

**ENTREPRENEURSHIP THEORY REVISITED: A FRAMEWORK FOR
DESIGN OF ENTREPRENEURIAL STRATEGIES**

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Abstract

Creativity and strategic entrepreneurship have become integral to the managerial landscape significantly influencing managerial thought, corporate strategy and policy. Scholars of differing disciplinary persuasion have enriched this field with diversity of theoretical frameworks and concepts but it has also led to fragmented thinking. As a consequence while entrepreneurship, as a concept, has been integrated with the traditional management literature, it has yet to develop a conceptual framework and the synthetic unity is missing.

Traditional technological trajectories have reached a dead end and radical innovations are necessary to sustain global economic growth. It is only of recent that researchers have become engaged with the emerging reality of technological disruption and need for radical innovations. This paper reviews economic and social policy that has guided development of entrepreneurship thought and adopts an ontological approach to present a dynamic model of entrepreneurial strategies. The model is built around “entrepreneur intending” and strategies evolve in the process of exploration and discovery of opportunities. We argue that entrepreneurial strategies are influenced by entrepreneur’s personal philosophy, intellectual capabilities, procedural rationality, achievement motive and the social context.

INTRODUCTION

Entrepreneurship is a relatively new discipline yet to describe its boundary. Over the decades it has gone through various conceptualizations as, opportunity seeking, risk taking, new venture creation, and more recently it is discovering and creating opportunities. Approached from various disciplinary and ideological perspectives there are constant attempts to redefine boundaries, which has introduced fuzziness in conceptualization (Amit, et al. 1993; Blatt, 1988; Bygrave & Hofer, 1991; Herbert & Link, 1989; Zahra & Dess 2001). Definitions abound but “intention to start a business” (Bird, 1988; Krueger & Brazeal, 1994) remains at the core of most definitions and it is commonly agreed that, (a) entrepreneurs form new ventures (Vesper, 1990), and that entrepreneurship is crucial for economic development since (b) this “dynamic process” of new firm formation creates jobs and distributes wealth (Kirchoff, 1994). Scholars agree that a major limitation of these definitions is that they fail to capture the entrepreneurial process in its entirety (Bull & Willard, 1993; Covin & Slevin, 1991; Hitt, et.al. 2001; Low & MacMillan, 1988; MacMillan & Katz, 1992; Shane & Venkataraman, 2000; Slevin & Covin, 1990; Wortman, 1987). Shane & Venkataraman (2000, p.14) suggest that instead of asking: “What is entrepreneurship?” it may be more fruitful to ask “why, when and how some people and not others discover and exploit opportunities.”

Multiple frameworks enrich our understanding and should be encouraged but as Churchman (1971, p. 110) points out, “logic of induction” requires an agreement among the community of empiricist about a priori framework. When the definitions of “entrepreneur” differ it is difficult to develop a shared conceptualization. During recent years there has been tremendous outpouring of research on entrepreneurial opportunities, how they can be created and exploited (Dew, et al. 2004; Zhou, 2008). Search for opportunity is innate to all living forms as they struggle to survive, select mates and procreate. What differentiates humans from other species is that we have developed highly advanced capabilities not only to discover opportunities but also to develop and imagine opportunities. Therefore, why some people discover opportunities while others create opportunities is not only relevant but highly germane to our enquiry and understanding of entrepreneurship, value creation and economic development.

A major problem in entrepreneurship research is that entrepreneurship theory has attempted to homogenize “entrepreneurs” and empirical findings have been

unable to uncover commonalities to justify this homogenized concept (see, Alvarez & Barney, 2007). The problem is not only that of differentiating entrepreneurs from non-entrepreneurs (Hartman, 1959; Garland, et al., 1984) but differentiating between the different types of entrepreneurs. In this paper we refocus on the entrepreneur as an individual. We analyze entrepreneurial behavior in the context of entrepreneur's abilities, personal philosophy and orientation toward autonomy-interdependence and develop a classification system to better explain how opportunities are discovered, developed and imagined, by whom and why. We believe that there are significant differences between the various types of entrepreneurs which have remained unexplored and research in entrepreneurship as well as public policy will benefit greatly if the entrepreneurial phenomena is disentangled.

Entrepreneurship is a multi-dimensional concept and simplification has only led to obfuscation and confusion. This paper explores the definitions of entrepreneurship, the incongruities and confusion in the entrepreneurship literature and presents a typology implicit in the scholarly work till date (Alvarez & Barney, 2007; Blawatt, 1998). First section presents an introduction to entrepreneurship theory as it has evolved and highlights the critical differences in conceptualization of the entrepreneur. Second section discusses entrepreneurial motives in brief. Third section discusses in detail the concepts that have shaped theory and why some of the assumptions are of questionable validity. We argue that entrepreneurial strategies emerge in course of entrepreneurial action shaped by entrepreneur's intellectual capabilities (skills, knowledge, cognitive and perceptual abilities), personal philosophy, procedural rationality, achievement motive and the social context. In the final section we discuss some of the current issues in corporate innovation in the context of entrepreneurial strategies.

