

Chapter 4

Psychology of Innovation: Innovating Human Psychology?

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Abstract Innovation, creativity and novelty-seeking are being driven by particular states of mind and unique, differentiated socio-cultural needs. This chapter identifies the conditions that drive innovation and when the capacities that enable innovation might get marred in individuals. The focus here is on understanding the behavioral characteristics of the inventor and the psychological mechanisms that guide innovation. Creativity could be a starting point for innovation; the question as to whether this is a necessary condition, and further whether it is a sufficient or insufficient one, is looked into from a managerial, legal and, most importantly, psychological standpoint. A number of perspectives from within psychology that have attempted to address the dynamics that guide creativity and innovation are discussed. Finally, the chapter poses questions that are a primer for addressing psychosocial quandaries around innovations as a mechanism for change for the rural poor.

Keywords Creativity • Socio-economic needs • Behavior • Psychological mechanisms • Innovation diffusion

Creative Process, Marginality and the Need to Innovate/Renovate

All innovations start from a creative moment, and before we unpack the psychology of innovation, it is important to understand creativity a little better. Creativity and innovation have an intertwined fate, as they refer to both a (creative) *product* and the *processes* involved in this creatively-derived product (Legrenzi 2005).

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Creativity, some say, is the novel development of ideas, and the kind of transformation implicated in a creative process amounts to *making the familiar strange and the strange familiar*. Psychology offers divergent and convergent modes of thinking. Convergent thinking in character is socially guided, more conventional and puts the usual ways of problem-solving into practice; divergent thinking, by contrast, refers to modes of thinking in which problems and solutions are both thought of differently. In a divergent mode, creativity is akin to wanting to invent, innovate, and discover; the urge to change or find unusual solutions to different or even, at times, to the same problems. Other than divergent thinking, for a creative product to come to fore, we should not forget that there is a ‘creator’ too (imaginary, real or metaphorical, like the post-structuralist ideas of Jacques Lacan!) with an interesting mind and an aptitude for knowledge and innovation. Legrenzi (2005, p. 6) talks about two primary conditions of hierarchies and gradations under which human creation takes form:

(a) every scientific or technological solution, discovery or innovation being creative in respect to another that is less creative and (b) a work of art that produces pleasure or joy (or another emotion) and recreates that emotion each time one comes into contact with it. There’s a lasting feeling in reliving an emotion and sensing that the product, process or person is being more creative than something or someone else did before!

Within the fields of creativity, there are different views about the factors and conditions under which creativity thrives in society or in an individual. Some argue that creativity in childhood leads to innovation in adulthood, so there’s a human developmental perspective provided here (Bergland 2013). Others argue that creativity emanates out of freedom and choice (Legrenzi 2005), while still others allude to ‘optimal marginality’ as a thriving condition for intellectual creativity. It is an old debate that a certain kind of marginality gives insight that leads to innovative practices (McLaughlin 2001). An example from within the field of psychoanalysis might link to similar instances in other disciplines. Eric Fromm, a psychoanalyst who was interested in the human condition and social change, challenged mainstream Freudian ideas, and looking at how his ‘marginal’ position changed the Freudian discourse, we can identify his resourcefulness (in terms of influences from Marxist critical theory, social work and social sciences in general), his ability to engage with and bring in alternative sources of cultural capital, and his unique emotional energy that stimulated the alternative discourse generated around identity and selfhood (McLaughlin 2001) that led to a shift. Similarly, Darwin, Freud and Marx’s sojourns and splendid isolations became an active space for creativity that led to change in worldview and praxis.

