

Creative Transformation: A Design Perspective

This paper describes the essence of a design research programme, developing strategies to facilitate creative development through paradigmatic transformation. Section One introduces the notion of a Being strategy by exploring the Möbius Ring as a model for creativity. The model offers metaphors appropriate to Design which seeks to build a connection with the underlying dynamics of subjective life. Section Two explores how these strategies can be employed within a Design context to transform the consciousness of the designer.

SECTION ONE

Creativity is a process which is both a means to an end and an end in itself. It is central to all disciplines as it is the mother of all ideas, concepts or theories. Yet this paper is based in the design world and uses the design process as a global entry point and analogy for the act of consciously creating. Indeed in western culture, design has become a powerful force, a metaphor for existence.

Design is at the cutting edge of change, yet designers can not afford to just anticipate change, but need to be able to initiate it. If the designer is to make the jump from present facts to future possibilities, they need to not only challenge existing Design paradigms but their own personal paradigms - transforming the very infrastructure which inhibits their creativity.

Theories and concepts of creativity have unfolded over time with multiple facets and different perspectives. The most orthodox of these tend to represent creativity in a series of linear stages (Wallas, 1926; Poincaré, 1924). One of the earliest of these was the German physiologist Herman Helmholtz' 3-stage model of saturation, incubation and illumination. This model inspired the development of similar models, culminating with the American psychologist Jacob Getzels' 5-stage model (Getzels, 1980), of first insight, saturation, incubation, illumination and verification (see Figure 1).

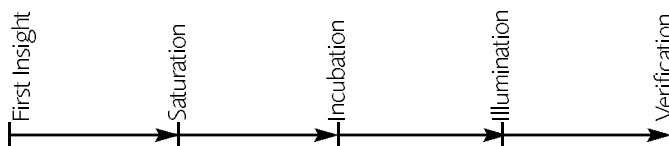


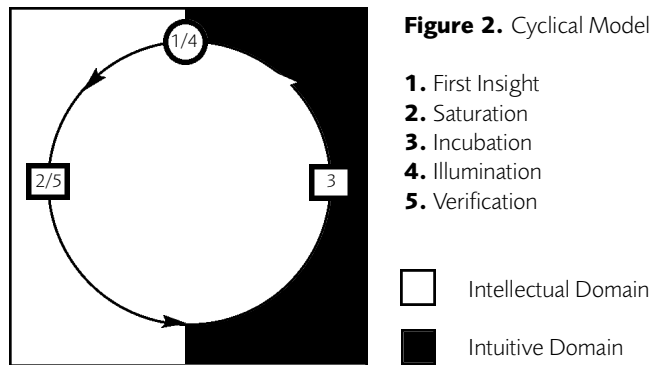
Figure 1. Getzels's five stage model of creativity.

These models although reductionist are very perceptive. For example, within a design context, the designer has a first insight (usually in the form of a Design Brief) that there is a problem to solve. This leads into a period where the designer surveys the problem by researching existing designs and bodies of knowledge. Once these have become familiarised, solutions need to be generated. It is during this 'mulling over' period that subconscious and unconscious processes take over. As the designer emerges from this stage, the creative breakthrough or moment of insight is experienced, where ideas are brought into the forefront of consciousness. Finally this raw data is mentally checked and developed, so that what was a subjective idea can be projected as a possible objective creation. However, Getzels' model fails to embody a more fundamental dynamic.

Creativity relies on the dialogue between the two internal processes of the mind - the intellectual and the intuitive. This dualism inspired Descartes and many other philosophers (e.g., Bergson, 1911; Ponomarev, 1973) who separated intellect from intuition and saw

them as opposite directions of the work of consciousness: intuition in the very direction of life, and intellect going in the reverse direction concerned with the movement of matter. Separately they reflect different complimentary aspects of the human experience and together give a complete idea of the world.

Getzels' model can therefore be re-cast to reflect this imbalance. First insight describes the initial shift from an intuitive to an intellectual perspective. The balance then shifts towards the intuitive as the creator slips back into the incubation stage. Illumination in turn describes the profound moment where the idea emerges from the darkness of the unconscious into the bright light of consciousness - where the idea is intellectually verified. This interpretation therefore changes the original linear model into one where ideas are organic, cyclical and continuously developing - without a beginning or an end (see Figure 2).



Creativity seen in this light becomes an extremely dynamic process, a dynamic imbalance, using the polar opposites of intellect and intuition (Torrance, 1979). Creativity cannot exist without this interplay. However, a two dimensional cyclical model still seemed inadequate in expressing the inherent dynamism of creativity, so a three dimensional model based on the Möbius Ring was developed (Udall, 1994). The shift from a two to a three dimensional model is itself analogous to the shift from intellect to intuition.