ENTREPRENEURSHIP– THE STORY THUS FAR

Neo-classical economic theory assumes that markets are perfectly competitive, information is easily accessible, knowledge is freely available, and economic agents are rational actors who respond to dis-equilibrating forces to bring it back into equilibrium. However, a clear description of an entrepreneur remains elusive (Baumol, 1993). Definitions abound; he is an economic decision maker who is alert to exchange opportunities with profit potential and is the first to act (Kirzner, 1973), the initiator of an enterprise thus differentiated from an agent (or manager), an arbitrager who takes advantage of the profit opportunities created by information asymmetries

and brings about changes in prices and quantities (Hayek, 1949). Hence, in neoclassical as well as the Austrian economic tradition (represented by economists, such as, Menger, Hayek, Mises and Kirzner), in a dis-equilibrated system entrepreneur is the seeker of imbalances in the economy, alert in identifying profit-making opportunities, acts on these opportunities and as a consequence entrepreneur restores equilibrium to the market and creates order.

Inertia is an inherent quality of physical as well as social and economic systems. Hence the question that has intrigued scholars is what drives entrepreneurs to act? Mises (1996: 290-91) observes that entrepreneurs, “are driven solely by the selfish interest in making profits and in acquiring wealth”, and “the only source from which an entrepreneur’s profit stem is his ability to anticipate better than other people the future demand of consumers”. There are three distinct elements in this conceptualization of entrepreneurial action.

First, entrepreneur’s desire for wealth drives them to search for profitable exchange opportunities. Entrepreneurship theory ascribes entrepreneurial action to profit motive, “material accomplishment” as Weber termed it (Max Weber in Gerth & Mills, 1946) and a significant body of entrepreneurship literature builds on this theme that, “Entrepreneurs operate their business purely with a view to maximizing profit they obtain from a given amount of effort” (Casson, 1982, p. 25). The thesis that the desire for profits motivates entrepreneurs, which in turn drives economic growth, is well entrenched in the capitalist philosophy. If entrepreneur are those who “discover opportunities” the “opportunity” continues to be defined in terms of profit potential (Harper 1999, p. 82; Shane & Venketaraman, 2000, 2001). In fact Singh (2001) makes a pointed reference to this issue, and asks if it is to be assumed that the opportunity was a “feasible, profit seeking, potential venture” in cases where empirical evidence is to the contrary (as may be the case with social entrepreneurs).

Second, there is general agreement that entrepreneurs are a class of people who have highly developed intuitive abilities and are alert to information asymmetries in the external environment. Market uncertainty requires individuals to act based on incomplete information rather than knowledge (Knight, [1921] 1971: 268) and where uncertainty prevails entrepreneurs have an advantage over managers since they are more inclined to “taking judgmental decisions about coordination of resources” (Casson, 1982: 19-20). In the face of competitive threats, “prediction and control are key elements in entrepreneurial success” (Casson, 1982: 124) and entrepreneurial

profit depends on bargaining position and approach to information management. Faced with competitive threats successful entrepreneurs are good at managing the interpersonal contexts for exploiting or commercializing opportunity (Blawatt, 1998; Vesper, 1990).

Third, entrepreneur sets up a new venture (Gibb, 2000 p.2; Knight, 1921; Say, 1964; Timmons, 1994). Entrepreneur's insight and the first-mover advantage can create monopoly rents or entrepreneurial profits; but they disappear when imitators appear on the market. More intense the competition and smaller the window of opportunity less likely that the entrepreneur will capture rents, imitation in such a case can be the preferred strategy. Ventures creation allows entrepreneurs to institutionalize and gain positional advantage. Small business formation is thus deemed to be a measure of the level of entrepreneurial activity in a society (Bygrave, 1993; Kirchoff, 1994; Timmons, 1994), is frequently used as surrogate for entrepreneurship in empirical studies (Busenitz, et al., 2000; Peng & Shekshnia, 2001) and small business owners are classified as entrepreneurs (Chen & Hambrick, 1995; Murphy & Hill, 2008; Randolph, et al., 1991). Reviewing the empirical studies on entrepreneurship, Murphy & Hill (2008) find that small business is very commonly used as a surrogate for entrepreneurship in research literature. In fact small business is explicitly included in the "domain statement" of the Entrepreneurship Division of the Academy of Management.

Scholars attribute many other qualities to entrepreneurs. For example, Casson (1982:124) suggests that "prediction and control are key elements in entrepreneurial success", hence risk taking. To summarize, the conceptualization of an entrepreneur by neo-classical economic theorists is that he, (a) has well developed perceptual and intuitive abilities, or what Spinoza calls "vague" experience, to foresee future, (b) which allows him to make judgmental decisions in an uncertain environment, (c) driven as he is solely by the profit motive, (d) he sets up new ventures, and (e) in the process creates economic value.

Entrepreneur the Innovator:

Economic development in the west was accomplished primarily due to application of science and technology to industrial production. Andrew Carnegie, for example, reduced the cost of making steel rails from close to \$100 a ton in early 1870s to \$12 by late 1890s. Standard Oil brought its average cost of production of a gallon of kerosene from 1.5 cents a gallon in 1882 to 0.54 cents a gallon in 1884 to

0.45 cents a gallon in 1885. The introduction of cigarette-making machine in US reduced the cost of making cigarettes from almost \$1 a thousand to 6 cents a thousand. What do entrepreneurs do that makes them effective as creators of wealth? McClelland's cultural thesis would remain inadequate without a valid answer to this question.