Marginality is not only an intellectual concept; it is a multidimensional one, involving people at multiple levels of being and functioning (von Braun and Gatzweiler 2014). Gatzweiler and Baumüller (2013), in their work on marginality, linked poverty, ecology and developmental discourse to propose that it was the involuntary position and condition of an individual or group at the margins of social, political, economic, ecological, and biophysical systems that prevented them from accessing resources, assets, services, restrained freedom of choice, prevented

the development of capabilities, and eventually caused extreme poverty (p. 30). In this sense, any discourse on marginality begs the questions: How can the poor be creative or innovate as a way of recovering their rights and voices? Can creativity be infused, socially generated or so beyond their reach that more privileged others need to secure it for this group? Can the under-privileged be incentivized to innovate in the first place?

Innovation as the ‘Lava’ from the Fount of Creativity: Few Behavioral Characteristics

Creativity, one can then argue, is a quality of persons, processes, or products – all three are intertwined in a creative moment (Amabile 1996). Persons have a quality to generate new ideas, and processes of thought and behavior can then lead to products that bring in something unusual and out of the box. Kirton (1994) connected adaptation¹ with creativity to distinguish different cognitive style preferences (called the Kirton Adaptation-Innovation Inventory or KAI). His research revealed that adapters and innovators – both creative – tend to have different cognitive styles which, depending on the context, may act as an advantage and or a disadvantage. Adapters tend to give more weight to structure while innovators tend to assign it less importance.² Some differentiation is offered between general creativity and entrepreneurial creativity. In many ways, general creativity could be static and offered in silos that may not do justice to entrepreneurial creativity. Notions of creativity emanating from an eccentric personality, someone who may be essentially highly intelligent or altruistic, or even with a deep flair for the creative arts, might be a misnomer. Entrepreneurial creativity, in this way, is akin to innovation. Amabile (1996) defines it as an activity in which numerous new combinations are tried out, a sort of ‘creative destruction’ (à la Schumpeter 1934) within a particular industry which routinely brings the entire system into an unstable equilibrium.

Creativity and innovation have a few components integral to themselves, such as

- (a) expertise (includes memory for factual knowledge, technical proficiency, and special talents in the target work domain) (West 2002; Amabile 1996)
- (b) creative thinking (alluding to this extra bit of novelty, out of box way of solving problems and finding solutions)

¹ Adaptation, in this context, has been defined as the act of adjusting to fit into a specific set of environmental conditions through conformity, agreement, and compliance to acclimatize to an environment to personal advantage (Cohen 2011, p. 9).

² See Cohen (2011) for a discussion on how creative adaptation and adaptiveness are related to cognitive style, development of expertise and chance factors.

- (c) intrinsic task motivation (this decides what the person will actually do, as opposed to what he or she is capable of doing; curiosity, deep interest, commitment and a sense of challenge drive motivation)
- (d) Group task characteristics (difficulty of the task, elements of conflict vs. cooperation, presence of solution multiplicity, presence of awareness of a common task, unity of product and organization, formulation of goals, etc.) (West 2002)
- (e) Diversity and knowledge in team members (diversity of knowledge and skills promotes team innovation, creative/informational decision-making, could also pose as a hindrance)
- (f) External demands (threat of uncertainty, inhibited creativity at the very early stages of innovation, severity or challenge in demands, time constraints, competition, etc.) (West 2002).

Groups and organizations are settings where these factors of production come to life. Creativity could be a starting point for innovation; this is a necessary but not a sufficient condition. From a managerial standpoint, innovation is the introduction of technologically new products or processes or the improvement of existing products or processes (Ventura et al. 2011). Some others would define innovation as the successful implementation of new ideas in an organizational setting (Amabile 1996; Adams et al. 2006). Entrepreneurship is inextricably linked to innovation. Innovation, as West (2002) defines it, is the intentional introduction and application within a job, work team, or organization of ideas, processes, products or procedures which are new to that job, work team or organization, and which are designed to benefit the job, work team or organization.

