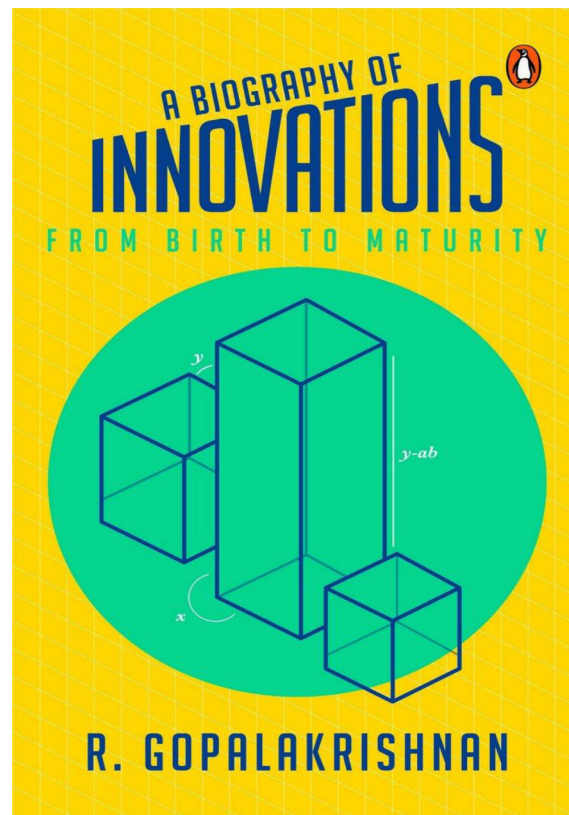


A Biography of Innovations: From Birth to Maturity



A Biography of Innovations: From Birth to Maturity,

By

R. Gopalakrishnan, Penguin Random House, New Delhi, 2017, Hardcover, 256 pages, ISBN: 9780670089895.

This book reminds one of the underexplored themes that study technological innovation, in terms of the cognitive, psychological and mental processes behind thinking and innovation. The author tries to establish a connection between the organic existence of human beings and that of technology, through its life time. In the economics of technology change literature, the product cycle model has been accorded a decent burial, what with Dunning's ownership-location-internalisation paradigm, arising to explain the failures of the Product life cycle model in the globalisation era. Given the contestations of the scheme of globalisation, it is only fair to consider both as still alive and kicking. This Book is inspired by a cognitive hangover, given the reality that countries that do not innovate

deal with mature technologies and the scope of innovative activity is known to be downstream labour-intensive processes. Vernon would be delighted to see this sentimental ode to his now disbanded paradigm. That said, to be fair the project that this Book executes operates at a different level. Therein lies the promise of the Project that the Book tries to engage with, i.e., whether it is natural to be innovative or in other words, whether innovation is a natural extension of one's being. This work perhaps serves to underscore the reconfiguration of human agency, through the lens of what is human about the human mind and what the mind behind the human is.

However, this Book takes us on the exciting journey from the fertilisation of idea, their birth and their infancy through to adulthood in a somewhat familiar way. That said, his juxtaposition is rooted in the glorification of the human mind for being far too complex and imaginative than any other device or entity, known to Mankind. These origins belatedly account for the social and cultural processes behind human thinking, which is a theme he develops later in the Book. Even so, an

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understanding of the cognitive and physiological is used as a proxy for the psychological, which is at once, slightly superficial and counterintuitive. In order to give the benefit of doubt to the author deeper exploration is merited.

The conceptualisation evidently gives technology a life and mind of its own and paints a vivid canvas for exploration of the mind that goes behind the innovation. It also tries to establish a connection with the executive and the creative aspects of its network and how it links with the world within and outside the human brain. However, at least initially, it stops short of engaging with the crisis (inherent to each stage in its development), that it outlines, as crucial to the development of each stage.