Schumpeter ([1934] 2002) provided an explanation; innovation was the source of economic dynamism and entrepreneur was an innovator. He perturbs the market by utilizing his knowledge, skills and cognitive abilities (human capital) to create a new productive order (p. 60). Entrepreneur (a) carries out new combinations or "enterprise", (p. 74), (b) contributes "will" and "action" (p. 132), (c) is differentiated from investors and is never a risk bearer (p. 137), and (d) does not invest in exploration but applies existing technologies and systems to make new combinations leading to profit opportunities. And he performs these activities independent of his financial or managerial position in the organization. Entrepreneurial profit (pp. 128 – 38) is not monopoly rent but is due to the "value addition" in the production system; surplus over costs including the risk adjusted returns for capital employed.

To summarize, we discussed two distinct conceptualizations of an entrepreneur. For Knight, Kirzner and many others, an entrepreneur discovers opportunities in information asymmetries and market imperfections, and the prospect of financial gain is what motivates the entrepreneur to act. He is primarily an arbitrageur who employs creativity to make transactions happen, which involve risks but they are measurable, as insurance companies routinely do. Schumpeter's entrepreneur is an innovator who is motivated to act by the challenge involved in using given means to develop new ends (Harper, 1999, p.3). Opportunities are not discovered but created in the process of exploration, a purposive activity but characterized by uncertainty.

Behavioral Science Tradition:

From the economic point of view entrepreneurship is a theoretical construct to explain economic dynamism. McClelland (1961) argued that the logical-rational explanations of entrepreneurship proposed by economists were inadequate. It was necessary to understand the nature of the entrepreneur - what made an individual start a new venture - and psychological and sociological methods grounded in empiricism were better suited for the purpose. Over the decades there has been an exponential growth in empirical research in entrepreneurship and confusion still prevails.

While empirical studies have enriched the discipline, attempts to discover, traits, personality characteristics, intentions and motivations of founders of large and small firms, as compared to managers, have not been successful and we are left with an incomplete agenda as far as definition of an entrepreneur is concerned. Studies, for example, suggest that the founders of successful businesses differ from managers in their personality characteristics (Hornaday, 1971; Kao, 1997; Vesper, 1990) but there is no conclusive evidence of any unique personality characteristic (Crant, 1996; Gartner, 1988; Robinson et. al. 1991). Considering that for every successful founder of an enterprise there are many more who fail, if one paid great deal of attention to findings from empirical research, one could easily conclude that, “some individuals are simply born with a proclivity towards entrepreneurship” (Vesper 1990, p.58).

A large number of entrepreneurship scholars share the opinion that creativity is an innate human condition (Blawatt, 1998; Kao, 1997) and entrepreneurship education and training can be designed to develop innovative capabilities and entrepreneurship. Bird (1988) argued that entrepreneurial action is “planned behavior” wherein individuals review their personal history, personality and abilities and then formulate ideas for action which get translated into new ventures. Entrepreneurship education, development and training programs have proliferated and most are built around this thesis that if individuals are motivated to start new ventures they are likely to become entrepreneurs. Proponents contend that this thesis is supported by empirical research which suggests direct correlation between intention to start a venture and setting up of a venture (Crant, 1996; Katz & Gartner, 1988; Krueger, 1993; Krueger & Brazeal, 1994).

The idea that entrepreneurial behavior can be planned has led to significant support for entrepreneurship and small business education, and for good reasons. First, in most countries small business is the major employer. In his seminal work, Birch (1987) found that small and not large firms were critical for job creation, as majority of new jobs were created by small firms, often independent and young firms with 20 or less employees. Second, small firms have produced a significant share of inventions (Acs, 1984; Kirchoff & Acs, 2000; Kirchoff & Phillips, 1989). Small firm clusters have also been found to be very innovative as flexible specialization allows them to compete with the Fordist mass production system (Piore & Sabel, 1984).

However, it is important to remember that not many small businesses are innovative or successful. In developed economies between 50% to 80% new ventures fail (Mitchell, 2004); and many of those that survive operate as marginal businesses, in decentralized, low value, low wage industries and services as providers of products and services to large firms (Harrison, 1994). Discovering an opportunity, which is central to entrepreneurship, is beset with ontological uncertainty, planning can facilitate the process but the outcome continues to be uncertain. On the other hand, imitators can plan and set up a small business without being innovative. Thus the terms small business and entrepreneurship are not synonymous, as Drucker (1985) notes, “starting McDonald’s was entrepreneurial but opening a deli is not.” Acs & Audretsch (1992) maintain that, “the assumption that all small ventures are entrepreneurial is misplaced” and Blatt (1988, p.29) observes that, “not every small business is entrepreneurial nor every entrepreneur a small business.”

