DREAM AND CREATIVITY: A HYPOTHESIS ABOUT THE PROCESS

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Two classic duels have been debated for centuries, one between reason and emotion and the other between dream and reality. By linking the two and by stringing together reason, emotion and dream as a context, we have before us an entirely new space for both, philosophical excavations and theoretical explorations; aninviting matrix, in which many a philosophical question can be re-considered. The question I will be contemplating upon in this paper, is that of creativity.

Let me at the very outset, spell out the 'why, what and how' of the attempted hypothesis. I believe that there are many topics of multi-disciplinary enquiry, whose core theoretical questions can be answered best in philosophy or through philosophical methods. Many such topics demand a broadening of, rather than an exclusion from, the traditional or current themes of Philosophy. Creativity is one such fascinating topic. Flanagan, calling for a holistic approach to philosophizing dreams, argued, "A robust theory of the nature and function of dreams will need to bring into equilibrium insights from philosophy, phenomenology, neuroscience, psychology, psychiatry, evolutionary biology, sociology, and anthropology".[1] Some contemporary philosophers have made similar appeals for a holistic approach to creativity.[2] Philosophy, I hold, must step out of the traditional confines of aesthetics, recognize creativity as an important domain of enquiry in itself and undertake a fresh, broad-based exploration of the multi-disciplinary knowledge, to help arrive at a comprehensive and satisfactory understanding of the subject.

What follows is one such attempt at cross-pollination of knowledge and theoretical growth, drawing upon the science of dreaming and psychology and hypothesizing about the process of creativity during wakefulness. With the premise that there is a deep similarity between the processes and tools of dreams and creativity, there are three stages of the theoretical exploration:

- What do we know of creativity based on recent research, especially in psychology?
- What do we know about the seemingly creative process of dreams and of the

role of reason and emotion from the standpoints of science and psychology?

- How can the thinking and knowledge about dreams be applied to the theoretical problems of creativity, specifically in this case, its process?

The creative process is yet to be fully understood and the hypothesis presented here, deals with only a few of its elements in brief, as a detailed exposition would demand a series of papers.

The Question of Creativity

Creativity: the Psychological Theories

Creativity has been the subject of much multi-disciplinary thinking, from ancient texts and aesthetics to research in fields like arts, psychology, neuroscience and artificial intelligence. There are, at least, five main areas of enquiry into creativity: (a) biographical work on and notes of highly creative people like artists, inventors and scientists, (b) psychological studies conducted on such people, (c) scientific inquiry and neuro-biological studies of the brain, (d) literature and arts, and (e) philosophical insights provided by thinkers on a range of related subjects like insight, intuition, revelation and aesthetics.[3] Of these, I turn to psychology here, to set-up the context of creativity. Modern psychological research has come to an understanding of creativity, centred around three things – 4 'C's, 6 'P's and ten types of theories.[4] The four 'C's of creativity refer to the four types or magnitudes of creativity:

(1) Big C: The creativity of the recognized geniuses like Einstein, Beethoven and Shakespeare.

(2) Pro C: The creativity of the professionals, who though recognized as creative, could perhaps never measure up to the geniuses.

(3) Mini C: The creativity of the hobbyists or professionals, who create for fun or for a living, but essentially replicate the work of those thought to be truly creative. (This would include musicians, who play out the symphony of Beethoven or road-side sketch artists, who make realistic portraits of tourists for a living).

(4) Small C: The creativity in everyday acts of life by one and all. (For example, the creativity of a child who draws a painting for a school assignment.)

The Six 'P's of refer to the areas of research and theory:

(1) Person: Elements related to the psychological profiles of creative people.

(2) Place: The historical, geographical and sociological factors and how they affect creativity.

(3) Product: The creative output.

(4) Process: The exact mental dynamics, processes and tools involved in the act of creativity.

(5) Persuasion, also called the Press: The motivations of creativity.

(6) Potential: The potential impact of a creative product on the society and the times.