To begin with, the idea expressed, in relation to the conception of ideas, is reflective of the complexity of human brain's functioning that no discourse has been able to capture entirely—be it Freudian Psychoanalysis, Bayesian or Cartesian logic—inductive or deductive to more behavioural and complex responses in the form of behaviouralism. While the author does try to show the conception of ideas, as distinct from a moment of epiphany or genius, his subjective toolkit of metaphors, stories or narratives or his abilities in neuroscience or cognitive science strictly impair him from reflecting on what is all things equal, largely unknown.

His comparison with the metaphor of reproduction is to my mind, an imperfect fit for the explanation that he seeks to provide, despite a crafted use of case studies of fairness creams, air conditioning and the emergence of the cyclic structure of benzene, etc. More so, it does not go so far as to establish the organised nature of human thinking nor relate it to the birth of ideas (in terms of generating ideas as the valuable construct). It argues that the process is chaotic right from its inception. Assuming the discussion on the physiological generation of nerve impulse and its random travel, what is the element of probability that the frenetic activity leads to what is goal-oriented thinking? Does the role of social and cultural factors not define what these goals may be? However, he ends up citing conditions under which ideas are generated prolifically. Fecundity of ideas is rested upon dissent is point well-taken, as is the reference point of the value of the idea being the number of persons who benefit from it rather than those who generated it.

The author would see the limitation of his discourse compared to Edward De Bono's (1988) classical work, *Lateral thinking*. The innovation context is often characterised as "thinking out of the box". The author struggles to define the boundaries of the Box, much less tackle what lies outside it. The birth of the idea is used to justify the uncertain parentage and attack the obsession with who generated the idea. His view that it ends up making champions of the inventor by focussing on who the first one with the idea is, signalling a rethink on

the commodification of knowledge. But are these ideas not external influences, as opposed to internal ramblings? Thus, his proposed meeting and mating of ideas to make new ideas, subsumes the value of difference that he felicitates, with the birth of the idea from the concept, earlier. He is of the view that developmental nutrients that foster the idea cause changes to the subject or bearer of the idea. The astounding tensions, paranoia, and dreams they cause are not resolved to begin with. The author prevaricates to active promoters of concepts into ideas using the concepts that defy any reasoned explanation like serendipity and mind-set. Further, these are concepts, which do not postulate any concrete conceptualisation or operationalisation. Dreams are characterised in a somewhat mechanical way, quite contrary to the discussion of dreams as a process, which is a bit of a disappointment, considering he seeks to avoid the discussion. Through his set of active promoters, he proceeds to articulation and uses incomparable concepts like democracy and flying machines and benzene structure in an interesting way. Although articulating democracy using Aristotelean tautology, it articulates (what afflicts his own attempt), as he claims that the presence of a word (for the concept that he uses), as indicative of its existence. This appears like mental jugglery on first brush.

It is only in the latter part of associative thinking and articulation, does he bring out the need for articulation, by emphasising associative thinking, as giving value to inexperience. This coupled with articulation promoters like leaders asking charging up questions, emphasising the impact on humans rather than novelty, fostering team work, obliterating organisational boundaries and unleashing creativity, through the growth mind-set and development of innovation stamina, provides the much-needed explanation. The last two perhaps are the most difficult, despite the ostensible globalising influence on firms, work ethic, etc. Perhaps, the strength of the argument on articulation is reflected from the conversion of implicit into explicit learning and institutionalising of thought leadership. His use of discourse analysis based on experiences at workshops and teaching is apposite.

The infancy stage carries the thought leadership into more executive processes, promoters like open-mindedness, overcoming setbacks, continued risk appetite and continuous learning. The emphasis on the encultured nature of these processes and the behavioural approach to creativity is well-crafted, although the fostering of creativity at firm level undermines the argument on regional clustering of knowledge processes (p.54). This is somewhat distinct from the capability context that is often applied in policy design at the firm level even. Here, he studies the cultural aspects of creativity (p. 55) but stumbles on use of formal methods to develop an open mind in the context. It is unclear whether how developing an open mind to be creative is to differ from having a receptive

