

Naiveté as an Irrational Praxis: A Study of John Nash's *A Beautiful Mind*

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During the play of charades on a New Year's Eve, in the carnival like atmosphere people came as pirates, Indian squaw, black cat, monks and in all sorts of uncanny attires. But later came the father of all, the naked man wearing just the diaper and a sash of numerals 1959 with a smirky smile on face. "Having stolen the show, Nash grinned and bowed, waved a baby bottle full of milk at the assembled company, which was laughing loudly at this point— and then sauntered into the living room to join in the game of charades" (Nasar 239). The seeming charade of eccentric Nash became a moment of revelation to unveil his creative propensity in the form of naïve. The uninhibited spontaneity of Nash gave an access to the lurking innocence behind a philosophical being. This paper is an attempt to read the life of the mathematician John Nash whose naiveté allowed him to take philosophical irrational leaps.

The irrational here is the scientific philosophical praxis at the level of ideas whose dynamicity can be read through abstractions. It is an attempt to understand naiveté as a quintessential characteristic for a creative mind of hypothetical limits. In the first section, 'The Evolved Child', the paper talks about naiveté, whose formulation in a child's liberated self creates organic patterns of unimaginable abstractions. The observant and imaginative leaps of a child become an opening wedge into the unseen territories. In the second section, 'The Uncarved Form', the paper talks about the unhindered rawness of a mathematician who is draped in nature's tapestry to retain the essence of his being. In the third section, 'Non- Equilibrium Harmony', the paper under the frame of Method in Madness from William Shakespeare's *Hamlet*, brings in the harmonious being of John Nash whose seeming incoherence is not the cacophonous disorder, but a symphonic expansion of uncomputable notations.

The Evolved Child

But the adult is not the highest stage of development. The end of the cycle is that of the independent, clear-minded, all-seeing Child. That is the level known as wisdom. When the Tao Te Ching and other

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wise books say things like, "Return to the beginning; become a child again," that's what they're referring to. (*The Tao of Pooh*, 151)

John Nash retained the child in him and took over the novelty of a fresh mind with which he maintained his curiosity and acted on it with myriad approaches. When Nash came to Paris to meet his wife Alicia and his son he wrote "Alicia is in Paris expecting 'e'", who was his son John Charles who was addressed by his Nash as "Baby Epsilon" which is a tongue-in-cheek reference coined by a renowned mathematician who believed "that all infants are born knowing the proof of the Riemann Hypothesis and retain that knowledge until they are six months of age" (Nasar 277). The beauty of a child's mind glides on to the unimaginable ideas which becomes difficult to be thought of in the process of acquiring knowledge in a highbrow culture. Child's beauty lies in his innocence of bringing together what appears to be disjointed in an unpretentious way. The fragmented soon finds its coherence in the hands of a child to bring in infused creative cognisance within human spirits. The child is aware of things and enjoys the beauty of the world around in all kinds of peculiar ways. Benjamin Hoff in *The Tao of Pooh*, highlights the child who experiences the freedom of being anything and everything.

In the film *The Prestige*, Sarah's nephew is able to see the trick used by the magician which the other adults fail to understand. The cage magic where one bird disappears suddenly and the same bird comes again, the child could not avoid mangling the trick when the observant child questioned innocently, "where's his brother?" which astounds Borden who calls the boy "a sharp lad." The freedom of thought and eagle-eyed observations are not constrained by any pure rational normative standards. Naturally liberated child breaks through the functional constructs and is able to see through the strenuous reflections.

In "The Rainbow" Wordsworth describes the undecipherable acts of a child which have the capability to take the people around him in a state of incredulity. He says:

The Child is father of the man
I could wish my days to be
Bound each to each by natural piety. (7-9)

The mysteries of life are difficult to be understood in a rational way. And a child's seemingly unreasonable acts are difficult to be deciphered by a rational

mind. But the irrational ways of a little one cannot be negated because its beauty and innocence are the genesis of his being. Nature comes in its purity in the acts of a child. Nash held on to it to stay with and in the naiveté throughout, which brought out his essence of being. Wordsworth's ultimate wish to eternally be a part of the innate order is what Nash could fulfil for himself. Imagination, being one organic movement in a child's attempt for creative journey, elevates him and takes him to the unseen world of myriad possibilities.