Cognitive styles linked with certain attributes exhibited by an individual during the idea implementation stage may influence potentially disruptive innovations led by a group of individuals whose combined efforts exceed those of individual contributors. In their empirical study testing this claim, Spektor et al. (2011) came to the conclusion that “team performance mediated the effect of the cognitive styles on innovation” (p. 740). According to them, inclusion of creative and conformist team players improved the team’s radical innovation and inclusion of team players who pay more attention to details hindered it. OECD/Eurostat (2005) define innovation in a more comprehensive way as “(. . .) implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practice, workplace organization or external relations.” Innovation, being a multidimensional concept, is inextricably linked with the degree of novelty and creativity, type of process or product innovation, nature of incremental, radical or disruptive innovation, and the technological or non-technological source of innovation. From a legal standpoint, although different types of intellectual property (IP) rights sanction protection for myriad intellectual, creative and artistic creations, the much larger base of ideas and technologies under the open innovation paradigm is gaining momentum. Innovators of technological inventions tend to rely both on IP and non-IP measures to protect

their creations.³ The fact that regimes protecting intellectual property embodied in an innovation predate the psychoanalysis and modern economic analysis of Sigmund Freud and Adam Smith, respectively, lends credibility to this legal instrument used in various forms of innovation.⁴

A number of perspectives from within psychology have tried to address the dynamics that guide creativity and innovation. The German School of *Gestalt* (organized form and a school of thought offering formal conditions to understand psychology of perception) offered us an understanding of how the whole is much more important than its constituent parts- the saying ‘beauty lies in the eye of the beholder’ could be apt here, as the coming together of a whole ‘object’ (as opposed to its constituent parts) in a simpler/congruent way is entirely driven by perceptions. Therefore, creativity consists of producing numerous variants with the aim of gradually arriving at the essential. Important works of art, scientific innovations and architectural products are good examples of Gestaltian ideas. Psychoanalysis, as developed by Freud, demonstrated how the domain of desire is dominated by our unconscious mental life, which, in turn, guides conscious behavior. The layered nature of the conscious as discovered by Freud meant that desire shaped creativity and all acts of creation.

Psychoanalytic ideas gave impetus to understanding ‘the creator’ and the transformation that the work of creation, as well as its creator, went through. As a refined theory of motivation, psychoanalysis helps us grasp the symbolism, instincts and desires that shape the work of creativity, however, Legrenzi (2005) argues that the instinct-based explanations could be circular and may miss something vital. Behaviorism in psychology emerged as a way of tackling the ‘subjectivity’ and providing findings from observable behaviors in controlled situations. Rigorous experimentation helped us understand that creativity also has another dynamic embedded within it, that is, the urge to ‘reproduce creativity intended as the ability of solving problems’, perfecting a model of learning through trial and error. Meanwhile, learning theorists like Pavlov and Skinner offered creativity as the ability to reproduce ordered sequences through trial and error, positive and negative reinforcements, a description very different from that offered by Gestaltian psychologists such as Wertheimer or Kohler or from the discourse of the unconscious as extended by Freud (or the psychological functionalism of economists who convert desires into preferences!).

Creativity is not merely trial and error; it is *reproductive as well as productive*, in both phenomenological and perceptual senses. Creativity also involves certain visualizations, solutions at a glimpse, restructuring and reinterpreting the situation. That the creative act is also restructuring (the mind and the end result/solution) was

³ Non-IP protection measures of innovation, on the other hand, are non-statutory alternative mechanisms which include tacit knowledge (uncodified, internalized knowledge and know-how), learning effect advantages, lead-time (first mover advantage) and secrecy.