REFLECTING ON NATURE OF ENTREPRENEURS AND INNOVATION

In recent years the boundaries between entrepreneurship and innovation literature have become fuzzy and this convergence is reflected in the growth of research output devoted to entrepreneurial management. Discovery is an emergent phenomenon (Lane & Maxfield, 2005; McKelvey, 2004; Weick, 1979) and the ontological uncertainty that surrounds it demands a better understanding of what drives rational individuals to pursue novelty when the returns are uncertain. This is particularly interesting because exploration precedes exploitation and when entrepreneurs set up new businesses to exploit opportunities, in a competitive world, success is dependent on their ability to make rational choices. While the two activities, i.e., exploration and exploitation, are closely intertwined, maximizing financial gains requires finding a right balance. A theory of entrepreneurship is incomplete without a valid explanation of how entrepreneurs resolve the inherent conflicts between the two.

Entrepreneur and the Profit Motive:

An entrepreneur, as against a manager, is an autonomous agent who acts to further his personal interest, which may be contrary to needs of the business. Not all entrepreneurs are wedded to the idea of profit as the ultimate purpose of their enterprise (Bird, 1988, 1992; Crant, 1996; Krueger & Brazeal, 1994, McClelland, 1961). In contrast, a manager as an agent is legally and morally bound to protect shareholder interest, which is to maximize shareholder returns. The difference

between an entrepreneur, a manager and the founder of small business thus lie in their intentions or motivations to act.

Philosophers distinguish between properties which belong to an object of apprehension as existing in itself and independent of its being apprehended which they call “first intention”, while those properties which belong to an object dependent on its being apprehended, they called “second intentions” (Deely, 1994: 90-95; Silos, 1998: 76-82). The purpose or first intention of an owner/manager of a business is “to make profits” just as that of a physician is “to heal” and it exists independent of its being apprehended and is thus mind-independent. The same holds true for an entrepreneur who chooses to set up a new venture, the first intention is “to make profits”, which exists in the very act of setting up of a firm, and is independent of its being revealed. That profit is the motive of a business and is an objective reality.

Then there is the intention of the subject who enacts the act; it is the reason behind the choice of the act - why a person chooses to be a doctor or a judge or an entrepreneur. What motivates the subject of apprehension (an entrepreneur or a business/manager) the “second intention”, exists only on being apprehended. This “second intention”, is a mind-dependent relation, it exists as a thought relationship of the subject, apprehended subjectively and not revealed to the external observer. Case studies and qualitative research reveals that successful entrepreneurs are driven by a variety of motives, such as, obsession with goal achievement (Zimmerer, 1996: 6) and commitment to new concepts or product ideas (Frohman, 1999), and this obsession is so intense that they become fanatics (Quinn, 1985). Therefore, while the entrepreneur, the manager and the owner/manager of a small business share the “first intention” or the profit-motive, in common; what differentiates entrepreneur from others is his “second intention”. When first intention and second intention cohere an entrepreneur can function effectively in a large firm, but when the two diverge new ventures are created to achieve autonomy.

DISCOVERING OPPORTUNITY: FROM EXPLORATION TO EXPLOITATION

Why do some and not all individuals discover opportunities? Since exploration is a precursor to discovery we may reframe the question to ask; what motivates some individuals to explore opportunities?

Scholars contend that research on entrepreneurship suffers from methodological deficiencies (McKelvey, 2004; Zutshi, 2008), research has mostly

focused on efficient and final causality to the neglect of other causes. Exploration is a self-driven search undertaken by individuals consciously involved in it (Bingham et al., 2007). Complexity and uncertainty impose limitations on our understanding of reality. Heisenberg's principle of uncertainty captures the nature of indeterminacy that applies at sub-atomic levels and Bohr's principle of "complementarity" - that an electron can be treated as a particle or a wave depending on the context - confirms the problems of complexity inherent in the material world. Godel's incompleteness theorem sums it up - any consistent system of axioms beyond a basic of complexity yields statements that can neither be proved nor disproved with those axioms. Hence, to develop a deeper and textured understanding of innovation and order creation one has to move beyond causal, deterministic models (McKelvey, 2004).

What is as more important is that entrepreneurship theory has not paid adequate attention to consciousness and subjectivity, essential aspects of our reality. As Searle (1992, p.19) observes, "ontologically, the claim that reality is objective is neurobiologically speaking, simply false". Learning, evolutionary theorists recognize, is an ontological process; as individuals act new reality unfolds and when intense learning takes place new patterns emerge (Bedan & Humphrey, 2007). In contrast to managers, who act in pursuit of goals, entrepreneurs are active learners and as if by intuition discover opportunities invisible to others. How entrepreneurs manage ontological uncertainties endemic in exploration is a task better accomplished if theory is developed from the perspective of the "entrepreneur intending" rather than from the perspective of an entrepreneur as an "object known". Simon (1977: 326-327) argues that one should be able to construct a normative theory of discovery (for an in-depth discussion on enquiring systems also see, Churchman, 1971).

If discovery is an ontological, generative process and an emergent phenomenon exploration is teleological. It is subject to, (a) final causality, (b) material causality, and (c) to formal causality. Material causality or dependence on intellectual capital (skills, knowledge, cognitive and perceptive abilities), is intrinsic to the entrepreneur and sets the limits on what an entrepreneur can and cannot discover. Intellectual ability is more than possession of information, knowledge or skill, it encompasses the human capability to acquire and apply knowledge hence creativity is at its core.

