: 36) (ref. Item 3.12).

9.115 In architecture, the modern movement would not be the same without the mentorship of Behrens on: Gropius, Mies van der Rohe, Meyer and Le Corbusier – all of whom were apprenticed to Behrens in the early twentieth century, albeit at different times (Ref. Item 9.28). The success of the Architectural Association during the chairmanship of Alvin Boyarsky between 1971 and 1990, in nurturing talents into important architects is owed to a system of mentorship, where students chose a mentored unit in a system of units (students were allowed to move from one unit to another), each of which was headed by a talented practitioner, acting as a mentor to the students. Boyarsky’s own innovative idea was to get rid of the standard curriculum system and replace it with the unit system (ref. van Schaik, 2005: 30). Van Schaik describes as follows:

The innovation was quite deliberate to construct a series of enchainments through this web of activity. He curated a series of units into the Intermediate and Diploma Schools that had tentacles back and forth to three strongly contrasted positions in first year. Students would sample all positions during their studies, or they could choose a deep exploration of one (van Schaik, 2005: 194).

9.116 Van Schaik observes that Boyarsky was in effect working toward a community of practice where enchainment could take place. Van Schaik identified the key elements needed by this community, which had happened at the AA at the time:

- Diverse propositions in close contact with each other.
- Enchainment structures across generations pursuing these propositions.
- Discourse generated by these propositions.
- Capturing the discourse as a series of platforms of mastery…. (van Schaik, 2005: 194).

9.117 Other than vertical network between mentors and pupils, Collins also propositions horizontal networking between peers, where redundancy networking produces a strong sense of collective identity (ref. Collins, 2004: 193). In architecture, innovators often acquaint themselves in the same forum where they meet to propound their latest works, and the same innovators appear in often the same publications where they tend to compare works.

9.118 In ‘Creative Minds’ (1993), Gardner says that even the giants of innovation in the twentieth century often knew one another, and they take into account innovative conceptualisations done in domains other than their own:

It is important that individuals like Picasso and Stravinsky were friends in late life. Freud and Einstein had a casual acquaintance and engaged in a memorably pointed correspondence about war. Certain ideas associated with these creators become such common coin that anyone working during the era would have encountered them.... It
would be odd if highly creative individuals did not somehow take others’ novel conceptualisations into account in their own work (Gardner, 1993: 15).

9.119 He is to reassert this again in ‘Multiple Intelligences’ in 1999, when speaking about individuals, Gardner infers that innovators do not appear from nowhere but are part of societal, or cultural network: “Individuals do not exhibit their intelligences ‘in the raw’; they do so by occupying certain relevant niches in their society, for which they must prepare by passing through an often lengthy development process. In a sense, intelligences have their own developmental history” (Gardner, 1999: 38).

**Self-Curation**

9.120 To be an innovator, however, is not simply a matter of mere enchainment with mentor and peers but of possessing distinguishable differences, where there must be an emergence of strong ideas and originality. Van Schaik speaks about self-curation in the final zone of ‘Mastering Architecture’, which is a managed process that would finally turn mastery into creative breakthroughs, and toward innovation:

*This is a reflective process, which when properly understood can be managed as a process of ‘self-curation’. Becoming a curator of yourself is a way of: knowing how to handle yourself at each stage of your journey as an individual creative person; locating yourself in the supportive and challenging environments that forge mastery; finding those peers who help you to transform mastery into a platform for intellectual change; and seeking out those situations that clarify your creative breakthrough into innovation* (van Schaik, 2005: 21).

9.121 Van Schaik identified two orders of self-curation: a first order, which is the critic, and a second order. It would be the pursuit of the second order that would open up options toward innovation:

*We have encountered the critic as a curator, and we have found in this a useful distinction between the classicising, ‘first-order’ curating that seeks objectively to define a canon and close down exploration and a ‘second-order’ curating that opens up option for further innovation by including the subjectivity of the curator within the act of curating* (van Schaik, 2005: 214-5).

9.122 In van Schaik’s pedagogical work, he encourages innovative practitioners to put themselves in the position of second-order curators where they work toward: “creating a perspective of themselves in theatres of their mastery or in the galleries of their innovation” (van Schaik, 2005: 215). His intention is, in the process of self-curation, the practitioners become conscious of the processes. The aim seems to be for the practitioners to be made consciously aware through lateral processes, through the use of media other than those of their everyday practice:

*Self-consciousness equates with awareness, yes, but more than that is needed. Awareness must be couched with the frames of current theory, and awareness must be*
expressed in mediums other than those of your everyday conversation and your everyday practice (van Schaik, 2005: 216).

9.123 As a practice toward second-order self-curation, in exhibitions or publications, practitioners are encouraged to express themselves laterally through in mediums other than the presentations of their architecture. In giving an account of their current positions, they present as follows:

– Through your visualisation of yourself as a creative innovator on a stage that is designed around our slowly evolving understanding of the ‘natural history of the creative individual’.
– Through your visualisation of yourself as a strategic player in the theatre of ritualised public behaviours that characterise your chosen field within your chosen domain.
– Through your visualisation of yourself as player between fields, a joiner of the horizons of different domains.
– Through your visualisation of yourself as a theorist, organiser or patron who can choose to open up options or close them down (van Schaik, 2005: 216).

9.124 Some of the key features of the second-order self-curation are: 1) It is explicit and expressible, also being able to express beyond the tools of one’s domain; 2) Understand and being aware of one’s current position relative to others within the domain; 3) Strategise one’s position within one’s domain; 4) Interaction between and with other domains; 5) Beyond simple practice, suggestion of being a theorist, organiser or patron; 6) It is a continual learning process, not to close down options and seek out learning communities.

9.125 Working with the staff at RMIT, van Schaik developed a model for a learning concourse (ref. van Schaik, 2005: 228). The learning concourse is to counter the first-order environment where learning is envisaged as ‘a lonely encounter between individuals and a curriculum’ (ref. van Schaik, 2005: 218). In the second-order environment, learners act independently as self-curators and what they seek from their educators are: “guidance, mentoring and facilitation, help with keeping in touch with what they should be seeking out for themselves as self-curators…. Clustered into fields of interest, they could then scan the concourse for learning opportunities that service their understanding of their own development” (van Schaiik, 2005: 219). Van Schaik further characterises the learning concourse as follows:

The concourse offers an environment in which mastery can be established against selected local resistances and enchainment. It also allows mastery platforms, and accommodates connections between peer group communities from several such concourses. This concourse is sufficiently spatial to enable browsing and enchainment to take place in architectural space, rather than the click-through, page-on-page realm of the paper simulations of desks and filing cabinets that dominate virtual space today (van Schaik, 2005: 228).
9.126 The participants in van Schaik’s learning concourse are individuals – even if the participants participate in groups, individuals’ contributions to the groups are recognisable. Enchainment seemingly must begin with the individual’s motive, who may seek enchainment firstly with a group, or she may not. The learning concourse then provides the physical avenue for vertical and lateral enchainment. It encourages interaction within the domain and between domains. Many of the would-be mentors invited to the concourse are non-architects, providing an open portal for lateral interaction between domains. The learning concourse is the realisation of Collins’ Interaction Ritual Chains, a tailor-made portal for architectural innovation. But firstly, what are the things that first motivate the individual to want to join the learning concourse and seek mastery and innovation, and how would the mental processes work?

**Themata As Motivation**

9.127 Briggs attempts to quantify the mental process leading toward innovation, but he first of all rejects the reductionist view. He eschews the attempts to squeeze the mental processes to a simple cluster of traits or attributes, and differing from say, Boden’s computational imagination. Following the work of Holton, Briggs suggests that there are hidden elements in the minds of innovators, which is termed as ‘thematic ideas’, which are clusters of presuppositions and ‘gut’ assumptions, which are called ‘themata’: themes. Using scientific discoveries as examples, Briggs explains as follows:

*For the most part themata are aesthetic qualities like the assumption that the universe is basically symmetrical, or the opposite assumption that it’s symmetrical…. ‘normal’ science share basically the same set of underlying assumptions. Scientists who end up revolutionising their fields appear to have a collection of themata at variance in some significant ways with the theme clusters held by most of their colleagues (Briggs, 2000: 26) (ref. Item. 7.04).*

9.128 Themata are seen as guiding visionary elements connected to the innovator’s emotional life. Briggs speculates that when Einstein theorises on light, like the way he elevates the speed of light to the status as the only constant, or invariance, it might have something to do with unconscious biblical significance as part of his childhood influence; “linking him to the themes that were part of his childhood sense of a religious paradise. In relativity theory, light becomes the cornerstone of universal order” (Briggs, 2000: 30). He speculates that innovators have a higher commitment to the pursuit of their idiosyncratic ensembles of themes than their less creative colleagues:

*Colleagues may ignore, even suppress some of their own subliminal thematic perceptions because they are not perceptions that people around them acknowledge.*

*Great creators are different in the sense that they feel compelled to show the world that their themata in fact point to a hidden reality that people pursuing the consensual themata of the moment have failed to notice.*
The strength of this commitment is so powerful that rather than bend or suppress personal themata in order to carry on a successful career…. some (innovators) have switched fields looking for a place where their themata could attain full expression (Briggs, 2000: 32) (ref. Item. 7.06-7).

9.129 Van Schaik’s learning concourse intentionally provides an outlet for the manifestation of innovators’ themata, and also through the encouragement of second-order self-curation:

What I am citing are all instances of architects searching for learning communities appropriate to their needs as innovators. This is what the self-curator begins consciously to do. Left to chance, some people stumble on the mechanisms at work, while others are consumed by their anger, frustration and a sense of being misunderstood…. This has arisen from a critique of first order modes of education and an espousal of a model for second-order learning. In the first-order environment, learning is a lonely encounter between individuals and a curriculum. They study without access to models of development or association within learning communities (van Schaik, 2005: 218).

Nuances In Mental Processes

9.130 Working in tandem with themata are ‘screen memories’, which provide nuances to the themata. The ‘screen memories’ are to themata as much as shades and tones are nuances to colours (ref. Item 7.08). Further to this, Briggs propounded examples of works of writers, poets, musicians and artists. He suggests that: “an emotional and aesthetically images can’t be verbalised. It is a matter of nuance”. After studying many innovators from various domains: wherein Briggs quotes Virginia Woolf, John Keats, Beethoven, Georgia O’Keeffe, Louise Nevelson, Albert Einstein, Isaac Newton, Copernicus, Kepler, Charles Darwin, Nikola Tesla and Marie Curie (ref. Briggs, 2000: 36-47) – he concludes as follows:

What do all these cases show? It appears that for many (innovators), an obsession with some particular nuance or complex of nuances burns at the core of vision. For other (innovators), a general sensitivity to certain classes of nuances may be significantly at play. Such sensitivity would help a scientific creator, for example, sort out the relevant details from what is called the ‘noise’ in the experimental situation and go straight to the heart of the matter. Nuance and themata are clearly related. Nuance is the aura or nimbus that surrounds a thema or several themata, the energy that infuses thematic convictions (Briggs, 2004: 47).