⁴ However, for the same reason, one could be skeptical in treating intellectual property as an infallible system for understanding innovation, as well as a robust metric for measuring the outcome of an inventive activity.

the main lesson drawn from the limitations of behavioral discourse in psychology. In the process of defining creativity, in a nutshell, the knowledge psychology offered was that not all forms of learning are through trial and error; that humans and animals alike tend to invent new strategies to reach a goal, particularly when prior learning doesn't come in handy; and thirdly, that there's a thin line dividing creative and non-creative acts and solutions. With the development of organizational/social psychology as a field of its own, psychologists broadly offered two methods for addressing creativity and innovation in 'rethinking' products or creative enterprises: free association (Freudian technique of tapping into the unconscious) is a method of generating new ideas, and brainstorming is meant to enable a unique exchange of ideas aimed at influencing 'single' solution-oriented thoughts. *Free association* is more intra-psychic, being a process that takes place within an individual, and *brainstorming* is an inter-individual process. Both aim to tap into intersubjective elements to come up with unusual imaginative solutions.

To explain the scientific understanding of the inner essence of individual innovation, Shavinina and Seeratan (2003) attempted to answer the question – 'Why do innovative ideas emerge in human minds?' Developmental and cognitive mechanisms, according to them, are the most important for understanding the conception of individual innovation, which the authors dissect into developmental foundation of innovation, its cognitive basis, its intellectual manifestations, its metacognitive manifestations and its extra-cognitive manifestations (p. 31). From a neurophysiological standpoint, according to Vandervert (2003), "innovation is a recursive neurophysiological process that constantly reduces thought to patterns, thus constantly opening new and more efficient design spaces." (p. 27).

Psychology Behind Innovations

It is important to understand the psychological mechanisms that guide innovation. It would be apt to say that 'while not all change leads to innovation, all innovations are about change' (West and Farr 1990, p. 11), and the change then concerns the individuals who inspired a transformation of ideas towards implementation of these ideas in an organization or work context. We know the difference between creativity and innovation by now. Creativity is about generation of new ideas and innovation refers to the practice of these ideas in shaping a product, process or both. Rank et al. (2004) say that one is about idea generation and the other refers to idea implementation. In that sense, creativity is highly novel, though innovation needs to be maneuvered in a way that it is suitable and acceptable in a social context, and therefore, it is an inter-individual social process, while creativity is, thus, more of an intra-individual cognitive process (Andersen and King 1990 cited in Rank et al. 2004).

Psychologists generally allude to a definition of creativity which describes it as a process that generates an idea (or product) and essentially embodies the twin features of newness or novelty and appropriateness or social value

(Csikszentmihalyi 1996; Sawyer 2006; Gruber and Wallace 1999). It is safe to assume that, in an innovative product design, there is a correlation between the typicality of that design and positive reaction to it (Faerber and Carbon (2013). Further, there is a (positive) causal relationship between familiarity, on one hand, and typicality and positive reaction on the other hand. Novelty (one of the essential requirements for getting design patent protection) has long been considered by product design experts to be at one end of the spectrum, with typicality being at the other end.⁵ Building on previous studies,⁶ the experiment conducted by Faerber and Carbon (2013) revealed that “humans lacking a visual familiarity towards innovative designs also dislike them because they need time and, most importantly, elaboration to appreciate them” (p. 318). There are other differences in both concepts that are important to understand. Just as openness to experience as a personality trait enables creativity (Schweizer 2006), introversion enables intuition and judgment and the thinking through of ideas to take place, while a reflective and moderate state of orientedness (as opposed to action-oriented) helps in the generation of ideas in creative thinking.

With regards to innovations, extraversion is more beneficial to people who need to sell these ideas to other stakeholders, along with an action-state orientedness that helps to plunge into action and make change that is very goal-directed. High-arousal negative affect could impinge creativity, but seems to be a productive condition for innovating in response to frustrating deficiencies. However, positive arousal also enables energizing other innovations. West (2002) found that individuals and teams are more likely to innovate if the environment is uncertain and threatening. Higher demands, such as competitiveness between organizations, high project urgency (though conducive to creative thinking), and other demands such as high time pressure and competition within groups, is detrimental (Amabile 1996). Charismatic leadership is conducive to project implementation (Rank et al. 2004). Innovations also vary: there are technological versus administrative innovations (Legrenzi gives the example of development of ‘zipper versus that of ‘Post-its’), evolutionary versus revolutionary innovations, creativity types with internal versus external drivers for engagement, or even specified versus self-discovered problem types (Rank et al. 2004).