Professor Martin Prochazka in the essay "Dream, Imagination and Reality in Literature: An Introduction", reflects on P.B. Shelley's idea of imagination as a "mere result of our remembrance of eternal ideas, but the extraordinary power of fleeting, subconscious impressions and effects, which recreate the world of our lives, including the ideas in our souls." Shelley feels that imagination is a way to free oneself from the constraints of human conditioning. Revolutionary spirit and ideas of freedom to enhance the human experience towards liberation was Shelley's guiding spirit.

Shelley says in the essay "A Defence of Poetry", "A poet participates in the eternal, the infinite and the one" (33). For him, the eternal continuous mind is the ultimate reality which encapsulates the inductive and comprehensive worldview. Keats says "I am certain of nothing but the holiness of heart's affection and the truth of imagination." The essence of "truth of imagination" elevates human cognition, going beyond normative ideas of reality. The non-linear imagination is the irrational path towards the unseen which creates the sense of beauty and therefore it is the truth of life. Albert Einstein regards the importance of imagination which is the nucleus of scientific endeavours. He says "I am enough of an artist to draw freely upon my imagination. Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world." Imagination extends human cognitive abilities and therefore is a creative medium rooted within the cosmic cognisance and yet beyond the familiar comprehension of human mind.

The spontaneity which is acquired by Nash in the process of learning and unlearning mathematics troubled people around him who failed to understand the beauty of a child's heart in the backdrop of an adult face. A "self-declared" free thinker found his spontaneity in his freedom of exploring the world (Nasar 143). Such free thinkers are like Ambrose who came to class one day with one

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shoelace tied and the other untied and an amusing reply by the mathematician came out as a humorous remark. He said “I tied the left one and thought that the other must be tied by considerations of symmetry”(156). The need to sustain and live the naïve as a part of essential human consciousness can take humanity towards pleasantly progressive expedition.

Hoff puts it appropriately when he says, “As if from far away, it calls to us with the voice of a child’s mind. It may be hard to hear at times, but it is important just the same, because without it, we will never find our way through the Forest” (155).

The Uncarved form

“From the state of the Uncarved Block comes the ability to enjoy the simple and the quiet, the natural and the plain. Along with that comes the ability to do things spontaneously and have them work, odd as that may appear to others at times” (*The Tao of Pooh*, 21).

Nash became that unbridled vehicle of mathematics which took nature’s course in its exploration of uncharted terrains. He did not cast himself in the worlds mould. But he casted out patterns from the cosmic design retaining the natural order of his being. After a certain degree of knowledge he rejected books “taking the attitude that learning too much second hand would stifle creativity and originality. It was a dislike of passivity and giving up control” (68). He did not approve of being “intellectually beholden” (71). Scholarship of Nash was a combination of learning, unlearning and ingenuity of his character which makes the idea of being a scholar inclusive and dynamic. The essential human element of unprocessed creativity leads towards the beauty of natural order of artistic disposition. When Nash’s high school chemistry teacher used to propose a problem “all the students would get out a pencil and a piece of paper. John wouldn’t move. He would stare at the formula on the board, then stand up politely and tell the answer” (38). Nash tried to experience the emotions for a thing before he actually put hands down on it.