9.131 Nuances which have emotional contents are termed by Briggs as ‘feeling tones’, which was first developed in the research of William Gray and reformulated by Paul LaViolette as a psychodynamic and neuroanatomical picture of how the brain is organised (ref. Briggs, 2000: 48). Feeling tones are emotional nuances that are logged in the brain through thoughts and memories. Gray suggests that even in the ordinary course of thought, emotional nuances are evoked even if no attention is paid to them. To
elucidate this, Briggs borrows Gray’s example of a simple cognition: take the cognition, $2+2=4$:

*Try to remember what it must have felt like to learn that concept. Something called $2$ has a feeling to it. The process of adding, the process of equalling and something called $4$ also have feeling to them. There must have been a small amazement, a shock to the brain, at being shown or told that all these nuances form an order. The order, $2+2=4$, now has its own nuance that includes a sense of finality or closure, a sense that ‘this is the way it is’. Eventually that nuance-with-closure overshadows the others until $2+2=4$ seems to be pure cognition, a rational thought with no emotion at all. That isn’t true of course. Thoughts always have emotion connected to them and, in humans, emotions are mostly set in motion by thoughts.*

*According to Gray, thought-emotions become associated together into structures vastly larger and more complex than $2+2=4$. The structures include, for example, our knowledge of mathematics as a whole (Briggs, 2000: 49) (ref. Item. 7.12).*

9.132 According to LaViolette, a closed-loop network of neurons connects the limbic organs of the human brain, in what is called the Papez circuit. They trigger feeling tone responses and generate what Gray and LaViolette call an emotional ‘theme’, which is similar to a musical theme – an organised pattern of feeling tones or musical notes (ref. Briggs, 2000: 52-3). LaViolette proposes that the waveforms that circulate through the Papez circuit evoke long-term memories, where these memories in turn become part of the evolving ‘theme’. In similar vein, Bachelard speaks metaphorically about the poet’s dynamic imagination, which has integrative powers that enable us to incorporate images. He takes the metaphor of an upside down tree, and describes it emotively:

*... whose roots, like a delicate foliage, tremble in the subterranean winds while it branch take root firmly in the blue sky.*

*I believe that there are objects which have integrative powers, things which enable us to incorporate images. For me, the tree is an integrative object. It is normally a work of art.... The imagination then took possession of all the powers of plant life.... Immediately, within us, we feel the roots working, we feel that the past is not dead.... The tree is everywhere at once. The old root – in the imagination there are no young roots – will produce a new flower. The imagination is a tree. It has the integrative virtues of a tree. It has roots and boughs. It lives between earth and sky. It lives in the earth and in the wind. The imagined tree becomes imperceptibly the cosmological tree, the tree which epitomises a universe, which makes a universe (Bachelard, 1971: 84-5) (ref. 7.13-4).*

9.133 Briggs describes the mental condition that nurture emotional nuances not as a cognition, but a ‘brain state’, which was not mainly thought but also not mainly feeling, and not mainly perception. Briggs describes it as a kind of ‘pulsation in a field of nuance’:
... a state in which feelings, thoughts, memories and perceptions flowed vividly into each other and were inseparable. The words ‘emotion’, ‘nuance’ and ‘feeling-tone theme’ do not imply that the state is emotional in the ordinary sense of the word emotion, nor should we conclude that nuances do not importantly contain thoughts.

Thoughts are obviously an immense and indispensable feature of a creator’s mental activity in all phases of creative process. It’s only when a child begins to formulate cognitions that creativity as we recognise it becomes possible. However, creators seem inclined to keep their thoughts pulsating in a field of nuance rather than having them dominate the field (Briggs, 2000: 55-6) (ref. Item 7.19).

9.134 Bachelard’s proposition of childhood memories of spaces in a dwelling resonates something similar, which is familiar to architects:

The house that we were born in is more than an embodiment of a home, it is also an embodiment of dreams. Each one of its nooks and corners was a resting-place for daydreaming. Our habits of a particular daydream were acquired there. The house, the bedroom, the garret in which we were alone, furnished the framework for an interminable dream.... In point of fact, we are in the unity of image and memory, in the functional composite of imagination and memory.... What special depth there is in a child’s daydream! And how happy the child who really possesses his moments of solitude! (Bachelard, 1964: 15-6) (ref. Item 7.20).

**Innovator’s Individual-Universal Equation**

9.135 Briggs suggests that innovators see their works as manifestation of universal truths – in holistic and cosmic terms. Mozart, for example said that a piece would grow on him until “the whole, though it be long, stands almost complete and finished in my mind so that I can survey it, like a fine picture or a beautiful statue, at a glance. Nor do I hear in my imagination the parts successively, but I hear them, as it were, all at once” (Briggs, 2000: 82). In bringing this kind of discussion to the surface, Bohm calls it ‘implicate order’, wherein lone images are transformed into an organic whole rather than a succession of images, which is common to all works of art (Bohm and Peat, 2000: 189) (See also Items 9.80-3).

9.136 John-Steiner explains that the innovator is driven by the largeness of her goal compared to the ordinary person, who is ordinarily content with repetitions:

These characteristics of creativity – its developmental nature, linking of overt and covert processes, and the construction of an open-ended and regenerative system – may also be seen in the lives lacking the distinction of creative achievements. What is the difference?

The difference lies in the intensity and continuity of the creative individual’s mental life. Work in the market place is discontinuous; one is given a task, which once completed leads to another, a discreet assignment. Daily thought, which accompanies these daily challenges, also has a certain discontinuity. Once we close the door behind
our paid work, we also tend to close our mind to it. Indeed, ordinary, repetitive work needs to be extrinsically rewarded because it lacks the intrinsic rewards of sustained, continuous labour (John-Steiner, 1985: 221) ref. Item 7.22).

9.137 The innovator is hence driven to recreate whole systems. The innovator therefore uses the products of creative activity to identify the self with the whole in the desire to become the centre of a universe. With deference to the creative side of art, particularly, in the domain of painting, Bohm and Peat attempt to make comparisons with of creative art with their experiences with creative science. Their objective description, using terms ‘matrix of ideas’ and ‘inward perception’ correlates with Bachelard’s poetic description of architectural spaces, which they reinforce from another perspective:

 Yet all sensory data are deeply influenced by a person’s background and disposition. In the case of the artist, this includes everything that has gone before…. as well as with the artist’s relationship to the subject.

 Psychological experiments have established that visual perception is clearly conditioned by the circumstances in which that perception takes place, for example, the ‘meaning’ of the scene and which questions are put to the viewer at the time. Clearly the artist is not immune to this process and the ‘artistic vision’ arises out of an outward communication with a vast matrix of ideas, social predisposition and so on. In addition, the artist is also very much concerned with the ‘inward perception’, a vision through the mind that is not dissimilar to that experienced by the (creative) scientist…. Indeed the final painting must take its place within an artistic matrix that stretches over space and time (Bohm and Peat, 2000: 105) (ref. Item 7.23).

Nuance Of Sense And Intelligence

  9.138 ‘Synesthesia’ is a concept developed from the mixing of senses and intelligences. Some of Gardner’s intelligences like spatial and bodily-kinesthetic intelligences have a degree of sensory content; while others like logical-mathematical and linguistic intelligences are high in conceptual content. All seven intelligences, in turn, are mixture of core intelligences, having various levels of sensory and conceptual contents. Synesthesia goes beyond the ordinary mixing of senses that takes place in the consciousness. Briggs describes it as “sense and intelligence mixing in unusual patterns of perception and thought” (Briggs, 2000: 167). Briggs uses Jean Love’s quote on Woolf’s experience as an example of synesthetic experience:

“... highly pleasant emotions came with synesthetic sensation. That is, she was enormously and pleasurably excited when sights, sounds, and other sensations seemed unified with each other. She was elated when her inner sensations seemed to be fused with sensations coming from the world around her. She remembered being intensely aware of the diffusion and unity of all her sensations and emphasised that a sense of unity and wholeness was essential to her feeling of pleasure…. She associated the sense of wholeness with her writing” (Briggs, 2000: 167) (ref. Items 7.25-6).
Although ‘synesthesia’ is a mental condition, same or similar with Gardner’s ‘heightened attention’, Csikszentmihalyi’s ‘flow’ and Collin’s ‘emotional energy’, it however has an extension towards specialisation. It follows Gardner’s theory of ‘multiple intelligence’, and suggests that the innovator “experiences a synesthetic mix of intelligences that chemically alters the intelligence or talent that governs their creative field”. To elucidate this, Briggs proposes as follows:

For example, in the creative field of literature, the talents required for writing lyrical poetry or short stories are not the same as those required for writing novels. In novel writing dramatising characters demand a high degree of what Gardner calls the interpersonal and intrapersonal intelligences. That doesn’t mean the creator needs to be good at getting along with people or at living a well-balanced intrapsychic life – but a novelist does need a capacity for insights in these areas…. Woolf in fact possessed the kind of eidetic sense memory….

This illustrates another facet of the uniqueness of talents: Each creator embodies a unique constellation of ancillary intelligences which (s)he brings to bear on the field in which the principal creative talent is exercised (Briggs, 2000: 172) (ref. Item 7.29).

Architectural innovations could often be traced to synesthetic influences. Biographers have speculatively traced Frank Lloyd Wright’s geometrical innovations to the synesthetic interest in music, the various fields of arts, Japanese prints, love of nature and the Froebel blocks he played with as a child:

His sister, Maginal recalls: He couldn’t leave the (the piano) alone, and he would experiment, moderating tempo and tone and bring out the expression called for…. He loved to show off his mastery of certain passages so that they sounded as if they were really being played by a virtuoso (Secrest, 1992: 135).

His sons Lloyd and John recall: Soon there were Japanese prints as well, which Lloyd helped unwrap, unbook, clean and mount…. He introduced them to music, poetry, art; he had a love of nature and a Welsh belief in spirits (Secrest, 1992: 136).

Since (Wright) always organised his floor plans using the intricate patterns he learned from the Froebel blocks – he once said that he saw the method’s possibilities anew when his own children began playing with them…. this gave his designs, however modest or ambitious, uniform dimensions and properly orchestrated axes and directions to his houses (Secrest, 1992: 168) (ref. Item 7.30).

**Nuances In Mental Crystallisation**

In his thesis, ‘Aspects Of The Theory Of Syntax’ (1965), Chomsky formulated the first model towards the mental crystallisation of language, which makes explicit mental structures. See Items 7.31-3 for details. The thesis was incomplete as it did not arrive at a schemata for creative innovation. Chomsky calls the early model ‘Standard Theory’. In the 1970s Chomsky arrived at the ’Extended Standard Theory’
wherein, surface structure plays a primary role in semantic interpretation whereas previously, semantic interpretation was arrived only from deep structure (ref. Item 7.34).

9.142 What is essentially new in the ‘Extended Standard Theory’ is the concept of ‘trace’, $t$, which is a nuance, marking the position of an element that has been displaced by a transformation. Chomsky propositions that:

Within the framework of trace theory, one can even go further and say that all of the semantic representation, including thematic relations, can in a sense be derived from surface structure: to be sure, with a considerably enriched notion of ‘surface structure’, because the new surface structures contain traces, in terms of which thematic relations as specified by the base rules can be reconstructed (Chomsky, 1979: 164) (ref. Item 7.35).

9.143 The ‘Extended Standard Theory’ proposes a non-linear process of thought where traces, $t$, is shown in surface structure, “in terms of which thematic relations as specified by the base rules can be reconstructed” (Chomsky, 1979: 164). Surface structure is close to the location of ‘logical form’ which can be expressed ostensively. Conversely, the trace is returned to surface structure as, “a sort of memory of deep structure recorded in the surface structure” (Chomsky, 1979: 165). The resulting schema proposed by Chomsky is as follows (See Item 7.36 for details and further information):

![Figure 9.143](image)

9.144 On ‘logical form’ above, Chomsky does not have a specific notion for it and infers that it is variable. The terminology, ‘deep structure’ above does not mean that it is something invariant: “…. people have apparently been misled by the word deep and confuse it with invariant. Once again, the only thing I claim to be ‘invariant’ is universal grammar” (Chomsky, 1979: 172). By making surface structure and deep structure variable, Chomsky encourages creativity within grammatical rules. Using creative work in science as analogy, Chomsky describes as follows:

*What you expect of a scientist is to discover new principles, new theories, even new modes of verification…. That won’t happen by learning a fixed procedure. The same is true of linguistics today. It is impossible to explain to someone the procedure he must apply in order to find the generative grammar of some language. What one looks forward to is the discovery of new phenomena that will show that the theories that have been
proposed are false, that they must be changed – new questions that no one has thought of posing before, at least in a clear manner, new contributions to understanding, achieved perhaps with new ‘methods’. And finally, new ideas and new principles, which will reveal how limited, false, and superficial are the assumptions that we hold to be valid today (Chomsky, 1979: 179) (ref. Item 7.39).