Personal initiative is a key factor here; it is about persisting in the face of repeated challenges, and also about proactive behaviors. Initiative as a driver moderates the relationship between innovation and outcomes, thus becoming an important variable to be considered. Research also puts ‘voice behavior’- expression and articulation of innovation to others – as a mediator variable between creativity and innovation. Another area that creativity and innovation researchers point to is understanding the cultural differences in innovation and harmonizing

⁵ Whereas Hekkert et al. (2003) suggest a linear relationship between novelty and typicality which determines positive reaction to the innovative product design, Blijlevens et al. (2012) assumes a non-linear relationship between typicality, per se, and positive reaction.

⁶ Faerber et al. (2010), Leder and Carbon (2005) and Carbon and Schoormans (2012).

cross-cultural challenges that teams and organizations face in a modern world. Uncertainty, power, collectivism, intellectual or emotional autonomy, etc., have different meanings for different cultures. It has been found that intellectual autonomy may be beneficial for creativity cultures which take pride in this value for ‘the desirability of individuals independently pursuing their own ideas and intellectual directions’, and there are also instances when high amounts of intellectual autonomy might impede innovation, especially when disagreement concerning ideas and the impulse to be territorial takes over the act of adopting and building on a selected idea (Schwartz 1999 cited in Rank et al. 2004, p. 524). Impact of leadership and low/high uncertainty avoidance cultures are two other thematics that need to be addressed in the context of cross-cultural differences in innovations.

Choi et al. (2011) have conceptualized relationships between cognition and emotions involving innovation using appraisal theory of emotion and affective events theory. In line with Roseman et al. (1990) and Weiner (1986), they suggest that cognitive appraisal of innovation by an employee leads to emotional reactions, which, in turn, explains employees’ implementation behavior (p. 108). Their work highlights the crucial role of emotional and cognitive processes in operationalizing innovation and in implementation of innovative outputs. Kaufmann (2003) adds fuel to the affect-creativity relationship by indicating that “tasks of creative thinking may be particularly mood sensitive and that the main stream argument that positive mood unconditionally and reliably facilitates creativity is characterized as a case of premature closure” (Kaufmann 2003, p. 131).

Even though creativity and innovation conceptually overlap, the differentiating factor, according to Patterson et al. (2005), is novelty. She explains creativity as being concerned with generating new and original ideas, whereas she defines innovation as something which *also* includes use of these novel and original ideas that results in something new and socially useful. Howells (1995) applied a socio-cognitive approach to the process of technological innovation and presented “technological knowledge as socially distributed cognitive knowledge” (Howells 1995, p. 888). He clarifies each step of the long and complex process (“cognitive ensemble”) of “linked cognitions”, starting from ideation to the final creation of the innovative product. He writes that, “it is the ensemble that makes a project and which can be judged as a ‘good idea’ worthy of a degree of development.” (Howells 1995, p. 891).

Modelling Creativity in Innovation Management

Schweizer (2006) extends a model where creativity is the first step in the novelty generation process. In her model, individual neurocognitive and personality traits guide individual behaviors that, in turn, guide individual motivation, which then informs the behavior of others. More recently, personality theorists have given great thought to creativity and how it shapes behavior and personality (Ventura and Cruz Ventura et al. 2011). Costa and McCrae’s five factor theory of personality

(1992) talks about a high score on ‘openness to experience’ as being a predictor for a creative and healthy personality (Schweizer 2006). The other personality traits included in the big five theory are: conscientiousness, extraversion, agreeableness and neuroticism. ‘Innovation is conceived as a means of changing an organization, either as a response to changes in the external environment or as a pre-emptive action to influence the environment. Hence, innovation is here broadly defined to encompass a range of types, including new product or services, new process technology, new organization structure or administrative systems, or new plans or programmes to organization members’ (Damanpour 1996, p. 1326 cited in Baregheh et al. 2009). It also refers to successful exploitation of new ideas (UK Department of Trade and Industry 1998 in Adams et al. 2006). Apart from good emotions being a facilitator for generation of good ideas (Simonton 1977), a culturally creative outside environment being a facilitator of production of creative thoughts (Simonton 2000), a risk-taking attitude and having the right training and expertise are all crucial for someone to be creative (Simon 1986).