Researchers, especially after the 1950s, have painstakingly collected a wealth of information about these factors from vast textual, empirical and historical research. The information is invaluable, but the theories are woefully inadequate and are at best the pieces of a larger puzzle. There are at least ten major 'types' of creativity theories in modern psychology alone, categorized as: (1) Developmental (2) Psychometric (3) Economic (4) Stage & Componential Process (5) Cognitive (6) Problem Solving & Experience Based (7) Problem Finding (8) Evolutionary or Darwinian (9) Typological, and (10) Systems Theory.[5]

Such is the confusion that some experts have even suggested that there is no need for a new over-arching theory that may eliminate some of the competing ones. Given that the data is rich and vast, the multiplicity of theories and the self-confessed inability of the theorists to arrive at a comprehensive understanding, indicate a core problem. Perhaps, there is something amiss, philosophically. Perhaps, there is a need for re-philosophizing the problem and not just re-analyzing the research.[6]

The Core Problem of Creativity Theories

In all questions related to creativity that await a satisfactory answer, one is especially baffling – the question of the exact process of creativity. How do we create? What are the specifics of the process? What happens in the mind and how? I believe that a satisfactory theory of the creative process would be the central piece,

around which other pieces of the puzzle would form a coherent picture. For now, it remains a mystery even more perplexing perhaps, than the process of dream-formation.

> The creative process remains largely in the domain of enigma, mystery and revelation – an almost divine act played out in the fragile realm of mortality. Fascinating and enigmatic, it is the quintessential magic of the universe, enacted in the microcosm of human existence.
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> …The artist rearranges the material and the experiential to "create", but he often does not know how; mostly, nor does the scientist. Ask the artist how he came up with a certain image, the poet about a verse, the scientist about his moment of eureka. He or she can rarely explain the mental dynamics of the process. A flash, a miracle, a sudden vision, or a long journey of insights and creative blocks! But how? He or she will perhaps provide you with some hints, sketchy descriptions of the stage, the setting, the situation, the engagement, the thought. But how exactly did the notations of a 'new' sonnet appear on a white page? The artist does not know, and often perhaps, does not even want to. Yet, the philosopher in me, wants to understand precisely that.[7]

How can we use philosophical wisdom and methods coupled with a holistic interdisciplinary approach to come up with the answers? What can we learn or apply for example, from our understanding of reason, emotion and dream, to creativity?

Dream: Plot, Drivers and Processes

Traditional and Philosophical Notions and Questions

Over centuries, so much has been written on the subject of reason and emotion that it is neither possible nor required to encapsulate it here. Suffice it to remind ourselves that reason and emotion are mostly perceived as conflicting forces that Plato described as two horses pulling a chariot in different directions, while the charioteer struggles to make them work as a team.[8]It has been suggested that the two, do sometimes work in tandem with each other, but the common belief and experience seems to be in agreement with Hume's assertion, "Reason is a slave to the passions".[9] Most people would assign the same status and conflicting properties to reason and emotion in the domain of creativity too.

The subject of dreams has also been discussed extensively across disciplines. The question asked most often, is: (1) Do dreams have a meaning, a message, a divine signal or omen? Additionally, Flanagan summarised some of the traditional philosophical questions about dreaming: (2) of dream versus reality, (3) remembering or experiences versus fabrication, (4) of morality, (5) of self, and (6) of the function,

if any, of dreaming.[10] Many of these questions find a resonance with those about creativity, especially the ones related to meaning, reality, self and function. But the question I am asking here, is about (7) the processes of dreams and the role of emotion and logic.

Let us look at some relevant information from a variety of sources, from the accounts of dreams of philosophers and others to scientific studies and psychological theories; and then see what can be applied to hypothesise about the process of wakeful creativity, and how.

How Dreams inspire Thinkers, Creative Individuals and Scientists

Most of us realize intuitively that dreams indeed have some sort of a link with creativity. The idea that the processes of dreams and wakeful creativity could be similar, though not identical, finds ready support in the accounts of the dreams of philosophers, creative individuals, scientists and others. These famous dreams demonstrate that dreams can be contemplative, philosophical, creative and even do scientific problem solving through images and ideas.