9.145 Chomsky’s ‘deep structure’ is not something that is mysterious. It merely is phonetic interpretation, which is captured by trace theory, and it “designate a precise stage in the derivation of a sentence” (ref. Chomsky, 1979: 173, 183). It is symmetrical to ‘surface structure’, which is semantic interpretation. Chomsky’s models for the structures that determine the mental process for the competency of language could possibly apply to other domains. He assumes that the mental requirements for visual competency, for example, would be similar to that for language:

It is possible that the theory for face perception resembles a generative grammar. Just as in language, if you suppose that there are base structures and transformed structures, then one might imagine a model which might generate the possible human faces, and the transformations which would tell you what each face would look like from all angles…. the human perceptual system is not learned, but is rather an innate capacity, perhaps specifically related to language, though this is debated (Chomsky, 1979: 52) (ref. Item 7.41).

9.146 Using the Chomsky’s premise that the mental processes for language competency and visual competency are similar, Chomsky’s model for the Extended Standard Theory is adopted to structure the thought process for visual competency. The variability of the ‘Extended Standard Theory’ provides a further extension towards a structure for visual innovation.

The proviso for the structure is an assumption of rules, for without which according to Chomsky, “we have arbitrary and random behaviour, not creative acts” (Chomsky, 1975: 133).

The basis for Chomky’s structure is, “a system of intellectual organisation, call it the ‘initial state’ of the mind (Chomsky, 1975: 137) – The base for both the linguistic and visual abilities are innate, according to Chomsky: “Thus the theory of faces (like language) might be innate, though fully functional only at a particular stage of development” (Chomsky, 1975: 145). The modified diagram for visual innovation adopted from Chomsky’s model would become something like this (ref. Item 7.42):
Beyond Chomsky, Contexts In Mental Crystallisation

9.147 Chomsky's type of mental structure is purely cognitive, however in architecture, external factors needs to be addressed. Quoting Gruber, Briggs suggests that contextual conditions can be created mentally: “Gruber calls this pearl-making ‘constructing a point of view – the slow process by which the thinker constructs the mental circumstances of his own insights” (Briggs, 2000: 261). Briggs further suggests that: “Building a point of view means creating a context that unites the creator’s amorphous vision with the outward requirements of the creative field and its audience” (Briggs, 2000: 262). What is achieved through the shift of mental context, according to Briggs’ study of Conrad’s work, is the ‘inward voice that decides’, wherein:

The whole movement to evolve that inward voice entails linking feedback loops which join talent and vision, with the problem or material the creator is focussing on, with insight strategies, and with the tradition of the creative field. These interlocking loops, at a certain point (indicated in some creators by a ‘crystallising’ moment) interact to form what system theorists call a ‘self-organising structure’ (Briggs, 2000: 265) (ref. Item 7.46).

9.148 The shift of mental context is continuous, evolving from one magnum opus to the next. Towards the end, anything can happen – the vision may be as different in the early stages from its later stages:

Vision evolves, the creator evolves, the magnum opus leads to a new magnum opus – otherwise the creative life dies. The completion of a work, the acceptance of a work by its intended audience, changes in the creator’s personal life, historical changes.
– all have an effect on the further development of the creative enterprise.... Anything may happen. The vision may be as different in the early stages from the later stages (Briggs, 2000: 268) (ref. Item 7.47).

9.149 The prevailing mental context is thus precursor to the degree of the innovator’s creativity. This is thus situated early in the mental crystallisation toward creativity.

The only other area that needs to be included in a final model for the mental process leading to innovation is ‘synesthesia’, which is the “sense and intelligence mixing in unusual patterns of perception and thought” (Briggs, 2000: 167). ‘Synesthesia’ is thus located later in the process. ‘Synesthesia’ necessarily interacts with nuances.

![Figure 9.149](image)

**Emotional And Intuitive Contents In Reason**

9.150 The structure for the generic mental process, which starts with Chomsky’s ostensive, objective and scientific structure (Figure 9.143), has become one that necessarily includes regions of subjectivity, concluding with Figure 9.149 above (See also Items 7.31-7.48 for further details). The lower boxes, containing ‘Themata’, or Thought-forms and ‘Feeling Tones’ (nuances) are necessary regions of subjectivity that accompany mental processes. By necessity the structure of architectural innovation needs also to include psychological subjectivity to complete the picture. For example, based on the researches of William Gray and Paul LaViolette, ‘feeling tones’ are emotional nuances that are logged in the brain through thoughts and memories and these are psychodynamic – in the sense that they cause mental pictures to shift. Wittgenstein had already predicted this in 1953 through pure cognitive deduction and propositioned the duck and rabbit picture (Wittgenstein, 1953: 194).
9.151 Wilson for example states that mental activity is not divorced from emotional content, both of which are inextricably linked. Similar to Briggs’ arguments for ‘themata’, Wilson provides the biological rationale:

**Much of the input to the brain does not come from the outside world but from internal body sensors that monitor the state of respiration, heartbeat, digestion, and other physiological activities. The flood of ‘gut feeling’ that results is blended with rational thought, feeding it, and being by it through reflexes of internal organs and neuro-hormonal loops** (Wilson, 1998: 123).

9.152 From the biological perspective, scenarios of consciousness is driven by stimuli, drawing upon memories of prior scenarios that are weighted and modified by emotion. Wilson describes the emotion, which recalls and rationalises Bachelard’s poetic narrative of his experience the house (ref. Bachelard, 1958):

> *It is created by physiological activity that selects certain streams of information over others, shifting the body and mind to higher or lower degrees of activity, agitating the circuits that create scenarios, and selecting ones that end in certain ways. The winning scenarios are those that match goals preprogrammed by instinct and the satisfaction of prior experience. Current experience and memory continually perturb the states of mind and body. By thought and action the states are then moved backward to the original condition or forward to conditions conceived in new scenarios* (Wilson, 1998: 123).

9.153 Wilson emphasised that emotion is essential to rational thought and suggests that rational thought slows and disintegrate without emotion, and further suggests that the mind cannot simply float above the irrational to become purely rational (Ref. Wilson, 1998: 123). To further reinforce this, he suggests that, “Consciousness is not a remote command centre but part of the system, intimately wired to all the neural and hormonal circuits regulating physiology” (Wilson, 1998: 124). This recalls again the work of Bohm and Peat, wherein the mental process leading toward creativity is a holistic one (ref. Bohm and Peat, 2000: 105, Items 7.23, 9.137). Another scientist, Leo Szilard, a physicist and biologist makes a similar point:

> *The creative scientist has much in common with the artist and the poet. Logical thinking and analytical ability are necessary attributes to a scientist, but they are far from sufficient for creative work. Those insights in science that have led to a breakthrough were not logically derived from preexisting knowledge: The creative processes on which the progress of science is based operate on the level of the subconscious. Jonas Salk has forcefully articulated the same insight and proposed that creativity rests on a ‘merging of intuition and reason’* (Damasio, 1994: 189).

9.154 Creativity involves decision-making out of myriads of options available, spreading from within the domain to available choices outside of the domain. The mathematician Poincaré suggests that intuition is a covert mechanism in the mind that
makes the relevant decisions in the act of creation. For example, speaking about creativity within his domain, he states:

_In fact, what is mathematical creation? It does not consist in making new combinations with mathematical entities already known. Anyone could do that, but the combinations so made would be infinite in number and most of them absolutely without interest. To create consists precisely in not making useless combinations and in making those which are useful and which are only a small minority. Invention is discernment, choice._

_To invent, I have said, is to choose, but the word is perhaps not wholly exact. It makes one think of a purchaser before whom are displayed a large number of samples, and who examines them, one after another, to make a choice. Here the samples would be so numerous that a whole lifetime would not suffice to examine them. This is not the actual state of things. The sterile combinations do not even present themselves to the mind of the inventor. Never in the field of his consciousness do combinations appear that are not really useful, except some that he rejects but which have to some extent the characteristics of useful combinations. All goes on as if the inventor were an examiner for the second degree who would only have to question the candidates who had passed a previous examination (Damasio, 1994: 188-9)._

9.155 From the neurological perspective, Damasio suggests that subjectivity happens when the brain is producing not just images of the object, not just images of the organism’s responses to the image, but a third kind of image: “that of an organism in the act of perceiving and responding to an object. I believe the subjective perspective arises out of the content of the third kind of image” (Damasio, 1994: 242-3). To Damasio, the minimal neural device that makes subjective thinking possible is only quite basic, wherein the narrative can be accomplished without language, using the elementary representational tools of the sensory and motor systems in space and time, and he sees no reason why animals without language would not make the simple narratives (ref. Damasio, 1994: 243).

9.156 However, what is important to us is the second-order of narrative capacities which is available only to humans and it comes with language ability, and a refined form of subjectivity is possible with this:

_Humans have available second order narrative capacities, provided by language, which can engender verbal narratives out of non-verbal ones. The refined form of subjectivity that is ours would emerge from the latter process. Language would not be the source of the self, but it certainly is the source of the ‘I’ (Damasio, 1994: 243)._

**Background For Second-Order Narratives**

9.157 Damasio’s second-order narrative is obviously an ontological intelligence as it is unique to humans, and it forms a pervasive referential background that enables architectural innovation. As Damasio infers, and so has Chomsky and Pinker, language is a genetic instinctive mental device, which humans are already born with. However, it
takes prolonged training to transform basic language abilities to become a springboard toward greater intelligence. One of these branches of intelligence leads to architectural innovation, but as the argument develops, we can now appreciate that the mental make-up is structured around language abilities, together with other accompanying abilities.

9.158 Latest researches, exemplified by Csikszentmihalyi, Gardner, Collins, Boden, van Schaik and, lately by Weisberg (See Weisberg, 2006) demonstrate that creativity is learned, and can be explained. Damasio points out that although there is a subjective content in second-order narrative capacity, which encompasses ‘themata’ and ‘feeling tones’, the spirit of Damasio’s argument is that mental activity can be explained. What then is the ostensive background for these mental activities, particularly those that lead to architectural innovation? For architectural innovation to happen, with the view of second-order narrative, the proceeding contents suggest the following:

1. The first of which is ‘synthetic imagination’ which has a grand narrative and positive, pro-active quality, a synthesis of utopian possibilities.
2. The second is ‘historical testimonials’, to retrieve what is to consult known historical knowledge and use the knowledge discriminatorily.
3. The third is ‘projective empathy’ which is a moral concern, examples are empathy with about the state of our cityscape and our environment, having a subjective quality about it.

Synthetic Imagination

9.158.1 In ‘synthetic imagination’, the imagination is engaged to discern the ‘similar’ in the ‘dissimilar’, synthesise them and form a ‘grand narrative’ in order to organise the random array of available information. Designing in architecture is unavoidably, an activity that organises first our minds, and then the spaces and artefacts of architectural concerns based on the information available to us (ref. Wilson, 1999: 44).

9.158.2 Also in design or if we are to it put liberally, in the making of meanings, ‘synthetic imagination’ is required to transform the myriad of experiences into temporal and spatial unity. Architect need to do this all the time in the act of design, as opposed to say, design done by computer programming which rely on software. For example, this is recognisable in Frank Lloyd Wright’s prairie houses, where despite his ideological attempts to ‘break the box’ and let his plans project out at various planes, he inevitably unify and conjoin them poetically around the hearth of the house, the fireplace, in the application of ‘synthetic imagination’. There is synchronisation in the synthesis and the vast variety of solutions are created out of meaningful coincidences as a result of this imaginative synthesis, hence, this is also why no two works of architecture are the same.