Formal causality can be intrinsic or extrinsic. Deely (1994, pp. 162-82) suggests that the form that an artifact takes and its logic is the ideal or exemplary

causality, i.e., when an artist creates a painting as an expression of something within the artist, even though it may be non-representational, there exists an exemplar a school of art defined by the community of artists which signifies it. Then there is formal causality which is extrinsic but specificative. The formal extrinsic causality of this kind is present when an entrepreneur captures the sense of others, develops an idea of what is right and wrong to establish rules for personal behavior, i.e., develops a *procedural rationality*.

Entrepreneur's *personal philosophy* provides the normative framework for action as it guides exploration which lead to opportunities. Depending on one's *intellectual capabilities* (skills, knowledge, perceptive and cognitive abilities), personal philosophy and motive to achieve opportunities are discovered in market imperfections (Casson, 1982; Kirzner, 1979), innovations (Schumpeter, 2002); or inventions (Shackle, 1982). The decision to set up a new venture to exploit opportunities is, of course, influenced by the socio-economic and political conditions and entrepreneur's ability to operate in a competitive arena. We now discuss the process model, which is presented in Figure 1, in detail.

Personal Philosophy

In contrast to a scientist who is concerned with *what is*, entrepreneur's search is directed by consciousness or normative values as he is concerned with "how things *ought to be*", (Simon, 1985, p. 7). William James (1970: 9) points out that each one of us has a "philosophy of life" that directs our actions. Exploration is integral to the development of personal intelligence, "The development of the internal aspects of a person. The core capacity at work here is access to one's own feeling life – one's range of affects or emotions: the capacity instantly to effect discriminations among these feelings and, eventually, to label them, to enmesh them in symbolic codes, to draw upon them as means of understanding and guiding one's behavior" (Gardner, 1985, p. 239). Philosophers from antiquity to modern day agree that search for happiness drives desires. Happiness, as Isaiah Berlin (1998) points out, is so porous a concept that it is amenable to multiple interpretations. What is common to all these interpretations is that, contrary to the nature of activities in the physical world which lead to increase in entropy or disorder (second law of thermodynamics) pursuit of happiness is expected to deliver a state of peacefulness and is thus order creating.

Why do entrepreneurs explore and what guides exploration, are questions that are intricately involved. First, exploration is a mind-dependent activity (for discussion

on personal intelligence see; Gardner, 1985: 237-276). Neuro-biologists contend that frontal lobes constitute the meeting place where the sensory information (including perception) and the neural networks from limbic system integrate and retrospective information and prospective information processed over duration of time is principally responsible for development of the sense of self (Funahashi in Ishikawa, McGough & Saketa, 1996; Ingvar as quoted in Eccles, 1989). Bilateral lesions in the prefrontal cortex result in the “loss of future” syndrome characterized by indifference, lack of ambition, loss of foresight (Eccles 1989, p.230). Even in individuals whose other intelligences (cognitive and perceptive) are unimpaired, injury to this area produces indifference, listlessness, loss of motivation and the sense of purpose is lost (Blumer & Benson, 1975).

Second, normative values and beliefs establish rules and priorities, guide action and learning. An imaginative mind deals with concepts and there is strong neurobiological evidence in support of the conceptual or categorical thinking (Brown, 1997; Smith, 1997). When we perceive a situation we not only break it apart but we recombine it, compress it and hold multiple aspects of a situation in mind simultaneously (Bohm, 1964; Goldstein, 1948; Kris, 1952; Slobodkin, 1992). Brown (1997, p.48) refers to “micro temporal cladistic” or categorization based on shared derivation. Neuroscience has developed to a stage where we have some understanding of the mechanics of the creative process and it is possible to enhance an entrepreneur’s creative abilities. Based on autopoietic systems (Kampis, 1992; Vaerela, 1988) and using a genetic algorithms or PCL (perception-cognitive loop) approach (Goertzel, 1997) researchers in artificial intelligence have developed creative problem solving algorithm (Calvin, 1990) to create new emergent patterns which are robustly self-producing. Designers of creative machines find that, while feature recognition processes are necessary to drive the problem-solver, it needs a higher order network or consciousness to group disparate features into coherent whole, or what Goertzel (1997, p.188) refers to as ‘coherentization’.

Third, Rousseau observes that man is born free but everywhere he is in chains, confined by rules imposed by society. Liberate man to pursue wealth and he will discover happiness. Personal philosophy also defines an individual’s relationship with the external world. To the liberal philosophers, freedom or the absence of interference is essential to happiness, and “the only freedom worth having is the right to pursue self interest in our own way” (Mill, 1991, p.137). Freed from interference men would

be spontaneous, creative and will strive to achieve financial success and as economic opportunities are discovered economic growth and development will follow. This is also Adam Smith's vision of a society where concern with private interests alone can lead to self-regulating society of perfect liberty. Is desire for wealth an end in itself or a means to an end? There is a struggle between subjective-self and the external world as it impinges on their self and in the process entrepreneurs interpret their reality and define the sphere of actions open to them (see; Popper, 1986; Searle, 1992).