Innovation Diffusion: Identifying Barriers and Processes of Change

Innovations could differ from one another in what could be termed their technical, social and economic characteristics, and these factors affect their diffusion as well. Changing attitudes, clearing information bottlenecks the pre-innovation/new product development stage. The extent and pace of the diffusion process depends on the personality characteristics of the potential adopters, as well as the efficiency with which the network channels can function (Agarwal 1983). One of the obstacles is focalization, which is thought to be a creative thought that pays too much attention to doing something, though in an asymmetric appraisal of information (Legrenzi 2005; West 2002; Rank et al. 2004); the recent national election results in India reflect this bias in processing information: while one party was aggressively rejected, the selection of the prime minister was done without having sufficient understanding. Legrenzi (2005) gives examples of the 3 Bs (bed, bus and bath) as a way to defocalize. Another factor is fixation, which presents a challenge in the ‘openness to experience’ and receiving information without inherent biases. While focalization prevents us from selecting useful and important information, fixation is a block in receiving new information. Fixations are emotional, cognitive, social rigidities, narrowness within us that blurs information and depletes our ability to innovate. Yet another barrier is a cross-fertilization of the two, which Legrenzi (2005) calls quasi-creativity, dealing with scenarios that require restructuring without the need for external problem-solving, but with a definite need for internal problem-solving – dealing with fixations, obstacles and other mental math that complicate the picture. This requires bringing in defocalization, as well as working through one’s fixations.

One of the adhesives that binds creativity to innovation, as a social phenomenon, is empathy. West (2002), Legrenzi (2005), Rank et al. (2004) allude to innovation being diffused creativity that needs cooperation, conflict, group think and, more importantly, empathy that underpins the process of innovating. Empathy is the ability to be in the shoes of someone else, and creativity is also a process of decentralizing or deconstructing an idea or process in the minds of other people. Legrenzi (2005) talks about 3 Ts, technology, talent and tolerance, as the cornerstone of innovation and innovation diffusion. Empathy (tolerance) provokes diffused creativity, and then intuition, skill and resources make innovation possible. ‘Creating the conditions for innovations is equivalent to creating as many variants as possible’ (Legrenzi 2005, p. 55).

Technological innovations are marked by patents and trademarks. In the earlier sections, we discussed how these erase the ‘creator’ and provide a categorization and a symbol to the innovation. While technological innovations can usurp individual creativity, it is very important to keep individual creativity alive in the process of innovation diffusion.⁷ The 3Bs and 3Ts help combat cognitive bottlenecks in creativity and innovation implementation. The finished product of innovation, though an independent product, cannot be cut off from its journey that began with the creator’s idea and continued through the various processes of transformation.

Laws governing different types of intellectual property (such as patents in the case of industrial technological inventions, copyrightable artistic works or trademarks on brand names) require the innovator (creator) to overcome a stipulated threshold of innovativeness (creativity). Fromer (2010), in her investigation into the sources of divergence between patent laws and copyright laws in terms of their respective protectability standards,⁸ finds that the distinctions between the two intellectual property laws essentially relate to psychological findings on creativity. Fromer states that it is important to acknowledge the psychological underpinnings of creativity in analysing intellectual property (Fromer 2010, p. 3).