We know about some dreams of important philosophers and the profound significance that they had in relation to their life and work. Plato described a dream of Socrates that related to the day of his death. In Confessions, St. Augustine spoke to God of his dreams and the moral problems they seem to present. At a critical juncture of his life, Descartes saw three powerful dreams one night that impacted his life and philosophical work. Leibniz had a sort of a philosophical dream of a vast and deep underground cave in which men rushed into the darkness in pursuit of glittering little flies they called ‘riches’ or ‘honours’. Similarly, there are records of dreams of Spinoza, Kant, Wittgenstein and others.[11]

In literature, a famous dream is that of Coleridge. He dreamt of the poem, Kubla Khan, word by word, and upon waking up, immediately sat down to write it. After a few stanzas, the doorbell rang and a reluctant Coleridge got up to answer it, but when he returned to his desk, he had forgotten the remaining poem. The published poem remains the incomplete version of the one ‘created’ in the dream. Barrett and Van de Castle described many such phenomena. For example, artist

Salvador Dali claimed that dreams stimulated his work; film-makers such as Ingmar Bergmann, Carlos Saura, and Federico Fellini directly transformed their own dream images into film sequences; and Paul McCartney heard the melody of the song "Yesterday" within a dream.

Dreams have also been known to contribute to problem solving in science. Kekule reported that he discovered the ring structure of the benzene molecule, by contemplating a dream in which a snake seized hold of its own tail. Other dream-solutions have been reported for Mendeleyev's categorization of chemical elements, Howe's invention of the sewing machine, and Hilprecht's deciphering of the ancient Babylonian hieroglyphs.[12]

The Science of Dreaming: Dream Plot and Drivers

Though dreams are obviously creative in their nature, yet before extrapolating insights from the science of dreaming to creativity, one must understand the role of role and control of will and consciousness, emotions and logician dreams. One's will is absent or diminished, but not always. There can be some short-term and limited control of the will in 'lucid dreams'.[13]The state of consciousness in dreams is different from that in waking life.[14] Dreams represent a sleeping state of consciousness. Centres that arouse consciousness become active. The centres in the brain that process and perceive much of our waking space are active as well. But it seems that the brain is activating itself purely from within. Foulkes argues that dreams are little more than waking consciousness stripped of most sensory input and freed from the obligation of making coherent connections to the external world.[15]

That emotions are the drivers of the dream plot, hardly needs to be argued. Hobson suggests:[16]

- Dreams contain increased, intensified emotion, especially fear-anxiety that can integrate bizarre dream features and shape the dream story.
- There is an increased incorporation of instinctive emotions (especially fight-flight), which also may act as powerful organisers of dream cognition.
- The emotion, once triggered, is the driving force of the dream plot, and that the forebrain responds by surfacing associations, in the form of dream

imagery and actions.[17]

Others like Seligman & Yeller also hold that emotion is the primary shaper of the dream plot, and not a reaction to it.[18]

For the dream plot to unfold however, the driving force needs a counter force. It has for long been suggested that there is some kind of reasoning or logic at play in dreams. The neural network for dreaming contains enough cognitive processing areas to produce coherent dramatisations that often reflect the dreamer's conceptions and concerns in waking life. Even though the logical 'filters' are not applied, meaningful processing may still be taking place within the dreaming brain.[19] Dream imagery, and its hidden meaning, may be a result of what Berne and Savary call 'limbic logic',[20] explaining that the brain operates on at least three different types of logic:

(1) Linear Logic: The system for gaining knowledge, problem-solving, making choices, decisions and reasoning. It principally resides in the left hemisphere of the cerebral cortex, and is off-line during dreaming.

(2) Kinaesthetic Logic: It responds to immediate physical sensations with the goal of finding pleasure and avoiding pain. The seat of this kind of logic is the brain stem.

(3) Limbic Logic: Residing in the Amygdala and other limbic centres, it is active during dreaming. It has a goal of safety and survival in times of danger, and therefore associates an emotion to the sensory data it encounters.

However, some researchers suggest that a more 'refined logic' and the higher centres of the brain are also involved in dream thought. Hobson and McCartney contend that dreams are the result of higher brain centres attempting to make sense of the activity in the lower centres. From this viewpoint, dreams could be simply be an attempt to make a rational story out of random neural activity. Others like Antrobus also argue that higher brain centres, and some cognitive processes, are indeed involved in the creation of dreams at the onset.[21]

Psychological Processes of Dream Formation

To compensate for the lack of definitive knowledge about the 'refined' logic' in dreams, let us add to the mix, an insight about the dream processes, from the

theoretical work of someone, for whom the otherwise overused adjective ‘great’ is, in my opinion, quite befitting.