The Möbius Ring was discovered by the German mathematician August Ferdinand Möbius. It is a classical topological model with unusual physical properties. The Ring can be constructed with a rectangular strip of paper, where one end has been given a half twist of 180 and joined to the other end. The twist or flip sets up a living paradox in that the inside and outside are one and the same thing. Any point on the strip can be joined to any other point by a curve lying wholly on the strip and not crossing the bounding edge.

Translating the essence of the two dimensional models into this three dimensional model requires an enlarged synthesising viewpoint, and is similar to the design student making the shift from two, to three, and even to four dimensional thinking i.e. from visualising a flat plane, to being able to twist the plane through mental space, and then being able to imagine the form from both inside and outside at the same time (Rucker, 1985).

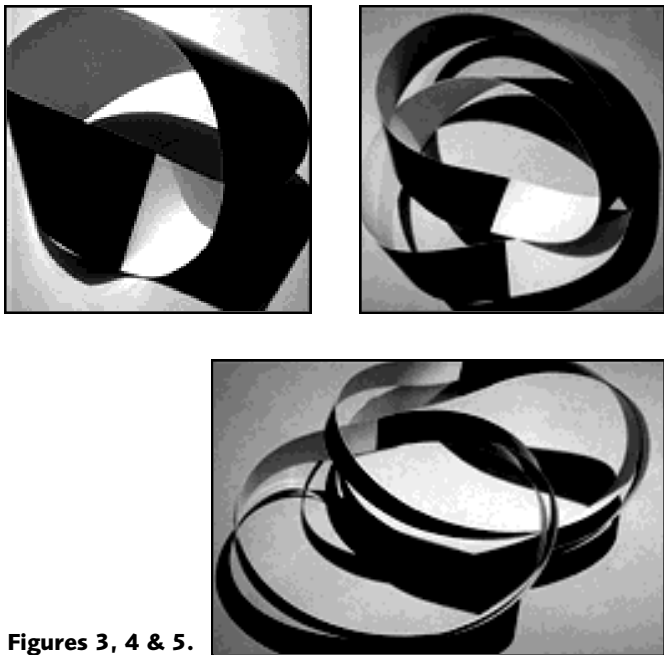
The Möbius Ring exists in the external world and can be conceived as a gateway between theory and practice. Its metaphoric potential lies in its ability to represent simultaneously two modes of thought which are traditionally separated but in this instance are interconnected. The two domains of the mind are represented by the two sides of the strip;

the *flip* representing the doorway between the two modes of consciousness. The three dimensional cyclical journey around the ring describing the dynamics of creativity.

To transpose Getzels' five stage model once again...first insight occurs as the creator exits out of the *flip* from dark to light. (This initial motion is out of the flip and not through it - the first insight lacking hindsight.) This leads into the intellectual (preparation) stage where the mind tackles the problem at hand. As the *flip* is reached a second time, the intuitive processes (incubation) are allowed to take over. Out of this soon follows the fourth stage (illumination), as the *flip* is reached a third time and the idea is born. Finally the last intellectual stage (verification) becomes dominant again and the cycle continues.

The Möbius Ring therefore emphasises the *flip* between intellect and intuition, particularly during the moment of insight, by highlighting the need to move out of the normal plane of thinking. The *flip* takes the creator out of the norms, rules and roles - allowing a new perspective from which to solve the problem.

Further physical properties of the Ring (see Figure 3) can be used to express more fundamental metaphors. For example, dissecting the Mobius Ring along its circumference results not in two separate rings but in a single and larger more complicated ring (see Figure 4), illustrating the unpredictable nature of creativity (Boden, 1993). Dissecting this larger ring again (see figure 5), creates two rings which are intimately interconnected. It is this property which has poetically affiliated the Mobius Ring with the ever changing and magical journey of love between two people (Bach, 1984).



Figures 3, 4 & 5.

Indeed the creative breakthrough is very similar to the love experience, where lovers can exist exquisitely united during moments of ecstasy and interconnectedness, where a complete belongingness is experienced (Needleman, 1990). Time passes in their ecstasies: such that a day may flash by as if it were a minute, and a minute may be so passionately lived that it feels like a day or even a year (Maslow, 1968). This disorientation is reminiscent of the designer, who becomes totally oblivious to time and space during creative insights, and appears to be a diluted, more frequent, version of the mystical or religious experience - where there is a fusion between the observer and that being observed. These oceanic experiences are common during moments of insight, where time and space seem to momentarily fade away, living eternally

in the present, absorbed in the *Here and Now* (Koestler, 1964). Thus the notion of *Being*, existing beyond thought and knowledge, however temporary, is a central part to the creative process. This means that creativity can not only be seen as a dynamic imbalance between intellect and intuition, but that even beneath this lies an oscillation between *Becoming* and *Being* orientations. For example the intellectual stages of saturation and verification are predominately cognitive based, where thought and knowledge rule. A separation therefore exists between the thinker and the thought, implying an awareness of time and space, placing these stages in the realms of *Becoming*. However, during the moment of illumination or creative breakthrough, creator and created are inseparable and experienced as a whole, detached from associations and relations, and unrestricted by time.