9.158.3 Without the possibility of commonality made possible by ‘synthetic imagination’, there would be no goals and no moral motivation and hence there would be no possibility of rising above the fields of indifferences. With the schematising power of ‘synthetic imagination’, architects could thus provide themselves with a sense of purpose for the creation of meaningful architecture. The goal ought at first to be provisional, fragile and tentative. Once differences are allowed to converge, or synthesise without
fusing, totalitarian ideologies are avoided. A target is given through the synthetic goal, without which, solutions cannot be arrived at.

9.158.4 It is thus the intention of ‘synthetic imagination’ to provide the framework to achieve unity-in-difference and difference-in-unity. Or to put it in another way, without ‘synthetic imagination’, there no possibility of critical transcendence because there is no capacity to imagine things exist otherwise. What ‘synthetic imagination’ also does is it enables us to reason ourselves over the prevailing circumstances. The broad aspect of synthetic imagination provides the possibility of standing firm to function properly and, according to Peat:

This ‘firm understanding’ must find its appropriate place in the broader context of the flowing movement of intuitive reason. It is only in the broader context that thought can become the vehicle of creative perception.... In such a case the mind will be able to respond with creative intelligence, to perceive new orders and new categories that generally lie between the static and isolated extremes presented by pure logic (Bohm, et al, 1987: 146).

Constitutive and Descriptive Orders

9.158.5 In the act of architectural design, abstraction is applied to rationality. Instead of the fragmentative nature of objective science, what needs to be applied with ‘synthetic imagination’ is to unify the differences into a form of holistic structure. Design cannot be separated from the whole and assigned only defined fragments. In the act of abstraction in design, a ‘constitutive’ and a ‘descriptive order’ would emerge. The ‘constitutive order’ has an ontological value and the ‘descriptive order’ has an open value to it. The ‘descriptive order’ can be a creative result of open exploration or a result of thought and experience. For example, in the architect’s drawings, the drawings have a ‘constitutive’ basis in paper and ink, where this would have little bearing on the architectural description of the building. However, once it is manifested into setting-out lines, it begins to lie midway between a ‘constitutive’ and ‘descriptive orders’. On furthering the drawings, the building could thus be described with dimensions, scale, specifications, hatching and so on. The ‘constitutive’ and ‘descriptive order’ is intended to have an intelligent quality about it as it explains the act of design from the rational point of view.

9.158.6 Subjectivity can have a level of rationality, which need not defy explanation and, this is crucial to sustain architecture by evoking depth and meaning. Creative works of architecture could be interpreted with excursions into depths at various levels – they are designed with perceptive intelligence and with control of the intellect. Designing architecture is still an artistic and subjective act despite our ability to explain to some extent to rationale behind this act. The way architectural design is scripted in the mind bears resemblance to say, calligraphy. Analogically, the ideograms contain subtle variations with aesthetics and other subjective meanings shared between the author and the reader while the lexicon meaning would remain consistent. The brush acts like a seismograph of the mind, revealing on the media, every pressure and shift of the wrist. Like the sketches in the act of design in architecture, calligraphy responds to the eye and
is an art of space. In architecture, this is translated into ‘constitutive’ and ‘descriptive orders’ to become technical architectural drawings, in an ordered manner, in a language which is later concretised into built forms.

9.158.7 We could say that in ‘constitutive’ and ‘descriptive orders’, the language of architecture has an internal structure, like semantics and syntax, yet each work is still perfectly free, not rigid as we would necessarily do in assigning signifying vehicles in objective semiotics. This will not be unlike other fields of the aesthetics like painting, sculpture, plays, novels and poems. Likewise music, for example, is free creation of the mind, having its own ordering rationale, such as modulation, counterpoint, resolutions and tension as well as having definable properties such as overtones, scales and harmonic proportions. The various fields of aesthetics could be synthesised imaginatively, thus expanding the creative perspective of each of these fields and that meanings in each of these aesthetic fields would be used as analogy to expand the understanding of the other fields. In comparing architecture with music, Elizabeth Martin says that:

*The eye and the ear resemble each other in construction, number and in the function of their parts resulting in the obvious analogous properties of matter. The eye lends itself to a visual field, and the ear to an aural field. Architecture represents the art of design in space; music, the art of design in time* (Martin, 1994: 8).

9.158.8 Also, like architecture, music has ‘constitutive’ and ‘descriptive orders’, where constitutive order’ is manifested in the first musical bar. If we take a well-known musical composition, Beethoven's Fifth Symphony for example, the first four notes of the symphony, when they are first heard, occur out of a situation of perfect silence, which is without meaning or context. In Peat's description:

*The first four notes sound out in this void, establish their resonance within the mind, and produce a variety of dispositions and expectations within the listener. This is, in effect, the generator of their first context. But now, as the music continues to play, the context starts to grow. The initial pattern of notes is played over and over again, but this perception takes place in an ever-changing context which acts to transform the way that they are heard. The context is created out of this platform of notes and, in turn, acts back on them to change their meaning* (Bohm, et.al., 1987: 218).

**Historical Testimonials**

9.158.9 ‘Testimonial’ implies recounting and valuing the experiences of the past. With several millennia of architectural experiences in the past and with innumerable notable architecture built when the ontological aspects of architecture had hardly changed, it is inconceivable that the past could be detached from present activities. The architect need not necessarily work only with the prevailing idiom. In fact the greatness of the architect rests with his ability to create a new, personal idiom, an individual set of rules that deviates from the conventional rules and yet contain profound authenticity that reflects presentness. This is not to belittle the creativity of architects but to point out that every innovative architect has acquired some form of recipe for the basis of the architecture he wishes to undertake. As Constable, the artist puts it, "an artist who is self-
taught is taught by a very ignorant person indeed" (Koestler, 1964: 379). What however distinguishes the true master from his imitators is his ability to invent the new set of rules from his own apprenticeship and the prevailing cultural ethos. He does not do it from a situation of void; but from a situation of knowledge and experience and a good grasp of ‘historical testimonials’.

9.158.10 Researches by Csikszentmihalyi, Gardner, Collins, Boden, van Schaik and Weisberg point to the suggestion that creativity is learned and it does not begin in a void. Other than the mental link with historical exemplars, van Schaik suggests that innovators also seek out mentors from all over the world: “Sometimes these relationships are based on actual meetings, often they are remote but enduring admirations leading to intense study and attempts at replication” (van Schaik, 2004: 32). Other researchers have often quoted great innovators being influenced by their mentors before breaking out.

9.158.11 From the psychological perspective, the accumulation of ‘historical testimonials’ form part of the unconscious state of the architect. The architect in designing his buildings intermittently throws himself back to his unconscious state to find the roots of his accumulated skill and knowledge. This periodic immersion into the unconscious is accompanied by temporary disintegration of matrixes of logical thinking, relying instead on intuition. They are also entailed with a loss of identity and freedom of play. Besides the architectural masters, most architects of the same generation will share some degree of equipotentiality. As Murray Stein puts it:

The unconscious at this level, is structured by larger cultural patterns and attitudes, and these end up influencing the individual’s conscious attitude and the more unique complexes within a nexus of unconscious cultural assumptions (Stein, 1997: 47).

How then does the architectural innovators break away from the restraining collective unconscious to come up with a new recipe of rules?

9.158.12 As suggested earlier, perception forms part of human intelligence and there is a subjective nature about it and that it cannot be divorced from past experience. There is a continuous scale of gradation where at one end; there is classical conditioning that would happen in everyday life in every society. In the intermediary ranges of the scale, there are the various blends of proportions between ‘bit’ knowledge and ‘whole’ knowledge and there is a perceptual hierarchy, until it is saturated with ‘meaning’, that is, insight. Insight, according to Koestler, is a matter of degree and not an all-or-nothing process as prescribed by the Gestalt school (Koestler, 1964: 522). Thus an insightful act is something that is above learning, but still depends on learning, accumulated experience and knowledge. As it is not something that is not learned, it can be performed instantaneously; not perfected through practice in the first place; but appears all at once in recognizable form.

9.158.13 Therefore new insight depends on a combination of historical testimonials acquired through learning and experience and a mediating process and it does not happen out of nowhere. The non-historical process of the ‘depthless simulacra’
avoids historicism and tries to rely instead on the observable, thus becoming devoid of meaning, or that itself is a meaningless statement as the natural mental process shows that nobody is in actual fact really devoid of ‘historical testimonials’ in their actions. What the architectural innovators will instead have is a higher gradation of insight, which at its higher levels is perceptive intelligence, which has a subjective nature about it.

Projective Empathy

9.158.14 The other background that is needed to become meaningful innovators is having the sense of ‘projective empathy’. In any architectural activity, subjective value is developed, in the sense that any architectural activity is empathetic to a subjective value. The receptive capacity that comes with ‘projective empathy’ lies at the basis of our moral capacity to respect the otherness and respect things of value around us. In another perspective what it means is that without projective empathy we would not have the capacity to imagine ourselves in a decent environment of habitation or an environment of substance – we would be building meaningless artefacts instead of architecture.

9.158.15 Valuable innovative architecture is the result of our emotive response in placing meanings through moments of experience as individuals. We value places through our ‘projective empathy’ as we remember the sounds, sights, smells and texture. A place is remembered for our participation in the activities around it, the way we remember light is dramatised in the spaces and the way light is received and projected by the walls, floors, screens, forms and so on. We also remember the sounds around it, the change of decibels and tonality of the sounds. We remember perhaps an incident that happens in a place and the pleasure we might have out of a particular event. Each element of a place is part of a conjugation of unique moments of experience that cannot be separated without nullifying the essence of overall experience.

9.158.16 The sense of empathy is thus the result of the combination of mental and physical events. As architects we also look for a deeper order beyond the mere experience of events. Every detail of a valued building and specific nook has its own unique story to savour and in conjugation; gives us an overall sense of satisfaction. Analogously with music, while listening to a piece of music, a flood of variety of feelings is unified with the total listening. It is only when attention is drawn to a particular movement that it becomes possible to differentiate the fleeting differential feelings at frozen periods of the musical time. The discrimination at the different musical time is imprecise in the way that feelings are evoked but we connect the differentiated moments to an overall composition through ‘projective empathy’. Briggs’ ‘feeling tones’ exemplifies this.

9.158.17 There is subjective emotion and subjective intelligence in the way we empathise with the aesthetics. Although there is a cultural factor in the manner good architecture is discerned from bad, and in the way that a building can be intelligibly critiqued; a good building is recognised as the result of a heightened and developed sense of ‘projective empathy’ through what is culturally considered as valuable and meaningful in architecture. In a way it is like developing connoisseurship through empathetic experience. But so-called connoisseurship is required to recognise what is sublime from
the mundane. There will thus be an absurd division in the community of architects into two cultures resulting in the paradoxical situation, where the average architect will be reluctant to admit his inability to comprehend the sublime, compared with the architect who has mastery over his vocation.

9.158.18 This dulling of empathy is the consequence of the dominance of scientific objectivity to things and that the products of science and technology have dominated the life of the average person to the extent that things are looked upon as objects to be possessed, used and exploited without comprehension or emotional attachment. His relationship with the objects of his daily use, the button to his computer, the plug to his electrical socket, the switch to his air-conditioner, the environment in which he lives, are all impersonal and objective: Like the investor’s attitude to the share prices that appear on the monitor; not the artist's attitude to his paintings which he cherishes because of the long hours and emotional commitment spent with his canvas. The architectural critic and the architect innovator have instead developed with energy and effort, a ‘projective empathy’ with what is sublime and they understand these through subjective intelligence (Damasio’s Second-order Narrative), not by objective reasoning. It is not the products of science in themselves that make the existence of the man unnatural; but his complacency and not taking an interest beyond the things that he observes and uses around him. By being entirely dependent on science, yet closing his mind to things beyond the surface, he leads a life in urban ignorance.