Materialism - the Philosophy:

There is a general assumption in economic theory that entrepreneurs pursue activities with the primary purpose of material gains. Entrepreneurs are viewed as self-directed seekers of imbalances in economy who have an uncanny ability to identify asymmetries and structural holes and opportunities are discovered as they use their social and political networks to gain positional advantages and access to resources. Social context (Figure 1) plays a significant role at the exploration stage of discovery, as culture legitimizes behavior, "people behave in a way we find reinforcing" (Skinner, 1972: 41). However, in light of our discussion on intentionality, McClelland's (1961, p. 47) conclusion, derived from the work of Parsons (1951) and Weber (1947), that some cultures are better at economic development because of the importance they attach to material achievements and accumulation of wealth has to be questioned.

Culture plays a far more important role in facilitating "exploitation". Some cultures are favorably disposed to trade and economic transactions; the Arab pastoralists living between two great agrarian civilizations would legitimize conquests and exploitation giving rise to trader entrepreneurs. Lal (2000) reviews factor endowments, culture and politics in ancient civilizations and refutes Weber's thesis, that protestant reformation was the source of economic development in Europe (also see, Tawney, 1926). He contends that strong institutional systems develop trust, necessary condition for exploitation of opportunities, and attributes Europe's economic development to the growth and expanse of the Catholic Church and order and systems created by Pope Gregory VII.

Profits are necessary for survival and growth of a business but profitability is not directly related to investments in exploration. The agrarian societies in India and China developed a craft culture and promoted a world-view which embraced interdependence and community (see also, McNeill, 1979; Silos, 1998). Chinese

approach to enterprise creation and economic development continues to be rooted in its past mandarin traditions rather than materialism (Boisot & Child, 1996); and the rise of IT industry in South India is populated predominantly by Brahmin entrepreneurs and is attributed to their values and attitude toward education and learning as opposed to materialism (Taeube, 2004).

The Pragmatic View:

Creative artists often face a trade-off between time spent making art and that spent generating income (Caves, 2000: 29). In this balancing act between achieving profitability vs. satisfying personal ambitions, entrepreneurs have to make difficult choices between opportunity creation and opportunity exploitation. There is sufficient evidence to suggest that for many entrepreneurs creating new forms or newness often overrides profits; best technologies do not always win.

Pierce (see, Wiener, 1958), presents a *pragmatic view* of action, arguing that individuals act to remove doubts. Our “sense of self” is derived from our beliefs and when beliefs are questioned, as rational beings, we act in a way that would eliminate any feeling of self-reproach in future. To Pierce cognition requires empirical verification thus, “The irritation of doubt is the only immediate motive for the struggle to attain belief. It is certainly best for us that our beliefs should be such as may truly guide our actions so as to satisfy our desires; and this reflection will make us reject any belief which does not seem to have been so formed as to insure this result” (Wiener, 1958:100). Beliefs are absolute truths, including the belief we hold today, even though it may turn into disbelief the next day.

Innovation occurs when external world impinges on our sense of self to raise doubts. From the “pragmatic” view an entrepreneur is a problem solver; doubt creates the need for action and is the cause for innovation (e.g., Shepherd et al., 2007). The entrepreneur as an innovator acts when challenged by the external conditions, colleagues, competitors, clients, suppliers, regulators, etc. Personal satisfaction is derived in the process of creation and achievement of the objective rather than from the material rewards.

The Idealism:

Sarasvathy (2001) presents opportunity creation as an effectuation process, wherein the entrepreneur chooses among alternative effects that can be produced with a given set of means. This means-ends conceptualization of opportunity creation leaves the questions - how is the choice made, are there any rules and who develops

the rules if there are any – unanswered, and is close to Schumpeter’s position on innovation (Harper, 1999, p.3). Kant observes that reason works when constrained by a set of rules but when freed from rules an individual can imagine and discover in the process. Hence, we have a competing view of scientific discovery, that it has no logic (Popper, 1959).

There may be no logic to discovery but in a purposive system there is a concept and a set of rules governing action, and for an idealist the concept is the starting point. And this concept, Hegel (1949) proposed, is interpretive as mind experiences objects subjectively and perceptions are shaped by an inner force in order to produce transcendental unity. Transcendental relationships, as Deely (1994: 251) explains, occur when a thing is related to another thing because of it possesses some characteristic which unites, while ontological relations there is a direct relation. Thus the concept of race, the color of the skin unites people even though they may have no known affinity. In any work of art the creative artist begins with a concept. For example, introducing Proust (1925: viii), Krutch has this to say, “(he) knows with uncommon exactness what it was he was about; he has a purpose in everything.... (the action occupies) a carefully proportioned and predetermined place in a structure.”

The creative mind, best described by Spinoza’s fourth type of enquirer (Churchman, 1971: 28) has a design; self-doubt leads to action and inventions (radical innovations) emerge in the process of doing, acting and becoming (see, Shackle, 1982). This is supported by neuroscientists who claim that self-doubt arises because reality is partly a product of imagination or constructed future. Confronted by perceptual reality and energized by ones ego mind makes a leap of faith from reason to unreason (Frohman, 1999; also see, Zhou, 2008) leading to discovery.