Given that one of the goals of intellectual property law is to give incentives to the creator of the innovative work, it is important to turn towards studies in psychology that deconstruct the entire process by which creators (scientists or artists) create a piece of work and individual users appreciate it.⁹ Rebecca Tushnet (2009, p. 51) concurs with this view and goes on to say that “psychological and sociological concepts can do more to explain creative impulses than classical economics. As a result, a copyright law that treats creativity as a product of economic incentives can miss the mark and harm what it aims to promote.”

⁷ It must be noted that, in certain legal systems (particularly in the US), the inventor is a legally accepted and recognized person who is believed to have the intellectual dominion over the entire inventive process.

⁸ In the context of granting legal protection through a legal system to the creator of an intellectual property. For instance, to get patent protection for an invention, a law demands that the invention be novel, it must be an inventive step in the field and it must have an industrial applicability.

⁹ See Dreyfuss (1987) for more details.

Although a society may, in general, assimilate a high level of newness of an inventive product which results from scientific creativity, it typically prefers to have only a limited level of current products resulting from artistic creativity. This, according to Fromer, partly explains the difference in protectability standards across patent law and copyright law.¹⁰

Four kinds of knowledge are important in thinking of innovation diffusion: (1). New ideas that emanated from a creative process and contain a new piece of information, as well as having an identified creator. (2). Non-determinism: the creative process is non-deterministic in that it is not ascribable to some mechanical procedural calculation. (3). Constraints: the process is characterized by some constraints and should have developed some obligated actions to address those. (4). Previous elements and experience: the creative process is not created from scratch, but has a history, and the context that drives it and the elements that triggered it need to be in synch (Legrenzi 2005, p. 67). Innovation diffusion remains a multistage process in which presence, kinds and dynamics of markets present the most challenging of barriers. For example, technological innovations can make direct benefits to the rural poor, but its efficacy depends on how well integrated these are with the markets (Berdegue and Escobar 2002). The real test of the innovation lies in working through the challenges associated with the ‘social use’ of it, as understood by the markets (for some suggestions on addressing exclusion, see Zohir 2013).

Some Self-introspective Questions: Poverty or Innovations?

The following questions are a primer for addressing psychosocial quandaries around innovations as a mechanism for change for the rural poor. Posed by a psychologist and an economist, there is indeed some idiosyncrasy to the questions raised. There is much that psychology economics and law can tell us about creativity, deprivation and, most importantly, the need for change.

¹⁰Refer to Raymond Loewy’s MAYA principle – Most Advanced Yet Acceptable. Loewy’s popular design heuristic can be helpful in relating novelty with consumer preferences broadly. “He believed that, the adult public’s taste is not necessarily ready to accept the logical solutions to their requirements if the solution implies too vast a departure from what they have been conditioned into accepting as the norm” (Raymond Loewy Estate’s website).

Where Is Novelty and Innovation in the Lives of the Poor and Why Is It Necessary?

Most times, it is when old solutions do not necessarily work or cease to be relevant that individuals seek novelty. There are other dimensions to seeking this change – the work environment, demands of the environment and external pressures, the competition around successful delivery of a work/project. Novelty, as we have read in previous sections, is about the ‘restructuring’ of ideas and ideas that are to be implemented in ways that are unusual.

Poverty is a reality – an intergenerational and multidimensional one, as we know by now – however, it is also a state of mind (Kumar 2012). Researchers worldwide have talked about nutritional, physical, emotional, and social deprivations emanating out of poverty conditions. Marginality is more multilayered with an even greater number of adversities, and one would wonder if there is any hope left amidst such deprivations for change! Novelty, amidst other needs, could be a driver enabling the marginalized to work their way out of poverty. The focus on change of conditions, practices, and hindrances is also about change in attitudes, openness and the desire to live well – what Maslow would call ‘*self-actualization*’. He would say that each individual is endowed with a potential, and in conditions under which this potential can be nurtured, the individual’s self-worth and capabilities can be actualized. Sen (1999) talks of beings and doings- functionings – as a measure of capabilities. We know that in poverty and marginality, both individual potential and opportunities to realize it are thwarted, so novelty-seeking attitude and fervor is important. Poverty compromises hope and capabilities, however, this is also an intellectual bias that practitioners do not challenge. The public projection of poverty- that all abilities are compromised – also plays a part. This projection by others, as well as the self-defeatist feeling in the marginalized themselves, needs to be changed. So, novelty is needed and is also aspired to by the marginalized as a way towards changing their future.