9.158.19 Earlier it was suggested that ‘synthetic imagination’ is required to engage a building beyond its appearance. ‘Projective empathy’ is equally crucial in sensing the materiality and tactility of a building beyond its appearance. This sensibility engages all the human senses, or as the Swedish architect Erik Gunner Asplund puts it in a lecture in 1936:

The idea that only design, which is comprehended visually, can be art is a narrow conception. No, everything grasped by our other senses through our whole human consciousness and which has the capacity to communicate desire, pleasure, or emotions can also be art (Asplund, 1936, quoted by Webb, 1980: 153).

Summary of Discussion

9.159 Summary of the Discussion is as follows:
(1) Attitude towards innovation in architecture began as an inculcation of the laboratory attitude in the seventeenth century.
(2) Manifestation of the laboratory attitude in architecture started to emerge only in the early twentieth century with inter-domain and intra-domain enchainment – the seed began with other forms of visual arts that would also engulf architecture.
(3) The process of architectural innovation follows patterns of language – visual and literary. It becomes apparent when architecture becomes critical, exemplified by the writings of critiques and works of critical architects, such as Eisenman’s.
(4) Earlier literature reviews demonstrate a place for the unquantifiable, subjective imagination in architectural innovation (eg. Sartre). However, substantive recent researches (Csikszentmihalyi, Gardner, Collins, Boden, van Schaik and Weisberg) demonstrate that subjective imagination is only part of an overall mental process, which is mainly ostensive.

(5) There is an identifiable mental structure that leads to innovation. The objective part of the structure is demonstrated by Chomsky’s syntactic structure. The final structure for architectural innovation contains context as well as subjective nuances (‘themata’ and ‘feeling tones’).

(6) The act of architectural innovation contains second-order narrative, which is a refined form of subjectivity.

(7) The second-order narrative is anchored by:
- Synthetic Imagination
- Historical Testimonial
- Projective Empathy

(8) In the review of the questions and answers in relation to the bulk of questions and answers (Item 9.03-5), the weightage of the discussion and literature reviews point to the following:

**Purposes of innovation:**
For emotional energy, group emblem and synthetic imagination.

**Innovators are made:**
It involves learning over a period of time (10-12 year rule), usually in enchainment with a mentor, and then breaking away.

**Innovation is equally an individual quest and a collective pursuit:**
However, it is unlikely to be a solipsistic activity.

**Innovation is an extension of domain:**
It requires inter-domain and intra-domain enchainment.

**Process of innovation is ostensive:**
However, refined subjectivity is involved, which is regarded as second-order narrative – involving imaginative and emotional nuances.

**There is the presence of structure in innovation:**
It is based firstly on Chomsky’s syntactic structure and then necessarily modified to include subjective nuances.

**There is the requirement of context:**
This then becomes part of the mental structure.

**There is mastery of rules and experience:**
It is extended into the mastery of visual, and/or literary language
TEN:
CONCLUSION
Reference Literature:
Weisberg, Creativity, 2006
van Schaik, Mastering Architecture, 2005
Ackerman, An Alchemy Of Mind, 2005
Florida, The Rise Of The Creative Class, 2002
Taylor, The Moment Of Complexity, 2001
Shermer, The Borderlands Of Science, 2001
Kwinter, Architectures Of Time, 2001
Luhmann, Art As A Social System, 2000
Deacon, The Symbolic Species, 1997
Ed. Leach, Rethinking Architecture, 1997
Kauffman, At Home In The Universe, 1995
Wittgenstein, Philosophical Investigations, 1953

Recalling Summary Of Discussion
10.01 The Discussion above demonstrates the processes and structure of architectural innovation, summarised in Item 9.159 and outlined in the diagram in Item 9.149 (Figure 9.149). It essentially demonstrates that architectural innovation is an ostensive process, with an objective base, but containing subjective nuances. The discussion shows also that the processes of innovation are not solipsistic, but happen within cultural framework and having contexts. Recent authorities on the subject of creativity suggest that enchainment within and outside of the domains form also an essential factor for innovation to occur. Recent authorities suggest in addition that innovation is the result of lengthy development and hard work, following a 10-12 year period. The typical process, before reaching the tipping point is not a linear one, but one that is in continual loops, feeding to and fro along internal and external networks. It is also clear that innovation happens in open, complex systems and not in closed systems. The processes of innovation are also similar across domains, be it in the arts or in the sciences, or in architecture.

10.02 In the latest substantial survey and analysis on creativity, by Robert W. Weisberg (Weisberg, 2006), spanning across the arts, the sciences and inventions in a 600-page document, he re-affirms the summary above and the works of recent authorities (the ones used in this thesis, for example are Csikszentmihalyi, Collins, Gardner, van Schaik, Boden, Wilson, Bohm, Damasio and others) by way of case studies across domains. His ranging case studies include for example, Watson and Crick, Picasso, the Beatles, Edison, Darwin, the Wright brothers and Mozart. Weisberg’s emphasis is however: that the premise for creative work may not go beyond ordinary thinking and that all creative products are less than completely novel, that all creative products are incremental advances (ref. Weisberg, 2006: 52-111). To Weinsberg, what distinguishes
an innovator to that of the ordinary person is having a developed expertise in problem finding and that the process is heuristic rather than systematic (ref. Weinsberg, 2006: 140-4). This echoes the suggestion of the protagonists of second-order cybernetics (ref. Items 9.77-9). Weinsberg also subscribes to the 10-year rule, being the period of coaching, incubation and mastery (ref. Weinsberg, 2006: 173, 212, 386, 409, 484). To emphasise the ostensiveness of creativity, Weinsberg suggests that creative insight is the result of an extended period of analysis and experience; it is not the product of pure imagination (ref. Weinsberg, 2006: 317, 339).

**Attitudes Of Creativity**

10.03 Weinsberg’s specific references to architects is to do with personality traits. He uses Feist’s findings in 1999 to suggest that there is essentially little difference between the personalities of ‘creative’ and ‘less creative’ architects, further emphasising the ordinariness of creative thinking:

> This result indicates that there were more similarities than differences in the personality structures of the creative architects and their noncreative (or less-creative) former assistants. Such a finding raises questions about differences in personality between more–versus less-creative individuals, at least in that study, and also about the role of personality characteristics in creative accomplishment (Weinsberg, 2006: 494).

10.04 However, citing the work of Amabile (1983), Weinsberg infers that creative individuals carry particular ‘attitudes’, which he calls personality factors:

> Some of these personality factors are a high degree of self-discipline, the ability to delay gratification, a tolerance for ambiguity, and perseverance in the face of frustration and lack of success. Other personality factors are independence of judgment, a high degree of autonomy, an internal locus of control (i.e., the person works under his own direction rather than taking orders and direction from others), a high level of self-initiated striving for excellence, and, perhaps most important, independence in thinking and an absence of dependence on social approval. Finally…. there is a willingness to take risks….

> – the most influential aspect of the model has been its emphasis on motivation (Weinsberg, 2006: 525).

**Environment That Encourages (The Third Place)**

10.05 Weinsberg’s emphasises that the premise for creative work may not go beyond ordinary thinking and that all creative products are less than completely novel (ref. Weisberg, 2006: 52-111) suggests also that the external factors play a role in sustaining creativity, other than that of personality factors such as motivation, etc. William Lim and Florida point toward an open, transient and tolerant urban environment of mixed ethnicity and cultures to encourage innovation. Collins points toward an environment that encourages enchainment, and van Schaik points toward a pedagogical environment (concourse of architecture), which is like a market place for mentorship,
enchainment and exchange of ideas. All modern researchers share the view that creativity is not an isolated solipsistic act. Indeed as one of his prescriptions to cultivate creativity, Shermer suggests: “Communicate your new ideas with others in the field. Intellect dies in isolation. The conflation of old ideas into new configurations comes from outside stimulation” (Shermer, 2001: 271).

10.06 With reference to Ray Oldenburg’s *A Great Good Place* (1999), Florida notes the importance of what he considers as ‘third places’ in modern society. The first two places are home and work, whereas the third places are “the heart of community’s social vitality where people hang out for the pleasures of good company and lively conversation” (Florida, 2002: 226). By extension, van Schaik’s architectural concourse at RMIT, which is within the university at the centre of Melbourne with its proximity to coffee shops, bookstores and cafes, is consistent with the idea of the third place. This concourse is the necessary alternative to the: “click-through, page-on-page realm of the paper-based simulations of desks and filing cabinets that dominate the virtual space today” ((van Schaik, 2005: 228). Florida reason for the third place is essentially the same as van Schaik:

*The importance of third places also arises from the changing nature of work. More of us do not work on fixed schedules and many of us work in relative isolation – for instance, in front of a keyboard at home, as I often do. Reliable human contact is thus hard to come by, and e-mail and phone interruptions provide only a limited form. So I frequently take a break and head to the coffee shop down the street just to see people on the street…. (Florida, 2002: 226).*

10.07 Van Schaik’s concourse however has specific aims, propelled by the need for support structures so that innovation can be realised. The concourse is evolved from the realisation of today’s intellectual milieu wherein architecture is no longer considered as a single Platonic ideal and we inhabit in the condition of second-order modernity where, “we need to acknowledge that there are many fields in a domain of knowledge” (van Schaik, 2005: 234). Influenced by Alvin Boyarsky’s vision of the learning community, van Schaik laid out the essential components of the learning concourse:

– *An enchainment between mentors, beginners and emerging innovators.*
– *A patron who understands the need for formal ritual behaviours of a community.*
– *A process of knowledge-capture that ensures that cultural capital is not lost.*
– *A cockpit for the discourse that feeds the development of three clearly different positions or fields within the domain* (van Schaik, 2005: 235).

**Network Culture**

10.08 Van Schaik’s second-order modernity is unavoidably contemporaneous to today’s world – it is today’s reality that necessitates the change in pedagogical structures toward an open one, which encourages enchainment and network. The nature of second-order modernity is termed by Taylor as the ‘moment of complexity’, which is immersed
in a network culture (ref. Taylor, 2001: 5). Taylor suggests the circumstances in which the ‘moment of complexity’ and its network culture lead to innovative change. There is however a biological analogy in Taylor’s description:

Expanding networks of communication promoting rapid symbolic exchange generate a density and diversity of symbolic and mythic resources that make creative innovation though not inevitable. If innovation occurs, it is a function of what Calvino describes as ‘combinatorial play’. While such play is not necessarily deliberate and is not always the result of creative individuals, different strategies can be deployed to facilitate it. New meanings are rarely planned or programmed but usually emerged in surprising ways. At the cusp of purpose and chance, words, images, and symbols are thrown together to create new meanings that are as unpredictable as they are uncontrollable.... As interpretative schemata change to adapt to each other, they eventually reach the tipping point where new comprehensive patterns suddenly emerge (Taylor, 2001: 214).

10.09 The network culture is inclusive of Oldenburg’s and Florida’s ‘third places’ and van Schaik’s ‘learning concourse’, which are tangible places of events, and which encourage creative innovation. Taylor’s network culture also includes intangible places: Following the work of Pierre Levy, a ‘fourth space’ (ref. Taylor, 2001: 220) is described, which is a virtual world termed by Levy as ‘cosmopedia’, where knowledge evolves beyond the bounds of humanity:

The cosmopedia is based largely on the possibilities made accessible to us through computer technology for the representation and management of knowledge.... Instead of one-dimensional text or even hypertext network, we now have a dynamic and interactive multidimensional representational space. Instead of the conjunction of image and text, characteristic of the encyclopaedia, the cosmopedia combines a large number of different types of expressions: static images, video, sound, interactive simulation, interactive maps, expert systems, dynamic ideographs, virtual reality, artificial life, etc. At its extreme the cosmopedia contains many semiotics and types of representation as exist in the world itself. The cosmopedia multiplies nondiscursive utterances (Taylor, 2001: 220).