In the film *Good Will Hunting* directed by Gus Van Sant is the story of a ‘mystery math magician’ whose instincts play on him and the most difficult of the problems are solved easily because of the acquaintance he had with the language of mathematics. Working as a cleaner in MIT, he could solve the problems given to the students of MIT on the board and nobody would get to

know of the mystery man. Will, the young genius knew the importance of freedom to work with full potential. His ideas on liberty are reflected in the court scene when he says, “liberty is a soul’s right to breathe. Without liberty man is a syncope.” For a genius to work on ideas it is important to have a mind free from any obstacles. He gives the examples of Mozart and Beethoven, who would just play piano at its first sight, so would Will do when a mathematical problem came his way. He would just play on it. He would solve the problems of music of his struggling girlfriend in an hour on a tissue and give them to her to extend the hours of being together. The beauty of mathematics is highlighted in the film in Prof. Gerald Lambeau’s words, an MIT professor who recognises the capabilities of this magician; “A difficult theorem can be like a symphony. It’s very erotic.” These forms can be comprehended at the level of experience to create imaginative abstract patterns.

In the film *Amadeus* (1984) by Milos Forman, a fictionalised biography of the great Wolfgang Amadeus Mozart, Antonio Salieri, got stuck with the limited curtailed and narrow domain of human sight. His failure to compose the music of divine significance even after praying to God day and night frustrated him to the core. On the other hand the misfit Mozart impressed everyone with his musical insights and spontaneity. The jealous Antonio knew of the merits of Mozart and gave a passionate monologue in his praise remarking:

It was beyond belief... He had simply written down music already finished in his head...and music... finished as no music is ever finished. Displace one note and there would be diminishment. Displace one phrase and the structure would fall... Here again was the very voice of God.

Salieri calls it “meticulous ink strokes. An absolute Beauty.” The impenetrable heads could not acknowledge him and behaved with him like an outcast. Nash was always so occupied with his thoughts that he failed to realise the presence of the people around him. His arrogance and antagonistic behaviour alienated him from the people and at the same time equated him more intensely with mathematics. He did not limit himself by simply observing but was an active participant. The musicality of his life was encapsulated in these unreasonable acts. Nash would whistle passing by the campus of the university which Warren Ambrose, a distinguished topologist tells his musical friends as, “Nash’s whistling

was the purest, most beautiful tone he had ever heard” (163).

After the death of Nash’s father he wrote a letter to Michael Artin, the son of a Professor in Princeton which started off with mathematics, followed by stamps all over and later as Artin says, “It was about Kochel’s numbers for Mozart symphonies. Kochel had catalogued all of Mozart’s works, more than five hundred” (281). The natural music of Nash is what encapsulates the irrational naïve of Nash. His life is musically described in the book *The Music of the Primes* by Marcus Du Sautoy as, “It is like creating a wonderful story or a piece of music which truly transports the mind from the familiar to the unknown” (33).

Non-equilibrium Harmony

Polonius: Though this be madness, yet there
is method in’t. (Shakespeare 2.2. 207-208)

The seeming madness in Hamlet is a form of philosophical elation of a highly sensitised being, struggling within the structures of normality. Irrational and rational are two contrary ideas, but irrational has a rationale too. The modality of the irrational due to the continuous movement has to be dealt in with abstractions. Although Nash's equilibrium is not a pursuit to find the ultimate. But it is a closest possibility in the unimaginable market of chaos. Not reaching the ultimate equilibrium point is not and should not be the point of concern. Equilibrium as perceived in the common language is not what the journey of life is about for the irrational beings, because the beauty lies in harmony. And Nash’s discovery is in complete harmony like his Beautiful Mind. Arvind Kumar in the book *Chaos, Fractals and Self-organisation* elaborates on the idea of equilibrium saying:

In equilibrium, opposing forces or factors balance out and the system has a fixed, inert behaviour. A book on a table is an example of inert equilibrium of the force of gravity and the reaction force of the table on the book...Equilibrium means the system remains at a fixed point in a phase-space.... Equilibrium in a simple case of more general notion of a steady state. (88)

Harmony on the other hand is not a static state. It has patterns and polyphonic complexity and coordination. Nash’s equilibrium complexity lies in it being harmonious. The contrast here is drawn on the basis of general ideas of

association of equilibrium with rational static behaviour of great admiration which becomes a yardstick to judge the sanity of a person.