Nandy (2002) argued that the conceptualization of poverty and who is poor or not is an intellectual process (or defense), as people don’t necessarily always think in those terms. This may not be the same for the experience of marginality in which oppressions and invisibilities are very severe. Economists tend to reduce the poor to statistics (also see Sainath 1996), and discursive stories about how poverty might entail richness of experience and knowledge are seriously undermined. The poor reinvent, rediscover, recreate and re-innovate their limited resources, individual and collective strengths and time. A focus on ‘frugal’ innovations demands a change in the way others perceive the poor and marginalized so that their creativity and innovativeness are recognized. More often than not, we fail to recognize the novelty that is always there. Such innovations (mostly design) are simple, novel and have the capability to provide very affordable goods and services, particularly to the economically weaker sections of society. Radjou et al. (2012) define frugal innovation as the ability to solve technical/business problems – with an attitude of finding quick, creative, less costly, local market solutions in available resources that

can be tested locally and then applied to other markets. Frugal innovations are necessary to develop appropriate, adaptable, affordable and accessible solutions, products and services (Radjou et al. 2012, p. 63; Basu et al. 2013). The real innovations are providing freedom and choices to the poor that institutional innovations can provide (Stirling 2009). The little good provided by education, health and social infrastructures goes a long way. We have several studies that validate this finding (Banerjee and Duflo 2011; von Braun and Gatzweiler 2014).

Do Poverty, Deprivation, and Adversity Mar Capacities That Drive Novelty-Seeking Behavior?

Sheth (1981) talks about people who resist innovations and suggests two factors that underpin their resistance: firstly, the stronger the inclination towards a particular behavior, the greater the resistance to change, and secondly, many possess an inherent uncertainty or experience aversive physical, social or economic reactions (among other perceived risks) towards innovation. In societies where creativity is not recognized, resistance to innovation could be an easy pattern to develop. We have looked at how cultures that engage in uncertainty avoidance might treat creativity and innovations differently. Uncertainty in conditions of poverty is a real challenge. Change and innovations can thrive or be severely impeded.

The sections above present a view in which the poor and the marginalized know that they need change and are capable of creating novelty and innovations. We have also looked at how their abilities get marred by the harsh circumstances of deprivation and dismal opportunities, but it is also the ‘tag’, a perceptual bias among those more privileged that the poor cannot innovate and need help, that is an equally problematic attitude. One of the arguments about redressing poverty emanating from marginality is to infuse a sense of novelty and drive towards change in the rung of the ladder that doesn’t see opportunities, freedoms and choices in the same way. Adversities in the form of challenges or external demands in the context of poverty and marginalization, theoretically speaking, might provide direct insight into what would work better given a set of solutions. However, when these conditions become entrenched, people’s capacities are overwhelmed and all energies are directed towards survival. In such instances, innovations and creativity have to be infused, introduced and harnessed to see the kinds of processes, products and initiatives that are needed take form. One of the issues about which developmental psychology can inform development and poverty studies is the circumstances under which an intervention is worthwhile. We know that the mother is the most important tool for an infant’s survival. The infant waits for his mother eagerly and cries when she is not around; the delay lasting an $a + b + c$ -minute is a learning exercise and bearable, but an $a + b + c + \dots$ to z -minute delay may be unbearable and the infant could be psychically traumatized. Similarly interventions in poverty

and marginality need to be made knowing that, as time elapses, the motivational and need structures change for the worse.

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