Freud’s theories have been debated, loved and hated, but can never be ignored. He covered vast ground on the subject of dreams, theorizing about the motivation, symbols, processes, tools and much else. While Freud’s controversial, yet thought-provoking theory focuses on the interpretation of dreams, I am going to draw upon something he said about the processes. Freud suggested that there were four tools of dream-formation: ‘condensation, displacement, substitution and dream-censorship’.[22] There is some neuro-biological evidence for condensation, and the other processes seem quite logical too. Most of us have had dreams that we seem to understand, at least partially, and the four processes are not hard to detect in the formation of the dream plot.

The Creative Process: a Hypothesis

Given that there is indeed some role of the will and consciousness in dreams, it would be reasonable to draw upon our knowledge of dreams to hypothesize about the process of creativity during wakefulness, provided we assign greater control of the will and consciousness in case of the latter. Just as in dreams, in the case of creativity too, the role of emotions is obvious. But perhaps, we need to account for more complex rather than primal emotions at play.

The Dialectics between Emotion and Logic

The conflict between emotion and logic is complementary in its nature and not merely adversarial. A dream is disrupted only when a strong or persistent external stimulus or a negative emotion becomes too much to contain and overrides the logical structures and tools of dream formation. As long as the processes and the dream-reasoning continue to successfully contend with the drivers, they help sustain the dream, and make it plastic.

The complementary nature of reason and emotion in dream-formation, I suggest, could be a key to developing a satisfactory theory of the creative process. Both in dreams and creativity - the conflict between reason and emotion, works as a dialectics that creates the form, like two complimentary notes that help create a

melody or two colours that mix and create a third one. Unlike the case of two horses pulling the chariot in different directions, the conflict is rather like two forces pulling a rope in opposite directions providing the necessary tension to hold it in place for the rope-dance of creativity to take place.

Dream Logic and Beyond

Just like dreams contain some sort of a narrative, most, if not all, artistic work, even if highly abstract, has the element of a statement or a narrative, obvious or otherwise. Of the three types of logic that science confirms to be at play in the brain, the role of two can be easily hypothesized in the case of wakeful creativity. While 'limbic logic' may not exactly be at work in wakeful creativity as it is in dreams, for it deals with rather primal forms of emotion, 'linear logic', though off-line in dreaming, is obvious in wakeful creativity. This is easily evident in the case of fiction. It serves as the threading device and along with other elements of thinking, sustains and moves the narrative of a fictional piece. The most obvious examples are the simple childhood stories that follow a linear chronological pattern, beginning often with, 'Once upon a time…'. A more complex play is evident in pieces with narrative devices like flashbacks and parallel time-frames. Here again, the sanctity of linear progression is accepted, though played with.

I must point out here that I do not wish to suggest that the creative process in its totality is itself linear. On the contrary, the overall process, I believe, is recursive, with linear logic being just one of its many tools working along with other processes and types of logic.

'Kinaesthetic logic' or similar processes help assimilate some of the immediate sensory data into the details of the piece at work, if found useful to its nature and content. The sensory inputs could trigger elements of the piece or its mood, especially in poetry or poetic work, due to their more fluid nature as compared to prose. In either case, the sensory input has to be suitable and malleable enough to facilitate assimilation, failing which, it could serve as a mere distraction or disruption.

In addition to the types of logic mentioned above, I would suggest there is another set of logic processes involved, at least in creativity - something that I call, a 'structural logic'. It is responsible for connections between sub-parts of a narrative or

an image and makes connections outside with other narrative elements and images to develop expressions like metaphors. This may even be termed ‘structural-metaphoric logic’. I divide it into two similar logics, that help connection within and outside a structure: intra-structural and inter-structural logic.

For the sake of brevity, it will be easier to explain it here by focusing on the development of metaphors, rather than a complex narrative. Let us take the example of a commonly used symbol in poetry - a tree. Once the tree is used as an initial metaphor in a creative piece, for let’s say, one’s life, structural logic makes connections within and outside the metaphor. Intra-structural logic can develop the creative piece by assigning values and expressions to parts of the tree - for example, the fresh tender leaves may be regarded as a symbol for new life, fruit as joy, and nest as one’s home, and so on. Inter-structural logic will similarly make meaningful connections outside, with elements like the soil, wind, and sun to take the narrative further. Summarily, one can hypothesize that the ‘linear logic’ holds the thread, the ‘structural’, develops and the ‘kinaesthetic’, assimilates in the processing of wakeful creativity.