The mad pursuit of Nash behind his naiveté created an ambivalence in the ideas of sanity and insanity. He becomes a genius in the guise of a madman. The Greek art before its encounter with the Dionysian, was artless and full of appearances. The artist continuously contemplated about the work instead of merging with it. Apollonian had the comforting spirit which took away the intensity much needed. It contained within itself the “apprehension of form” (Nietzsche 15). The Apollonian talks about the “measured restraint” which bounds within the calculated territory to restrain human being from becoming a philosophical entity. It takes away the beauty of spontaneity and unfathomable endeavours of a human being. The Dionysian on the other hand has the essence of eternity; “Man is no longer an artist, he has become a work of art: the artistic power of the whole of the nature reveals itself to the supreme gratification of the primal Oneness amidst the paroxysms of intoxication” (18). It becomes an alternative to elevate an individual. In the Dionysian state the boundaries between individuals are broken. The unseen reality which lies underneath is realised by the Dionysian. People who do not realise the essence of life and are caught up in the measurable moulds are, “Such poor wretches cannot imagine how anaemic and ghastly their so called ‘healthy-mindedness’ seem in contrast to the glowing life of the Dionysian revellers rushing past them.” To be one with the primordial one must submit to the Dionysian madness which goes beyond social barriers and any narrow perspective.

Nash transcended the Apollonian structures to enter into the Dionysian world of liberation which Friedrich Nietzsche talks about in the book *The Birth of Tragedy*. It was the narcotic effect of numbers which became a tool for him to think and express his thoughts of quest to unveil the unknown. Going beyond good and evil was his union with the primordial. In the process of going beyond the mundane he tried to create patterns in the world of chaos. Dionysian gave him the spontaneity which offended the people around him who mostly failed to understand his cognitive beauty.

Donald Newman, a mathematician at MIT said, “Everyone else would climb a peak by looking at a path somewhere on the mountain. Nash would climb another mountain altogether and from that distant peak would shine a

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searchlight back onto the first peak” (Nasar 12). Nash surpassed the ordinary ways to find new paths and explored his journey of mathematics through variate paths. It is the collective responsibility to comprehend the sensitive mind and create a space for beautiful ideas to take form.

Isaac Newton, always suffered an eccentric and solitary soul, he apparently suffered a psychotic breakdown with paranoid delusions at the age of fifty-one. Stephen Hawking, the great scientist, was suffering from ALS, a neuro muscular disorder in U.S. known as Lou Gehrig’s disease and continuous physical decline. He would survive against all odds because as Jane, Hawking’s care taker says “Stephen doesn’t make any concessions to his illness, and I don’t make any concessions to him.” Hawking worked on an intense pace, putting great demands on himself and expected everyone else to with the same energy and drive. In the film *The Theory of Everything*, we come across: “If to be mad is to be eerie, what is to be in the eyes of the world and having the experience in which you have a sense of revelation and features of the other people seem to be too stupid, to blind to recognise.” Such brilliant madness contributed to the mathematical canvas which stands frameless on the easels of mathematicians like Nash. He defined his story through mathematics and found a metaphor “ $B^2 + RTF = 0$ ” for his life which was “very personal” to him (167). Siegel says, “He knew number theory like mad”, “Diophantine equations were his love.”

Nash was age conscious, as Felix Browder recalls, “Would tell me every week my age relative to his and everybody else’s”. It was the heightened stage of imagination which led to delusions and other paranoid state of Nash which was soon declared to be an illness and Nash, a misfit in public gatherings. Nash referred to his delusional states as “the time of my irrationality” and during that period he played the role of a thinker, theorist and a scholar who would indulge into the complex phenomena (Nasar 326). He was negotiating with ideas and was trying to struggle to draw certain outlines. Libertarian views of Thomas Szasz, the American psychiatrist are put as, “insanity was a social construct rather than a symptom of disease” (305). This insanity might not be an equilibrium point, but it’ll be too jarring to call it cacophonous. This insanity has the beauty to create harmony. It has an eye to see through the patterns in the irrational cosmic construct. Nash’s Nobel Prize in Game theory is itself a way to predict the

equilibrium point which has its own uncertainties and unpredictability.