**Pedagogy In Network Culture**

10.10 The impact of the ‘fourth place’ ('fourth space’) or cosmopedia, on pedagogy is becoming clear, particularly when more and more on-line courses seem to be emerging. Taylor describes the impact as follows:

Most important, the classroom has expanded and now is global. Anyone anywhere in the world can, in principle, sit down around the same virtual table and learn together. What is studied in the global classroom will be as different as how it is studied. Disciplinary boundaries are becoming as mobile and permeable as the screens on which the courses are cast. Since the organisational structure of knowledge is always bound to the modes of production and reproduction in a particular society, technology changes issue in the reconstitution of knowledge. In the future, the curriculum will look more like
When knowledge changes and both seminar tables and lecture halls become global, traditional classrooms will not remain the same. Like a growing number of businesses, colleges and universities will become click-and-mortar operations in which the old and new economies intersect and interact in unpredictable ways. Without in any way minimising the challenges and difficulties these changes pose, it is vitally important for educators to appreciate the new opportunities e-Ed creates for people around the world and to develop new strategies for a rapidly changing educational environment (Taylor, 2001: 234).

10.11 The notion that future pedagogy will become more open is shared by several modern researchers (ref. Item 10.15). Taylor however speculates even further – that future institution of learning would effectively become wall-less, with an open structure and less predictable – which 'structure and function more closely approximate a Nasdaq than a Ford assembly line' (Taylor, 2001: 257). Taylor views the positions of institutions as if in a competitive commercial market, and limited financial resources are constraining effective responses to the new network culture and environment. As a result, new alliances would be created among the institutions and they would enter into unprecedented partnerships with business to afford and upgrade new hardware and software. Taylor’s vision is however, vague, and he outlined the problems associated with copyright, royalty and tenure that arise from a multi-media concentrated and open structure. Another problem would be that departments at lesser institutions would close as students connect with more renowned universities with distance learning (ref. Taylor, 2001: 260-6).

10.12 Using biological analogy, Taylor sees that creative work in universities are necessarily hosted in complex adaptive systems, which would hover at the edge of chaos and there would be uncertainty for both the structure and the tenureship of the educators. In a way this recalls Boyarsky’s prescription during his stewardship of the AA School of Architecture (1971-1990) sans the multimedia hardware and software. Taylor describes as follows:

Creative work usually emerges between fields in areas that are far from equilibrium and often seem to hover at the edge of chaos. Separate disciplines as currently constituted can no more be justified than the departments they serve. To be effective in today’s world, knowledge and the curriculum must assume the form of complex adaptive systems, which are in process of constant formation and reformation. New technologies of production and reproduction not only facilitate but actually necessitate these changes. As these developments continue to unfold, the organisational structure of colleges and universities will have to become much more flexible and adaptable to accommodate the ongoing transformation of the substance and organisation of knowledge. For faculty members, the most important consequence of curricular change will be the continual erosion of tenure (Taylor, 2001: 265).

Autopoiesis
Taylor includes Maturana, Varela ‘autopoiesis’ as part of the network culture that makes up his ‘moment of complexity’. Autopoiesis has its basis in biology between the observer and the observed, where: “With self-consciousness, the reflexive relation between subject and object, or observer and observed, bends back on itself and becomes self-reflexive – The observer as an observer necessarily always remain in a descriptive domain, that is, in a relative cognitive domain” (Taylor, 2001: 89). Taylor then quotes Maturana and Varela:

No description of absolute reality is possible. Such a description would require an interaction with the absolute to be described, but the representation which would arise from such an interaction would necessarily be determined by the autopoietic organisation of the observer, not by the deforming agent; hence, the cognitive reality that it would generate would unavoidably be relative to the observer (Taylor, 2001: 89).

This infers that the observer can never transcend the perspective from which she observes – that the data of experience are already always processed. In welding art to its social system, Luhmann suggests that: “each observation immediately observes something that can be distinguished – objects or events, movements or signs. We cannot get rid of the immediately given world…. Nor can we completely divorce ourselves from the intuitively apprehended world, not even in our imagination; we can only simulate what we observe under different circumstances” (Luhmann, 2000: 55). What Luhmann infers is that our social system influences our art or architecture.

Luhmann suggests further that the theory of autopoietic social systems requires the replacement of action theory by communication theory as elementary operative level of the system. The elements of communications are recursively reproduced by a network of communications that cannot exist outside of such a network. The circularity of the autopoietic systems does not necessarily preclude their openness, as according to Luhmann, they are both closed and open: “the concept of autopoietic closure has to be understood as the recursively closed organisation of an open system” – the interplay of openness and closure in autopoietic systems is the result of the necessary interaction between system and the environment (Taylor, 2001: 91). Luhmann explains further as follows:

Systems are oriented by their environment not just occasionally and adaptively, but structurally and they cannot exist without an environment. They constitute and maintain themselves by creating and maintaining a difference from their environment, and they use their boundaries to regulate this difference. Without difference from the environment, there would not even be self-reference, because difference is the functional premise of self-referential operations. In this sense boundary maintenance is system maintenance (Taylor, 2001: 91).

Cities As Complex Adaptive Systems

What Luhmann describes above is termed by Holland as ‘complex adaptive systems’, the characteristics of which can be found in natural, social and cultural phenomena. By extension, it describes happenings at a city’s sub-strata – the layer
beneath Florida’s third place, parallel to van Schaik’s architectural concourse and William Lim’s alternative, rebellious postmodern city. The networks of the complex adaptive systems appear to be isomorphic and seem to share a common logic, like a typical city; but underneath it is complexity, poised at the edge of chaos, between too little and too much order. By examples of today’s cities, Holland’s complex adaptive systems seem to provide the appropriate analogical explanation.

10.17 Seen in the context of Holland’s complex adaptive systems, the city becomes the product of progressive adaptations. Progress in this context is measured by the increase in diversity and correlatively, and the growth in complexity. The increasing complexity is seen by Holland as positive. The accruing complexity also explains the underpinning systems of a lively, heterogeneous city, and the complexity increase through multiple loops:

In the strange loops of these systems, complexity breeds diversity, which increases complexity; which breeds diversity…. Second, it is possible to account for the directed increase in complexity is systems without recourse to teleology and finalism…. On the one hand, system and environment are joined in recursive circuits that create both unexpected and disproportionate changes, and, on the other hand, the openness of complex adaptive systems leads to aleatory changes in schemata that distinguish the point of departure from the point of arrival (Taylor, 2001: 169).

10.18 As part of the arguments for accrued complexity, Goodwin’s neo-Darwin work argues for an evolved complexity. Like Holland’s, his work is biological driven. However, his suggestions provide a similar platform to explain complexity in a city. With reference to organisms, Goodwin suggests that forms of life are ‘emergent as well as mutable’, following the attempt to revive morphology (ref. Taylor, 2001: 183). Similar to Bohm’s ‘Wholeness and the Implicate Order’ (1980), Goodwin suggests that the organism cannot be understood as the sum of its parts but must be considered as a whole. He suggests also that: “Metamorphosis is a process that has intrinsic properties of dynamic order so that particular forms are produced when the system is organised in particular ways” (ref. Taylor, 2001: 183). This is a kind of ‘morphing’ when changes occur, and a useful analogy to interpret changes in a city.

10.19 The theory of complex adaptive systems provides an understanding of the interrelation of emergence and self-organisation, which makes it possible to reinterpret the principles of rational morphology such as that propositioned by Goodwin, in a way that takes advantage of insights. The insight is what we use if we were to borrow the ideas of complex adaptive system to analogise events in the city. Kauffman speaks about self-organisation in a way that extends Goodwin’s ‘metamorphosis’. He suggests that: “self-organisation may be the precondition to of evolvability itself” (Kauffman, 1995: 185). The fundamental conviction about Kauffman’s work the emergence of order is spontaneous but not accidental (ref. Taylor, 2001: 184).

10.20 Kauffman suggests: from it simplest to its most complex forms, life emerges in networks of interconnected webs. Kauffman’s network diagram shows the
way nodes proliferate and the way interconnections grow. The networks “evolve to a natural state between order and chaos, a grand compromise between structure and surprise” (Kauffman, 1995: 15). Self-organisation emerges between too much and too little order. Where there is too much connectivity there is chaos; and where there is too little connectivity the systems are frozen. “At a critical juncture, more becomes different. This is the tipping point where order emerges from disorder and patterns develop from noise” (ref. Taylor, 2001: 187).

10.21 If Kauffman’s self-ordering dynamics were to be applied to the city, it has to be applied to everyday events outside of static structures. Considering Oldenburg’s inferences of places: the first place, which is the home, and the second place, which is the work place are static places. There is some self-ordering dynamism in Oldenburg’s third place of cafes, restaurants and bookshops, where the network culture thrives. There is yet another transient space, which is the place of continuous change, where in Melbourne, it could be exemplified by the temporary market at Queen Victoria Market. Every city has its own equivalence to the bazaar and what happens at the bazaar is usually predictable – they exist for the selling and purchase of carried items. Kuala Lumpur, for example has many of these places, commonly known as ‘night markets’, and they are found all over the city. These transient places have a time dynamics about them, as well as physical dynamics.

10.22 In autopoiesis, where, “with self-consciousness, the reflexive relation between subject and object, or observer and observed, bends back on itself and becomes self-reflexive” (ref. Item 10.23), time determinant is not governed by rules, but by events that involve the observer and the observed. There will then be a multiplicity of perspective – which cannot be reduced to a single angle of vision that is true for all observers. From this argument, the architectural narrative of the city is not made just by static forms; but also by human activities, or events. This narrative is necessarily built upon local idiosyncrasies.

10.23 These transient, idiosyncratic events in the city can happen at a large scale, such as the transient markets, or larger still – such as the coming together for New Year’s day celebration, or for independence day. However, everyday occurrences are also events, the accumulation of which has more profound meaning to the narrative of the city. If time is determined by events, then, event is the determinant of change. Architecture is only the resulting physical manifestations of these changes, and using Goodwin’s biological analogy, the edifices of architecture as forms of life are ‘emergent as well as mutable’ (ref. Item 10.28).

10.24 Every event prompts a change in the city – it is an interruption to normality and it leaves traces behind; indeed, a change has to happen before it can be described as an event. For example, William Lim narrated the phenomenal forms of life at Mohamed Sultan Road in Singapore, when two rows of dilapidated low-rise shops and houses inexplicably attracted the attention of the creative class and. “morphed into the most exciting nightlife district in the city. Buildings have been restored and transformed. Bars, dance clubs and restaurants have swarmed the area, which booms with the sound of
the ringing cash registers” (Lim, 2001: 155). The transformation began with a single property, which then spread like a deluge to quickly encompass the whole district. This happened in the late 1990s; by the mid-2000s, the same forms of life moved on to Clarke Quay just a short walking distance away and today Mohamed Sultan Road has quietened considerably. Nevertheless the traces left behind are tangible with the rehabilitation of old buildings and the gentrification of the streets around it. Kuala Lumpur has its own equivalence to Mohamed Sultan Road, in the Heritage Row, which is now what Mohamed Sultan Road was in the late 1990s. The same forms of life are expected to move on, and likewise the area would be left gentrified.

**Dynamics Of Everyday Spaces**

10.25 Everyday dynamics of the city usually exclude its buildings, as buildings are necessarily static; instead they have to do with daily human activities, whether within or outside the buildings. Whilst physical meanings (codes and symbols) remain largely unchanged, intangible meanings are shifted by human activities, be they spatial, aesthetic, political, social, cultural, economic or ethical. The multiplicity of meanings and perspectives shift as forms of life activate. For example, routine human activities like commuting, working, recreating, shopping and running errands continually modify the multiplicities of spatial, aesthetic and social meanings. Lefebvre for example, explains this somewhat as follows:

*The actions of social practice are expressible but not explicable through discourse: they are precisely acted – and not read....* (ed. Leach, 1997: 140).