The Möbius Ring therefore acts as a multi-dimensional model which explores the fundamental dynamics of creativity. The *flip* acting as an entry point and as a catalyst for experimental research into the notion that during the creative process the creator shifts between *Being* and *Becoming* orientations.

SECTION TWO

Being orientations can be provoked with strategies that open the mind to intuitions, pushing against the limits of the creators world view, allowing the listener to become the listened. This creates an evocation where the creator is receptive, synthesising and open to abstracting. The notion of a *Being* strategy shifts the focus onto the most fundamental aspect of creativity - the creator themselves. It is about exploring inner life, to discover the potentialities of living itself. This dynamic realises the limitations of the intellect and the need to create just for the love of creating. As the love relationship is about self fulfilment, so creativity is about discovering something that thought cannot think. The journey around the Mobius Ring represents this magical journey - a journey of change and risk, where familiar paradigms must be challenged and transformed to ensure survival.

To escape the inhibitions of the familiar requires a provocation, or a *flip* in reality, to a fresher and freer orientation, open to new experiences and connections. It is through such direct experiential development that the creator and created are brought closer together and learning becomes a generative issue. This can be illustrated by using the analogy of how the Design Brief can be harnessed as a provocative tool to promote dialogue between creator and created, between self and other.

For the purpose of this illustration the Design Brief has two major dynamics: where to start from, and which direction to go in. The starting point establishes the focus of the problem, whether that is a topic or a product (e.g. to design a chair). The Brief would then continue to map out a direction or expectation for the designer to follow (e.g. a particular market). To this effect a model has emerged made up of descriptions of 5 nested levels of Briefs, according to similar hierarchical models (e.g., Bateson, 1972; Benson, 1991): with at one end a Brief which completely restricts creativity, and at the other a Brief which promotes complete creative transformation (see Figure 6).

At the lowest end of the spectrum the Brief dictates explicit instructions for solving the design problem and the solution requires almost no creative input from the designer. It is for this reason that this first Brief has been associated with zero creativity and been called B-0. Further up the spectrum the more creativity is forced to increase. The designer is brought closer to the solution, until at the higher end of the spectrum the designer and the solution become inseparable and indistinguishable. (NB. Creativity is by its very nature a living process and therefore types or levels are never mutually exclusive.)

B4	???	None	Allowing	Universal View	Holistic
B3	Abstract	None	Creative	World View	Meaningful
B2	B2	None	Proactive	Social-cultural	Symbolic
B1	B1	General	Responsive		Modifying
B0	B0	Specific	Reactive		Anonymous
Brief Starting Point	Direction	Process	Paradigm Shift	Solution	Point

Figure 6. Summary of nested levels

Beginning at the baseline B-0, this represents a Brief which initiates a specific starting point and then continues to map out a specific direction. This inflexible brief immediately traps the designer within very tight creative boundaries which are almost pinpoint in nature. The information within the Brief is direct and concrete and presented in an autocratic manner. Solutions can therefore only emerge from a reaction to the narrow and single expectation. This type of Brief is analogous to the designer who takes information for granted and sees the design solution as totally separate from themselves. Personal expression is obsolete as their experiences are not consciously called upon during the design process. The resulting designs are usually materialistic and anonymous.

The next level B-1 relates to a Brief which once again initiates a specific starting point but then goes on to describe a general expectation. This general rather than specific factor opens up a series of possibilities within a set requirement. The designer is able to respond more appropriately by selecting a direction within the specified area. This is the first time whereby some sort of personal choice must be made. This level is analogous to the designer who is goal directed, with motivation geared around building the ego. Solutions are generally modifications and slight improvements on existing designs.

Further still is B-2. This level relates to a Brief which describes a general starting point but with no direction. This inevitably forces a proactive approach, as the starting point must be questioned and the information within the brief challenged. This leads to a redefinition of the starting point from which a direction can be discovered. The designer has thus become conscious of the role of self, as a solution has evolved from a personal socio-cultural interpretation. This usually results in symbolic 'objects' which employ metaphor and analogy - developed by synthesising the old and new.