mind for knowledge transfer. The latter being a more feasible goal for innovation systems with capability differences still appears a tall order to go with this argument. However, specialising deeply in a philosophical platform is a point well-taken. Further, his insights from the exposure to a sharp critique of their work (in the context of an emergency intervention like dialysis) are particularly encouraging (p. 60-62). The crisis of existence is brought out better in this section, in terms of setbacks. Among the case studies on risk-taking, the case study on ALZUMAb from Biocon (p. 65) appears most relevant compared to the other case of archaeological exploration at Mohenjodaro discussed, which studies the risk-taking aspect, more diffusely. The emphasis on learning and innovation as companions is undermined by the propensity of wandering minds to generate more ideas, as opposed to focussed ones. This appears to be his unfinished explanation for the birth of ideas. The Tata Swach case study in the creative use of nano-silver for water purification rounds off the three elements of risk-taking, setbacks, and continuous learning well.

The creation of prototypes is likened to childhood and the four promoters learning from failure, adapting continuously, coping with the opposition and developing the story seem to appear in haste. This could be categorised as “innovation stamina” that he outlines earlier in the context of thought leadership and the growth mind-set, which is a good follow through. His emphasis on being intrepid as the sum and substance of learning from failure finds some requalifying in the promotion of creative errors. His emphasis that perception of end users and their consumer experience are vital, finally show the integration of thoughts and ideas into the social network, as it were. His analysis on coping with the opposition is well documented and appreciated. The narrative on developing the storyline prioritises the anecdotal over the analytical which can have its own contestations yet is particularly well-embodied in dealing with human emotion as a factor. However, the case on dry photocopier leaves much to be desired, in terms of the articulation before it. It undermines the author’s assertions on learning from the failure, in terms of the technological advancement, business models, and end consumers. His reiteration of learning of today’s start-ups from those of grown-up firms is a bit hasty, except for the development of growth mind-set, a bit like micromanagement, which most parents do during our growing up years. This lends an authentic flavour to his discourse on “growing up”, as it were.

The opening sentence of his account on the adolescent stage appears discordant in our context and outlines an impossible ideal of full product penetration. In our context, most firms face a product rollout problem and more importantly, in some cases, the formation of a tangible end product is not the targeted result, which finds later acknowledgment. In fact,

the presumption of market distortions and infirmities, assumes away what it seeks to control, much like what economists, at least in theory appear to do. However, his reiterated emphasis on disciplined business model development puts paid to any recognition of the “untraded interdependencies” that even rural markets have. Rural markets as they say even in management circles are the new buzzword, but yet it fails to capture the imagination of the author. The thoroughness proposed is thus purely pragmatic and instrumentalist and bit of a pipe dream as far as the informal economy of India is concerned. His articulation of creative tension, however, lends a socialising touch to his staid dialectic. He talks of examples like Shale gas, whereas zero emissions production of leather has created more waves on the points, he discusses for countries like ours. This, however, demonstrates a deep-seated bias towards products with well-developed value chains in the formal sector, whereas the reality of our economic structure is way too different from that. This applies to the detergent industry case that he outlines, which shows how his world view of all things Indian is a bit off-kilter. Further, the fracking industry case serves to juxtapose the crisis, skepticism, and insecurity of brick and mortar companies, compared to new age service-oriented firms, which is well-appreciated for this phase. Suffice to say, however, that radical innovations are neither the mainstay of the economies whose cases are cited nor that of ours in particular. Otherwise, the *raison d’être* of this Book would not be plausible.