*Architectural volumes ensure a correlation between the rhythms that they entertain (gaits, ritual gestures, processions, parades, etc.) and their musical resonance. It is in this way, and at this level in the non-visible, that bodies find one another. Should there be no echo to provide a reflection or acoustic mirror of presence, it falls too an object to supply this mediation between the inert and the living: bells tinkling at the slightest breeze, the play of fountains and running water, perhaps birds and caged animals....* (ed. Leach, 1997: 142).

*Any object – a vase, a chair, a garment – may be extracted from everyday practice and suffer a displacement which will transform it by transferring it into monumental space....* (ed. Leach, 1997: 143).

10.26 Lefebvre suggests that the privileging of appearances has led to an impoverished understanding of space, where architects are complicit in turning rich social spaces into alienating abstraction. He instead pointed that the everyday space is the real concrete one, and suggests that this ‘private’ realm asserts itself over the public one:

*The user’s space is lived – not represented (or conceived). When compared with the abstract space of the experts (architects, urbanists, planners), the space of the everyday activities is a concrete one, which is to say, subjective.... It is in this space that the ‘private’ realm asserts itself, albeit more or less vigorously, and always in a conflictual way, against the public one (ed. Leach. 1997: 145).*
10.27 The dynamics of the everyday space stands in contrast with the static forms around it. It is everywhere and yet, at the same time, nowhere, as it is activated by events or human activities: as Lefebvre suggests, it is ‘non-visible’. Forms in the dynamics of everyday spaces are mutable, and they morph, and they transform. The borders of the dynamic everyday space are uncertain, as there is no totalising parameter. There is openness about the dynamic everyday spaces and this openness provides existential freedom and encourages innovation. It is equivalent to the way information is transmitted and received; wherein the amount of information transmitted and received is inversely proportion to the rigidity of the borders. Today’s explosion of information is enabled by the removal or borders that thwart freedom to transmit and receive information.

10.28 There also is uncertainty about time in the dynamic everyday space: below is a poetic narrative of time and events in the context of KL as a local city.

KL – A Thick Crust Of Time
– A Narrative of Time, Events and the City

There are three popular types of indigenous cakes: The monolithic light brown cake mixed with brown sugar (gula Melaka) and strands of coconut; the second is the dual layer cake made up of an upper layer of green pandan leaves and a lower layer of white rice and sago, and then thirdly, there is the ‘Kueh Lapis’, which literally means layered cake – made up of a variety of ingredients in different layers, each with its own visually delicious colour, alternating between red and white. There are also layered cakes that come in various shades of brown.

KL is the acronym for both Kuala Lumpur and Kueh Lapis, and both are metaphors of one another. At non-linear time in KL, the city stays at the upper layer made up of events that bustles with life with everyday happenings – the layer in which the populace takes for granted as it lives, and spaces morphs around the events. Time on the upper layer is noted from one event to another rather than by linear time.

The lower layers of KL, the city are encrusted historical time: The uppermost layer is the daily events that make the city alive, and when recent events are concretised, they are encapsulated at the second tier into memories. Collectively, the concretised memories affect collective behaviour to become the local culture. Even lower, are the tiers of urban forms – the upper most of these lower tiers house transient events such as the wet markets, the roadside stalls and the sidewalk cafes. The tier below is made up of forms of permanence, such as restaurants, bookstores, cafes and convenient stores. The layer below this comprises of the larger-scale urban forms, such as the rows of shophouses, rising to residences, hotels and offices. The lowest and the thickest layer is an
independent layer, which forms the base for the Kueh Lapis: it is the
dead, fossilized thick prehistoric layer which has no life.

Consumption of KL, the layered cake is like the consumption of time.
Surface observation and the participation of the daily events mean that
we are consuming only the upper layer. Awareness of the history of
places and the layers of meanings that are eventually concretised into
the urban forms enable us to consume the whole cake. Tourists
participate only at the upper layer of the Kueh Lapis as they drop in at
the cafes, bars and restaurants and then move on, not to be seen again.
There are also the nomads of the city – the buskers, and the street
vendors who move from one part to another. They slither along the
upper layer of events and then dip into the lower layer as they are
encapsulated into memories. Then there are the various idiosyncratic
events that make KL memorable – the bad drivers, the ‘buzz-ling’
motorcycles that meander in and out between cars and the constant
battle between pedestrians and traffic, the skimpy dolls who walk
alongside covered-up women.

The city, as an observation demonstrates the twentieth century
proposition that time is not linear although most of the time it seems so –
if anything in life that seems constant, it is the flow of time. Through the
layers of time encrusted in the Kueh Lapis metaphor, relative time is
encountered as we compare one encapsulated layer with another. What
the assumption (or law) of relativity tells us is that the flow of time at a
location of high, or intense events (‘high velocity’) is slower than at
another location with lower intensity of events (‘lower velocity’).

That is also the way time is perceived outside the clock. It is often said
that time flies when we are busy – is an axiom. By perception, this
means that the duration between the ticks of a clock in the high-E (or
high events) is longer than the duration between ticks of a clock at low-
E (or low events). These perceived differences in time’s passage is as
valid as astro-physics time dilation.

The concept of time being a constant flow is only a recent percept. Time
used to be cyclical, depending on harvest cycles, the rhythm of sunrise
and sunset, the movement of the constellations and the cycles of life and
death. With the invention of writing, things began to change and, our
language and thought process became more precise. The stimulus for
the invention of writing came with the need to record economic
translation, and with it the detail record of linear time and the clock.
One thing led to another and as we became more successful in
agriculture and economics, population began to grow and cluster in
cities – for economic reasons of course. It is at the cities that time
became non-constant, perceived differently, depending on the intensity of events.

The theories of relativity say that the dimensions of space, time and matter are ever changing and always dependent on the way in which they are observed. There are only two constants in the universe: the speed of light, at approximately 300,000,000 meters per second in a vacuum; and the other constant being the rate of expansion of the universe since the Big Bang when time began at zero.

In KL the city, time is captured and framed by myriads of events, some quick and others, not so quick. Some events are large events and others are little, everyday narratives; some events are transient and annual events like festivals and Independence Day celebrations come in cycles. There are millions of montages of faces with moods: some moods seem to stay permanently among the faces and others quick to change. KL is a potpourri of endless things, events and different ethnic groups. Nothing stays the same and nothing seems to pass away permanently. Time enfolds and warps, it slithers horizontally layer over layer: it isn’t permanent but it doesn’t escape either. The city encrusts it but it doesn’t own it.

Practice In Context

10.29 Located in Kuala Lumpur, our works possibly carry the recursive loops of perception, consciousness, self-consciousness and reason as our minds self-organise our comprehension of the city, which is part of the everyday world around us. In the theory of complex adaptive system, our works are apprehended by the context which forms a part of our psyche. Not only that; myths of the local context mingle and mix with global ones and are continually being transformed.

10.30 Practise is far from stable and is continually being transformed by external and internal events. Increasingly expanding network of communication promotes rapid symbolic exchanges, therefore resulting in change all the time. In that way, the probability of innovation is higher as processes become more and more open and unstable. When innovation occurs, it is the linguistic combinatorial play of all the various symbols and myths. The meanings that are created are likely to echo the combinatorial play of local symbols and myths as well as global myths. Just as in the case of rapidly changing Kuala Lumpur, the local designer may find herself creating meanings that are as unpredictable and as uncontrollable as the events of Kuala Lumpur. In Kuala Lumpur, events make up the meanings, and meanings must be understood as events, and not as forms.

Wickham Apartments

10.31 The Wickham Apartments, located in a residential district near the centre of Kuala Lumpur is a current project in the office which is reaching the end of its design
development phase. It is constrained by planning regulations to five-stories and need to achieve a saleable area of 80,000 sq. ft. on a site just under an acre to be viable. The design was initially based on environmental issues and achieving a variety of spatial experience. Spaces were initially conceived to be heterogeneous, with variances of volume in each apartment. Every apartment is to have a breezeway where the living areas are located, and for the breezeway to be effective, one or both ends of the apartment is have a large volume to encourage the flow of air. The breezeway was to be like streets, where at the large volumes, rooms would project over its spaces to break up monolithic large volumes.

10.32 The spaces in the Wickham Apartments were to be eventful, rather than say, static. There would be movement of air and people and the spaces would be thick with experiences and sensuality. According to Kwinter’s interpretation of Kafka’s events, “The primary role of events is not as a vehicle of signification, but much more simply, and literally, to shape or carve out paths and ensembles within such a manifold, initiating elaborate series of consequences from even minute shifts and transformations. All the so-called movements are tactical, and they are all aimed at carving out terrain, or passing from one level terrain to another” (Kwinter, 2001: 134).

10.33 To achieve the narrative qualities as intended, an interlocking strategy was adopted for vertical as well as horizontal spaces. Differentials in levels and variances in spatial volumes, together with changes of tactility within the apartment are also strategies that are intended to evoke narrative experiences. Volumes expand and contract, there is intended to be a rhythmic flow of space as it traverse through each apartment. Water features inscribe the spaces at various levels; at the ground level, they meander in and out of spaces and eventually surround the buildings. At the common deck, the landscape is treated as a mat of experiences, where levels rise and drop to provide change of experiences.

10.34 When the tactical ideas were first conceived at the beginning of the project, the strategies for design were intended to be as different as possible from other apartment buildings that were already designed or built. The final building was to be visibly novel. However, as the design developed, it gradually became apparent that every design component that emerged has already been done before. Borrowings happen unconsciously as the problems that were created to be solved have been repeated over generations. The idea of creating breezeways in the tropical environment is always desirable and has been done in places all over the tropics. Charles Correa had already created variances of volumes for his Kanchanjunga Apartments completed in Mumbai in the early 1980s. Equally, it is likely that Correa borrowed the idea from elsewhere. Interlocking of spaces is a logical way of creating narratives, or storytelling as the spaces are traversed. It was later found that SCDA of Singapore conceived of similar idea for their Lincoln Modern in Singapore in 2001. Meandering water features are already components that are popular at tropical resorts and there is nothing that is novel in this regard, regardless of design strategy. This enforces the point that “designs are woven from borrowed threads” (ref. Item 10.57).
10.35 However, the spaces at Wickham Apartments are busy; they could have been less busy and still achieve some of the design strategies originally conceived. It is unlikely that something like this would appeal to say, northern European aesthetic sentiment. It however echoes some of the underlying complexities now found in Kuala Lumpur that it should appeal to the local developer. Environmental context plays a significant part in the acceptance of the rising volumes of the apartments at the external face of the building due to the constant warm temperature, that it would be desirous to loose the warm air rather than containing it. When the air is cooler, say at night, the semi-outdoor court would become a place of repose and to have conversations.

10.36 It is apparent that there is an unconscious attempt to create myths in the sense that symbols are used as reference and they become semantic topology where symbols are turned into myths. The structure of the thought process has a definite semantic topology that determines the ways that narrative and the environment symbols are used to modify each other in different combinations. In Deacon’s jargon, “The system of representational relationships, which develops between symbols as symbol systems grow, comprising an ever more complex matrix. In abstract terms, this is a kind of tangled hierarchy network of nodes and connections that defines a vast and constantly changing semantic space” (Deacon, 1997: 100).

10.37 The myths and symbols of the Wickham Apartments function like a complex adaptive system. A coherent, dynamic language has been developed as the design evolved, and with it comes a dimension of dynamics operating in the myths. In other words, the language, with its syntax and semantics has become part and parcel of the design process. Following the theories of complexity, Deacon maintains that language resembles emergent self-organising systems (ref. Deacon, 1997: 110). The spaces, myths and forms eventually organise into a recognisable language that is acceptable to the observer.