Beyond B-2 is B-3. This level represents a Brief with an abstract starting point and no direction. The starting point describes a concept which does not exist yet, so the designer has nothing to intellectually hold onto. Between every word and every space an emptiness is met which needs to be bridged. The designer must therefore challenge the starting point by exploring their entire world view - their personal paradigms (Benson, 1991). It is no longer good enough to question the explicit information or knowledge but to question how they know what they know. It requires a profound break with past traditions of reductionism and is a source of great transformation. It is at this level that fundamental beliefs are explored. Indeed the very concept of 'Design' is challenged as the designer becomes aware that the notion of 'Design' itself is also inherent within the solution. Creations at this level take the concept of 'Design' into new territory and objects are both original and meaningful. Creativity is therefore involved in every experience as the creator tries to make meaning in the self-world dialectic.

At the end of the spectrum is B-4. This is a scenario without a Brief as 'subject' and 'object' are inseparable - an unlanguageable land where universal paradigms are experienced. Although this is not a practical level with regard to design, it must be acknowledged as the ultimate anchor to the analogy. This is pure process, where the self merges with the selfless, and where the focus is on *Being* rather than *Becoming*.

The dynamics of the higher end of the spectrum highlight a number of important issues when it comes to developing the creativity of the designer - particularly that design is more than a problem solving activity but also an act of faith. It requires a paradigm shift from an atomistic view, which separates creator and created, to that which considers ultimate reality to be some kind of order or pattern or even consciousness, where creator and created are inter-connected.

Accessing the unconscious is central to the higher Briefs, particularly when the way ahead is foggy. The emergence of a new idea, concept or theory therefore grows out of the uniqueness of the individual (Rogers, 1959). Unlike B-2 where the idea is inspired by connecting two external events (Koestler, 1964); B-3 requires the juxtaposition of an internal and external experience. The realisation or awareness of this fusion is born out of the Designer's unconscious through an intuitive insight. Intuition comes into its own when the designer is forced to deal with incomplete information, unfamiliar subject matter, or ambiguous premises (Goldberg, 1983), when facts are unable to point the way ahead (Zdenek, 1987). Unlike an impulsive reaction which arise when changes have already happened, intuition is direct and spontaneous, and comes into action before change takes place (Rosanoff, 1991). Creativity at these levels is therefore about being consciously aware of the sudden glimpses of infinity (Lindaman, 1978).

Level B-3 and above require a personal paradigm shift from self consciousness (me in the world) to consciousness of self (the world in me)(Parikh, 1994). Consciousness is the awareness that emerges out of the dialectical tension between possibilities and limitations (May, 1975). Creativity to this effect is the result of inner listening, a dialogue between self and other, 'subject' and 'object'. Therefore knowledge of reality or meaning does not lie in the 'subject' or the 'object', but in the dynamic flow between them (Bohm, 1987).

Whilst working with the dynamics of these higher Briefs the search for meaning between 'subject' and 'object' has certainly shown itself to be a major characteristic of the creative individual (Barron, 1969). Yet the concept of 'a dialogue' or 'a dialectic' is inadequate to describe the engagement between the polar opposites of 'subject' and 'object', or between the individual and the world/universe. Its inadequacy lies in the inherent limitations of language as a descriptive tool. By substituting the concept of 'relationship' a more holistic and deeper understanding can be expressed.

Like a love relationship, the creative relationship (or inter-relationship) must be flexible and continually open to change. The search for meaning and unity is facilitated through courage and passion, where synergistic potentialities are explored and cherished. Great energy and passion are essential ingredients for bypassing the rigid aspects of the tacit infrastructure of the mind (Bohm, 1987).

A truly creative relationship is also an autolectic engagement. It exists not because of the expectation of some future benefit, but simply because of belief or faith in itself (Csikszentmihalyi, 1990). Creative transformation occurs during this encounter (relationship) and is to be understood with the encounter as its centre. It is this encounter, moving away from the known towards the unknown, which transforms the self-world relationship (May, 1975).

Therefore to explore new personal paradigms, designers must not just actuate skills, but learn to take advantage of their intuitive insights by promoting encounters which close the gap between experience and reflection. These encounters require intensity and dedication, where deeper aspects of awareness are activated to the extent that the designer is committed to the encounter.

Once meaning has been experienced through the opening of Being, the quest for creative transformation becomes self-generative. Indeed meaning is a form of *Being* (Bohm, 1987). Learning to become more creative, means learning through relationships. As the yoke links the oxen, and the yogi attempts to link the personal with the universal, so the designer should be linking self with other, and creator with created. This requires more than a developmental perspective, where the designer expands the boundaries of existing paradigms, but a transformational one - a discontinuous leap rather than a nudge. Therefore for Creative Transformation to occur, the designer must have the opportunity to transform what they know, in order to find out what they do not know - or do not know that they know.

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