Intellectual Capabilities at the Core:

Discovering opportunities involves a complex process of integrating the subjective with the objective knowledge to make a new reality out of abstract forms (Bohm, 1964, 1988). Opportunities come in different forms, they can be discovered, created or imagined, and as Popper (1986) points out, imagining future requires renouncing the past, “killing theories” or accepted ways of thinking. Hence creativity is at the core. Creativity is a mind dependent activity (Dowling, 1998), and dependent as it is on intelligence, it is multidimensional (Gardner, 1985). Acts are judged to be creative, “when they produce something that is novel and is thought to be interesting or to have social value”, (Kuhn, 1970: 5). It is an unending process and in the words

of Alfred Whitehead (1929: 31), “the more we study the nature of time, the more we shall comprehend that duration means invention, the creation of forms, the continuous elaboration of the absolute new.”

To achieve proficiency in any economic activity a person is required to possess a defined set of skills, knowledge and intellectual abilities. Learning, crucial to the process of discovery, requires prior knowledge (Shane, 2000), a mind-set which is open to knowledge (McGarth and McMillan, 2000) and capacity to absorb knowledge (Cohen & Levinthal, 1990). Hence education, training and experience are important to entrepreneurial development as they contribute to the development of cognitive and perceptual capabilities necessary for a creative mind. Since arbitrage, innovation and inventions are intrinsically different types of activities one would expect successful entrepreneurs to be differentiated by their intellectual abilities. For example, pattern recognition and identification of structural holes is critical for trade and arbitrage while the futuristic mind-set requires an imaginative mind.

Intelligence is partly heritable (Nicolaou et al., 2008) hence not all entrepreneurs can be highly innovative and creative. Neuroscience is an emerging field, but it confirms that, while neural architecture changes as we grow and develop, brain is already wired at birth influenced as it is by genetics and the neuro-developmental processes (Danahoe, 1997). We are not born with a clean slate or Locke’s ‘tabula rasa’, Linguists (Chomsky, 1957) suggests that our facility with languages can be explained only if we accept that some fundamental principles of language are embedded in our brain. However, as Nobel Laureate, Gerald Edelman (1991) points out the feedback loop of the brain to the “higher” cognitive regions change the neural architecture thus creating new categories of thought.

Procedural Rationality and the Autonomous Self:

Entrepreneurs interpret reality through a prism or a normative framework, which Simon (1981: 34) argues is transformed into procedural rationality. Mill (1910: 154) points out that the question, “should a person be free to be a pimp or keep a gambling house could be argued either way” as the answer is subject to individual beliefs. A profit maximizing entrepreneur can accommodate a criminal entrepreneur since, “racketeering...involves the same skills as any other form of intermediation” (Casson, 1982: 352).

In Judeo-Christian tradition individualism is equated with self-indulgence, and morality is discipline imposed as guilt, e.g., the protestant ethics (Bausch, 2008).

There is a growing concern that, “a syndrome of selfishness, built on a series of half-truths, has taken hold of our corporations and our societies, as well as our minds. This calculus of glorified self-interest and the fabrications upon which it is based must be challenged” (Mintzberg et al., 2002: 67). Baumol (1993, p. 1) asserts, “The entrepreneur often makes no productive contribution at all, and in some cases plays a destructive role, engaging in what Veblen describes as “systematic sabotage” of production. This does not happen fortuitously, but occurs when the structure of payoff in an economy is such as to make unproductive activities such as rent seeking (and worse) more profitable than activities that are productive”. It is obvious that certain economic activities do not create value for society. Reich (2007) contends that the growing economic problem in US has its genesis in corporate response to stakeholder’s unreasonable expectations of high wages and high dividends. Entrepreneurial action has to be directed, the question is who sets rules. Should morality be imposed as many would advocate (Mitchell, 2002: 187; 2004).

Self Directed:

The normative position of liberal philosophy is that freedom, or the absence of interference, is essential to happiness. In the economic context freed from interference profit-motive will drive men to be spontaneous and creative, which will ensure economic growth and development; hence allow entrepreneurs to be self-directed. Mill (1991), cognizant of the fact that unrestrained freedom can lead to social chaos, assumes that self-interest can provide synthetic unity and create order. If rules are necessary to tame the spirit and create order, Mill (1991) offers a simple set of rules, the consequentialist theory and the harm principle- allow people freedom to act and curb only those actions that harm others.

In the realm of economics value sharing is an existentialist problem. Adam Smith recognized this problem and had this to say about manufacturers and merchants of his time, “(they are) an order of men whose interest is never exactly the same with that of the public, who generally have an interest to deceive and even to oppress the public, and who accordingly have, upon many occasions, both deceived and oppressed it” (Smith, 1776: 267). He cautions that there are moral hazards in a market economy and self-centered behavior can increase social welfare, only as long as the entrepreneur did not violate the “laws of justice” (see also, Silos, 1998). Democracy and robust institutional systems regulate behavior and promote order creation.

Transparency in institutional systems creates institutional trust which advantages self-centered entrepreneurs as it reduces transaction costs and enhances efficiency.

Other-Directed Self:

When values are de-centered and replaced with bureaucratic rules it has disadvantages - it hampers creativity and flexibility. The alternative is to utilize the social process of learning and adaptation and develop complex belief systems to promote social cohesion. Lock argued that when perceptions are communicated and shared what evolves is shared meaning or an isomorphic agreement which has social legitimacy. Communities are thus differentiated from organizations; communities are organic entities with collective memories, and when these memories are articulated, codified and institutionalized they effectively guide social and economic exchange. Hebarman's "communicative action" and Durkheim's "collective conscience" are articulation of this need for an individualized self to integrate with the community (Silos, 1998).