10.38 What has emerged at the end of the process is like a tipping point, when all the disparate parts come together in a coherent language and a recognisable whole. Taylor provides a biological analogy to the tipping point, which could explains the basis for an architectural creation, with reference to Per Bak’s ‘self-organised criticality’:

Four points in this description of self-organised criticality must be emphasised at this juncture. First, as the term implies, self-organised criticality displays the typical features of other self-organised systems. The state results from interactions among components rather than from the intervention of any external forces or agents. Second, in the state of self-organised criticality, nonlinear events can have effects disproportionate to their causes. Third, the dynamic interactions among individual elements of the system generate global events that require a holistic description, which cannot be reduced to an account of the individual elements (Taylor, 2001: 148-9).

Review Of Hypothesis

10.39 Based on the arguments developed in the Discussion (Section 9) and Conclusion (Section 10), the hypothesis which set the thesis at the beginning of this
thesis: “Architectural innovation is ostensively meaningful. It is validated through context and launched from the mastery of Language Games and Form of Life” is revised to:

*Architectural innovation is autopoietic*, which culminates* a period of learning, borrowing and mastery through enchainment. It is syntactic and synesthetic*, and validated through context and culture.*

*‘Autopoiesis’, which is the “Self-conscious reflexive action and recursive closed organisation of an open system” (ref. Item 10.13-5).

*At culmination, a tipping point is reached, “where order emerges from disorder and patterns develop from noise” (ref. Item 10.20).

*‘Synesthesia’, which is the “sense and intelligence mixing in unusual patterns of perception and thought” (Item 9.149).
NOTES


7. Lawson for example, quotes Hertzberger, who infers that creativity in architecture must firstly be problem-solving:
   *For me creativity is, you know, finding solutions for all these things that are contrary, and the wrong type of creativity is that you just forget about the fact that sometimes it rains, you forget that sometimes there are many people, and you just make beautiful stairs from one idea you have in your head. This is not creativity, it is fake creativity* (Lawson, 1980: 157).

8. To Hertzberger, architectural innovation is something that is learned:
   *Everything that is absorbed and registered in your mind adds to the collection of ideas stored in the memory; a sort of library that you can consult whenever a problem arises. So, essentially the more you have seen, experienced and absorbed, the more points of reference you will have to help you decide which direction to take: your frame of reference expands* (Lawson, 1980: 159).

9. Kneller, for instance, says that:
   *One of the paradoxes of creativity is that, in order to think originally, we must familiarise ourselves with the ideas of others.... These ideas can then form a springboard from which the creator’s ideas can be launched* (Lawson, 1980: 161).

10. Sant-Elia for example appears to have the ability to visualise architecture based on a manifesto: *Manifesto of Architecture*, 1914.

11. Speaking about phenomenology, Sartre reminds us that:
   *They are internally united through the synthetic acts of the mind. Husserl has given a remarkable description of these particular intentions of which, beginning with the living in concrete 'now' direct themselves towards the immediate past in order to retain it and towards the immediate future in order to seize it* (Sartre, 1994: 96).

12. It is wide accepted today that cognition is typically the interaction of many functionally individuated parts. Fodor, for example, says, in furtherance to the
‘modularity thesis’ that, “for better or worse, the neologistic usage according to which modules are informationally encapsulated mechanisms of cognitive processing is now common in the field” (Fodor, 2000: 57).

13. According to Collins, Chambliss has studied interaction in athletic contests (competitive swimmers), and found that there is a major difference in outlook between the high-level performers (consistent winners) and lesser performers (losers). The difference is manifested in the detail of behaviour: winners are meticulous in performing their routines in ways that they have deliberately developed; they have built up their own rhythms and stick to them in the face of competitive opposition. The winners make themselves the focus of attention; they set the expectations around themselves. Losers, however, let the winners become the focus, and adapt their micro-behaviour toward them (ref. Collins, 2004: 122).

14. For example, every architect and student knows the innovators who have changed international architectural paradigms in the 20th century. Some of the names like Le Corbusier, Mies van der Rohe, Frank Lloyd Wright, Louise Kahn, Frank Gehry and now, Francisco Calatrava are on the lips of everyone familiar with contemporary architecture.

15. Collins states that:

*Early in the twentieth century, Vilifredo Pareto proposed what has become known as the ‘80/20 principle’ or rule. As explained by Richard Koch in a charming book, ‘The 80/20 Principle’, one can in general accomplish most of what one wants – perhaps up to 80 percent of the target – with only a relatively modest amount of effort – perhaps only 20 percent of expected effort. It is important to be judicious about where one places one’s efforts, and to be alert to ‘tipping points’ that abruptly bring a goal within (or beyond) reach (Collins, 2004: 7, 8).*

16. Kearney explains the three traditional preconceptions that restrict creative imagination as: (1) ‘Dualism’ – images were generally considered as allies of the lower corporeal order and thus inimical to the elevated pursuits of the intellect; (2) ‘representationalism’ – images were construed as mere copies of our sensible experience; and (3) ‘reification’ – images were treated as quasi-material things (res) in the mind rather than acts of consciousness (Kearney, 1998: 13).

17. Moran summarises the concept of ‘noesis’ and ‘noema’ as follows:

*In order to get away from all psychologistic and naturalistic misconceptions, including those of descriptive psychological psychology (instead, rely on eidetic moments), he introduced a new terminology, drawing on the ancient Greek terms for the ‘act of thinking’, noesis, and ‘what is thought’, noema, terms which carried less philosophical baggage than traditional terms for the intentional structure, for example ‘act’, ‘content’, ‘meaning’, and so on. For Husserl, the
most important thing to emphasise is that noisis and noema are correlative parts of the structure of mental process....

The noesis is ‘the concretely complete intuitive mental process’ approached in such a way that its noetic components are clearly emphasised. The noesis includes what Husserl formerly called the ‘quality’ of the act, that which all acts of hoping, or remembering, have in common. But the noesis has a larger function in that it is responsible for bestowing sense, for constituting the meaning of what it grasp (Moran, 2000: 155, 156).

18. Husserl describes ‘neutrality modification as follows:
As we can also say, the situation is that the neutrality modification is not a specific modification attached to actional positings, which are the only ones which are actual; it is instead, an eidetically fundamental peculiarity concerning any consciousness whatever, expressed in the attitude toward actual protodoxic positableness or non-positableness. Whence the necessity to exhibit them just in the actual primal positings or in the modification which they undergo (Husserl, 1998: 269).


20. Boden states, for example:

To be sure, anecdotes are unreliable. A supremely creative individual such as Mozart attracts an accretion of anecdotes, not to say myths, some of which are downright false. One famous passage, quoted by Hadamard and often repeated by his readers, is probably a forgery. Mozart probably did not write these words: “[Sometimes] thoughts crowd into my mind as easily as you could wish. Whence and how did they come? I do not know and I have nothing to do with it. Those which please me I keep in my head and hum them; at least others have told me that I do so.” Nor did he write (a few lines later) “Then my soul is on fire with inspiration”, nor (later still) “It does not come to me successively, with various parts worked out in detail, as they will later on, but it is in its entirety that my imagination lets me hear it” (Boden, 2004: 266).

21. In correlation to this, Gardner uses the 10 + 10 year rule. He estimates that it takes 10 years to become an expert and another 10 years to make a truly original contribution to the domain:

From my perspective, this is the chief reason for remaining in school. It has been estimated that it takes ten years to become an expert in the domain (and perhaps another ten years to make truly original contributions to that domain) (Gardner, 2004: 139).

23. The *Jyllands-Posten* Muhammad cartoons controversy began after twelve editorial cartoons, most of which depicted the Islamic prophet Muhammad, were published in the Danish newspaper *Jyllands-Posten* on 2005-09-30. The newspaper explained that this publication was a contribution to debate regarding criticism of Islam and self-censorship. In response, Danish Muslim organisation held public protests and spread knowledge of *Jyllands-Posten* publication. As the controversy grew, examples of the cartoons were reprinted in newspapers in more than fifty other countries, which led to violent as well as peaceful protests, including rioting particularly in the Muslim world.

Critics of the cartoons describe them as Islamophobic and argue that they are blasphemous to people of the Muslim faith, intending to humiliate and marginalize a Danish minority, and that they are manifestation of ignorance about the history of western imperialism, from colonialism to the current conflicts in the Middle East.

Supporters of the cartoons claim that they illustrate an important issue in a period of extremist Islamic terrorism and that their publication is a legitimate exercise of the right of free speech. They also note that similar cartoons of other religions are frequently printed, arguing that the followers of Islam were not targeted in a discriminatory way.

Danish Prime Minister Andus Fogh Rasmussen described the controversy as Denmark’s worst international crisis since World War II (ref. [en.wikipedia.org/wiki/Jyllands-Posten_Muhammad_cartoons](https://en.wikipedia.org/wiki/Jyllands-Posten_Muhammad_cartoons)).

24. Paul La Violette is head of the Starburst Foundation, an interdisciplinary research organisation based in Portland, Oregon.

25. The original seven intelligences outlined by Howard Gardner are: 1) Linguistic Intelligence; 2) Logical-mathematical Intelligence; 3) Musical Intelligence; 4) Bodily-kinesthetic intelligence; 5) Spatial Intelligence; 6) Interpersonal Intelligence; 7) Intrapersonal Intelligence (ref. Gardner, 1999: 41-3).

27. Baudrillard’s ‘America’ was published in 1989.

28. Here, Lim is referring to the Morley Road House, Singapore, 1996 by Mok Wei Wei, as example.

29. Here, Lim is referring to the East Gate Plaza Renovation, Taipei, 1999 by W. Chiu, as example.

30. In 1943, Warren McCulloch published a paper, “A Hierarchy of Values Determined by the Topology of Nervous Nets”. His starting point was neurology, and he showed that the nervous system builds a sensomotor circuit via the so-called ‘reflex arc’. A stimulus produces a response that leads to a motor activity, which in turn leads to another stimulus.

In organisational terms, what we have here is a sensori-motor circuit, a loop consisting of seeing and acting, acting and seeing which leads to a stability of action (ref. von Foerster, 2002: 85).

31. Cybernetics grew out of Shannon’ Information Theory, which was designed to optimise the transmission of information through communication channels, and the feedback concept used in engineering control systems. In its present incarnation of ‘second order cybernetics’, its emphasis is on how the observers construct models of the systems with which they interact to maintain, interact and self-organise (http://pespmc1.vub.ac.be/CYBERN.html).

32. A person threatened by the environment (or informed of an approaching pleasure or danger) prepares for action. The body mobilises reserves of energy and produces certain hormones such as adrenalin, which prepare it for conflict or flight. This mobilisation can be seen in familiar physiological reactions. In the presence of emotion, danger, or physical effort the heart beats faster and the body perspires. The individual may experience shortness of breadth, cold sweats, shivering and trembling legs. These physiological manifestations reflect the efforts of the body to maintain its internal equilibrium. Action may be voluntary – to drink when one is thirsty, to eat when hungry, to put on clothing when cold, to open a window when one is too warm – or involuntary – shivering, sweating (http://pespmc1.vub.ac.be/HOMEOSTA.html).

33. With regard to judgment and criticism in art, Luhmann speaks about ‘second-order observation’, which is observation upon observation: A work of art is usually an observation of something, and a judgment is an observation of that observation. Each artist interprets the object he sees differently from another artist who sees the same object, and equally, each critique in the mode of second-order observation sees the work of art differently to the other critique (ref. Luhmann, 2000: 286). By the same token, all architects are observers and interpreters of the first order, and their critiques are second-order observers.
Luhmann infers that the differences in first and second-order observations are the caused by self-programming, which is influenced by the prevailing social system (ref. Luhmann, 2000: 55).


REFERENCES