Nash's irrational naïve could not comprehend the idea of geographical boundaries unlike a rational mind. He soon became an outcast named "undesirable alien". His philosophical leaps created problem for him to the extent that he had to visit police station two or three times in a day. He was even arrested many times for not carrying a passport. In his mind he "was now a stateless, a man without a country; in the eyes of the authorities, he was a man without proper documents, which placed him in a vulnerable situation" (276). He even requested for a refugees status. His shift from America to Europe gave him a freedom to go to extremes of changing his identity and starting afresh with new perspectives. He desired to cut himself from the hangover of his past social self. Nasar writes, "Having resigned his professorship, having left not only Cambridge but the United States, and having given up mathematics for politics, he wished quite simply, to shed the layers of his old identity like so many outworn articles of clothing" (270).

Nash's imagination of a world government and the concept of a world citizenship was a thought based on unified world which made him a loner because of the people who were caught up in boundaries it became difficult for him to convey his idea rationally. "To effect his makeover, he wished to trade his American passport for some more universal identity card, one that declared him to be the citizen of the world"(271). Nash sings along John Lennon the idea of a world without boundaries. John Lennon dreams of a world of brotherhood in the song "Imagine":

Imagine there is no heaven
It's easy if you try
No hell below us
Above us only sky....
Imagine there's no countries
It isn't hard to do
Nothing to kill or die for
And no religion too
Imagine all the people
Living life in peace...

In his isolated working, Nash was trying to become a collective being of humanity

at large. He worked towards the civilisational growth of an undivided society. The utopian aspirations of Nash distanced him from the normalities of life. The beauty of the irrational thought behind the idea is laughed out loud at its impracticality. Robert Frost extends the thought through philosophical perspective in the poem “Mending Walls”. Although Frost creates an ambiguity in the idea of “wall makers” and “wall breakers” but there are lines which bring in the larger idea of an undivided world. Boundaries once created no longer remain just geographical, but they extend their division between human beings. The content of trust and mutual understanding is lost soon. Even if they are “walled in” or “walled out” they are forced to stay away from the immediate environment.

Boundaries are not nature’s creation. There is something unnatural about walls and nature tries to break through these constructed walls. For example, the highest and most expansive mountain ranges of Alps unites the entire Europe with its range. Alps spreads over the entire Europe sub-divided into small countries; Austria, France, Germany, Italy, Liechtenstein, Monaco, Slovenia and Switzerland to break the seemingly walled range. Frost suggests that there is some non-human agency which protests against the formation of these walls and wants them to be broken. Nash worked for collective humanity at large. He feared, that his discoveries might be used for wrong purposes and therefore faced continuous paranoia. Frost says in the poem “Mending Walls”:

Something there is that doesn’t love a wall,
That sends the frozen-ground-swell under it,
And spills the upper boulders in the sun;
And make gaps even two can pass abreast. (1-4)

The sound minds of the people who claim for maintaining equilibrium by creating walls therefore become objects of suspicion under such affirmations. The laws of freedom are curtailed under such restrains. Their well-reasoned argument tries to defend its superiority of logic by giving superficial statements of fencing the land to maintain peace.