I almost identify with his discussion on creating a culture of speaking up in firms, as a young Intellectual property professional. His emphasis on the survival of the paranoid serves to shake up the thoroughness versus speed of decision-making debate, considered cathartic to the stage of life under discussion, in ways more than one. His much-criticised obsession with the inventorship resurfaces rather abruptly in the case of Ayyadurai, the unheard inventor of email. Here, he undermines his previous argument on the standpoint of social benefit derived from an innovation (p. 101-103). The case of the bagel machines appears correctly, as characterised by the New York Times as an “unsweetened doughnut with rigor mortis”. The thoroughness of his example remains in doubt. His characterisation of getting lucky on the way reminds one of the dilemmas of planning for serendipity outlined earlier. The example of the ballpoint pen seems to emphasise the replacement characteristic of innovations, a thoroughness that is characteristic of the later years or stages, I believe. He provides an additional promoter of socialisation as an underlying exchange of ideas rather belatedly into the innovation life stage, a point which he left midway in the first chapter of his work. The positioning of tea shops of our times with the English cafés as centres for intellectual exchange brings a refreshing youthful flavour to his discourse.

In the young adult stage, the author prioritises process, social and networking skills, which seem rather apposite given the aspirational nature of this stage of innovation life cycle. However, the exemplification of franchises like McDonald's though has important lessons is still overrated in our context. The codification and paradigm of standard operating procedures seems rather farfetched and alien to the stage and a majority of businesses, firms and meso level units in our economy. The excitement is in the flexibility and ongoing evolutionary nature of these aspects. One would imagine a supply-side conceptualisation of the human element of these businesses, defines what Charles Chaplin, characterised as the monotony of repetition (call it deskilling or boredom) that capitalist production systems present in *The Modern Times*. That is suitably uninspiring and less than earth-shattering innovation, one may argue. But the compromises of marketisation become evident nonetheless. I prefer the undercurrent that social and network skills provide to this somewhat formalist discussion.

In the Chapter on maturity, the humanisation project of the innovator and his innovation proceeds with a recognition that there is no exciting innovation but problems to be solved and given their evolutionary and civilizational cycle, problems tend to manifest in different forms in defiant persistence. The economic, behavioural and social dimensions well beyond technology are recognised to pose the challenges. The case study of sanitation is particularly enlightening on aspects of behavioural change and socialisation of technology change through people involvement and social communication. The discussion of Indian agriculture as the nation's broken window is ironic yet true. His discussion on seed economy in the second rice revolution could have been better informed on policy issues. The discussion of agricultural training institutes akin to industrial training institutes could have studied the evolutionary roadmap. The choice of case studies demonstrates somewhat of a value chain/supply chain perspective, rather than actual innovative processes underlying it. His discussion on cross-border skills is inspired by a much-criticised discourse on Foreign Direct Investment and Innovation linkage, which renders it otiose and reductionist. The discussion on skill

development is sparse and insufficient. It unduly becomes triumphalist about reverse FDI. The exploration of cultural similarities with Israel holds the reader's interest but goes little in the direction of the challenges faced at the stage. Some recognition of lateral thinking paradigms comes across in this section, but it is unclear whether this appears at this stage, based on the case made by the author.

In part on "Ageing: The struggle for Relevance", the innovation problem is characterised as an entrepreneurship problem. Given the Schumpeterian paradigm of disruptive nature of innovation, the entrepreneurship issue is an issue of risk-taking, which appears counterintuitive to his narrative of this stage and conventional wisdom. Further, his discussion of product commercialisation is myopic as outlined earlier. The discussion of yoga and wellness mixes with a phenomenon of Zeigarnik effect, which is not elaborated at all. (p. 168-169). There are some contradictions to the success story outlined. The section on learning new Things, particularly adopting and discarding things is an interesting insight into a trajectory of change in "Innovation, entrepreneurship and change" considering he characterises it as a crucial aspect of this stage. He ends with painting a larger than life image of his understanding, borrowing a phrase that "innovation is life and life is an innovation", however, the reader is left with a certain vacuous understanding. The acronym CHILD used to summarise his interesting yet stretched discourse on idea and innovation is however apposite. As he rightly points out, Instruction happens when the devils of the mind are revealed. The epilogue offers the profound ideas that could have emerged earlier in the Book but still appears divorced from the thought process of the Book. To sum up, this Book is like a printed edition of *The Wonder Years* refusing to go beyond the novelty of neoteny, as it were.

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