Applying the ‘Freudian Four’:

Let us see how the four Freudian processes of dream formation - condensation, displacement, substitution and censorship - can be used in hypothesizing about wakeful creativity.

I feel that the first three process suggested by Freud operate much the same way in dream as well as creativity, while the fourth works somewhat differently. ‘Condensation’ in wakeful creativity operates, both at the level of ideas and metaphors. It can be easily understood in the context of fiction and films, wherein for example, the traits of two or more persons may be combined to create a new character suitable for the plot. At the level of ideas, condensation could act as a part of the processes like ‘conceptual blending’ that involves combining two concepts to create a third. Similarly, ‘displacement’ and ‘substitution’ also work at the conceptual as well as the metaphoric level. Both are evident in poetic metaphor-making, where often a simple and direct substitution takes place - the eyes of the beloved may be compared

to those of a dove, the walk compared to gait of a swan, or the voice to the music of a cuckoo, and so on, creating images that make for so much of our popular songs.

Beyond Dreams and their Processes

It is the role of 'censorship' in wakeful creativity however, that is the most interesting. The censoring forces are quite different from those active in dream-formation. To understand them, one needs to consider another set of dialectics - between emotion on the one hand and 'aesthetic and moral censorship' on the other.

Dream is the most plastic, forceful, fluid and to my mind, the most awe-inspiring of all creativity. The act of creativity during wakefulness may be inferior to the creativity of dreams in terms of its plasticity, brevity, movement, force and fluidity; but it is significantly different, if not superior in an important, and in fact crucial, aspect. The wakeful artistic creativity is tempered with a conscious exercise of aesthetics - the sense and sensibility of a *rasa*.

Besides the types of logic that science confirms and the structural logic that I have suggested, there is certainly another kind of reasoning at work in creativity. It is the process of aesthetic and moral 'censorship', not akin to the one that Freud suggested. While morality is easily recognized as a check, its success obviously depends on the freedom that an artist allows himself or herself in the act of creating. Interestingly, the role of aesthetics may not be seen as typical of censoring, but that is how it acts indeed, working a sort of 'refined' logic, gently checking and rejecting the creative formations that are not in sync with one's taste. Acting as yet another counter-force to emotion, it is vital, not only in developing the piece, but also in sustaining the dialectics of the creative process.

The conclusions may be encapsulated as follows... the creative process is dialectical and recursive. Just like in dream, in wakeful creativity too, emotion is the primary driver, while multiple operations of various types of logic and censoring act as the counter-forces. Many of these forces, including some types of logic and some of the resultant tools of processing, are similar to those of dreams, while some others are significantly different.

This of course, is just one component of the complex process of creativity. We must, as I had suggested at the very outset, undertake a multi-disciplinary approach to the questions of creativity. Despite years of research and multiple theories, a comprehensive and satisfactory theory of creativity is, a dream far from reality, a philosophical journey that beckons afresh. And, we have just begun.

So, in knowledge-context, we can say two things. We can say either that what is known cannot be falsified, or that if it is falsified, it is not knowledge proper[23]. The present survey favours the latter. Though knowledge is the best thing we can achieve, we have to entertain in Russellean manner that there is an element of doubt in knowledge[24]. To accept the contingent relation between knowledge and certainty is however not to give concession to contextualism or to invariantism. The reason is simple. Contextualism may approve of a particular piece of knowledge acquired by different individuals in similar contexts as final, or invariantism may mark a piece of knowledge acquired by a person as complete and beyond revision as another acquired by the same person in similar context. But the possibility of belief-revision together with knowledge-belief knot tends to extend the possibility of knowledge-revision to the "relative finality thesis" of context-sensitive and subject-sensitive cases of knowledge. It is to be noted that possibility of revision does not equate the status of knowledge and that of belief as epistemic notions, because there is no point in identifying them unless one tries to spoil the show. And undoubtedly, such identification would have been something least imagined by a responsible thinker even in dreams.

The inevitable question that arises here is: Is it possible for the defenders of knowledge-belief category-sameness to accommodate the challenging notion of knowledge-revision? Any positive answer to this question compels the theory-maker to construct a model of such notion. Any negative answer will bring the charge of contradiction. The task remains for future survey to find out whether and how to accommodate the issue of knowledge-revision if knowledge and belief are to be treated as performers of the same band.

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