In the film *Pi* or δ by Darren Aronofsky, Max Cohen, a mathematician like Nash suffers from headaches, paranoia, hallucinations and social anxiety disorder. He understands the world around him through mathematics and says, “Mathematics is a language of nature. Everything around us can be understood

through numbers. If you graph the numbers of any system, patterns emerge. Therefore, there are patterns everywhere in nature.” This beautiful mind is full of passion for patterns and observes nature closely to find answers to the mysteries unresolved so far. Nature becomes a guiding source to the mathematical ideas. One of Cohen’s café friend, Lenney Meyer who is also a Hasidic Jew mathematician doing his research on Torah talks about the people’s belief in Torah and elaborates by saying, “Thought is just a long string of numbers. Some say there is a code send to us by God.” He finds out that Hebrew is all mathematics and numbers. He describes that how the mathematical notations of the words mother and father, $2+1$ and $40+1$ respectively, when added together, gives the answer $10+30+4=44$ which is the mathematical notation for child.

The film is about the beautiful mind of a mathematician trying to understand the world through his vision conceived in the language of mathematics. John Nash like Cohen was observant of the nature and through his silent observations, tried to unravel the unseen mysteries of cosmic design. Nash would get lost in his thoughts so much that he would not realise the presence of people around him. He would walk around whistling all the time, and saw insanity as one of the properties of the irrational numbers which has the potential to capture the beauty of nature. Cohen finds while researching on ‘ δ ’ that everything is infused in a spiral which is like the formation of the symbol itself. The patterns of the smoke, the spirals of the fluid i.e. the tea he takes, the shell he finds on the beach etc. are all following the pattern belonging to the same design which incorporates all in one umbrella.

Cohen and Robenson's debate once led them to argue about the oppositions of being insane versus genius where Robenson calls it insanity on one hand and Cohen regards it as a genius. Insanity which has its manifestation in the naiveté, one of the attribute of the irrational is the major characteristic of a Genius who goes beyond Robensons’ and creates standards for the generations to follow. Cohen and Nash both were able to transcend their medically detected conditions of being paranoid and schizophrenic as they both were able to connect their illness as per the medical approaches with the mathematical problems. Nash found mathematical answers for his paranoia condition. And Cohen was able to draw connections of his headaches with the 216 digit number which he had been struggling with since long.

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One of the Italian immigrants in Princeton discussed about Nash's handwriting that Nash required ruled sheets during writing because without that his script formed a "very irregular wavy line". Nash might require a direction like the ruled lines to control his frenzied thoughts but that didn't take his efficiency for writing. Language is a medium to convey and concretize the ideas. It can have multivariate directions. The normative ways, when transcended, a noise is generated which disturbs the peaceful course. The standards of the social environment become a hindrance in the chaotic journey of the irrational minds who could not confine completely with the principled laws of the world.

Conclusion

The arrogant, indifferent behaviour of Nash has its manifestations in wisdom which is rooted in the irrational. Love is the outcome for wisdom. Annoyance will happen only when there is a desire to grow rationally. And child is not developed in these constructs but stays a naturally evolved being, unhindered by synthetic growth. A highbrow will lead towards detestation and hatred, which is an outcome of pure rational conduct. Mind affected by hatred is doomed and that hatred eats up the creativity which tries to find its way through the infected mind. W.B. Yeats in the poem "A Prayer for my Daughter" says:

Yet knows that to be choked with hate
May be of all evil chances chief.
If there's no hatred in a mind
Assault and battery of the wind
Can never tear the linnet from the leaf.
Intellectual hatred is the worst,
So let her think opinions are accursed. (52-58)

Yeats prays for his daughter to not to be a by-product of this hatred which will ruin her as a human being and will be a hindrance in the beautiful journey of her life. He wants his daughter to embody wisdom and joy. Intellectuals will reject and will indulge into a one-way study. But it is the angry mind without any kind of animosity, which will negotiate with the world for better prospects. The angry mind is a courageous soul who surpasses obstacles and believes in dynamicity of the world. The binaries of sane and insane are blurred because of philosophical engagements. The creative Nash raised himself to indulge into

a ‘ceremonious’ festivity. It is the harmonious pursuit to achieve that equilibrium which keeps one engaged with the idea of infinity. It is like the parallel lines which do meet but at infinity.

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