There is evidence to suggest that the altruistic or the "other-centered" behavior is part of our evolutionary heritage. Primatologists, evolutionary biologists and sociobiologists now contend that the sense of 'collective being' or empathy is encoded in our genetic material. This is reflected in oriental social traditions, Confucian ethics (Boisot and Child, 1996) and Hindu "Dharma" where a culture of shame rather than guilt creates the sense of unity.

The Transcendental Self:

While the positivists reject self-doubt as a metaphysical conjecture, major humanistic psychologists acknowledge the need for "self actualization." Consciousness and subjectivity are essential to an inventive mind. Berlin (1998) presents a dualistic concept of freedom; negative freedom is the desire to free oneself of external constraints while positive freedom is the fulfillment of the desire to, "conceive goals and policies of my own and realizing them. This is at least part of what I mean when I say I am rational, and that it is my reason that distinguishes me as a human being..." It involves setting up one's own rules and changing them as reality unfolds. Positive freedom is liberation from unbridled passion or slavery to nature, to elevate oneself to "ideal" or "autonomous self", or "the transcendental self" while negative freedom is freedom from coercion.

How does a transcendental entrepreneur ensure that he is following the right path? Lane and Mansfield (2005) suggest that generative relationships and scaffolding

structures enable agents to cope with ontological uncertainty endemic in innovation process. In his critique of Hegelian design Churchman (1971: 176-178) points out that in the absence of an exemplar the generative relationships can lead to associative or 'hermetic' drift (Deely 1994), particularly when one is dealing with creation of ideas or technologies, as against artifacts. Drift is arrested and order created by intuition of the 'executive' or 'mind' as in Spinoza's fourth type of enquiring system when an axiom is intuitively accepted as being true. An executive is completely free (Churchman, 1971: 27) when, "The executive in this case has a valid theory to explain why knowledge occurs." To an ignorant gardener a bone in the rubbish heap may have no meaning, but on a paleontologist it has a perceptual effect as it becomes actualized to represent a dinosaur. The paleontologist, who is able to classify a bone as belonging to a brontosaurus rather than pterodactyl, is the interpretant and the dinosaur is present in the fossil bone as its extrinsic specifier (Deely 1994: 172-74). The objectivity is attained due to cognition as in the case of the paleontologist, the interpretant, is in an objective triadic relationship with the bone and the dinosaur that it represents. But whether he is on the right path is hard to say. To an existentialist (Sartre, 1957) this conflict between freedom to act and responsibility is the "anguish of man".

Achievement Motive: The Impetus to Action

McClelland's (1961) achievement motive theory and Rotter's (1966) idea of internal locus of control were attempts at developing a theory of action and have received significant attention from academics and researchers (Beugelsdijk, 2007; Johnson, 1990). McClelland's work is faulted on many grounds including its methodology (Nafziger, 1986) but his achievement motive theory is of great significance. Achievement motive theory attempts a conceptual integration of a variety of intellectual, psychological and social factors, which promote entrepreneurial behavior.

McClelland (1961, p. 207) resorted to cultural contexts to explain the origin of this need for achievement. However, research suggests that in most societies, including US, high achievers, particularly, among upper classes do not necessarily prefer business occupations and are more likely to choose high prestige occupations, such as, law, medicine and scientific research (McClelland, 1961: 246-256). What is, however, significant about those with high achievement motive scores is their intensity of involvement in what they pursue. Hence one can argue that achievement

motive is a measure of “intensity” of the motives which drive entrepreneurs to exploration and discovery.

Entrepreneurial Strategies

We defined four variables that influence an entrepreneur’s approach to exploration (Figure 1), namely, (a) personal philosophy, (b) intellectual capabilities, (c) procedural rationality and (d) achievement motive. An entrepreneur’s intentions or strategies are defined by these variables and they in turn are subject to external influences, such as, education, training, social situation and social conditioning. What emerges is a typology of entrepreneurs and entrepreneurial strategies which are presented in Table 1. Let us briefly discuss the distinguishing characteristics of the entrepreneurs and their strategies.

Transactional Entrepreneurs

To transactional entrepreneurs it is results that matter. Acts are conditioned not by the nature of acts (means) but by the outcome of acts (ends), they are thus constrained not by any absolute ethical standards but by what is expedient. It is in the context of “self-directed” behavior of the entrepreneur promoting competition and efficiency that economic philosophers confront a paradox. The assumption that an open society and democratic order would lead to diffusion of knowledge, reduce entry barriers and enhance competition thus providing impetus to innovation and increase efficiency does not hold. To the contrary when competition is intense, imitation reduces rent seeking opportunities. As consumers and competitors appropriate value entrepreneur are unlikely to invest in exploration and innovation and efficiency suffers in the long term. Transactional strategy is to achieve market dominance and create entry barriers to capture rents. And it is for this reason that mandatory regulations and external controls become necessary to promote public good.

Arbitrage involves an incremental process of information accumulation hence “prediction and control are key elements in entrepreneurial success” (Casson, 1982, p. 124). They have well developed perceptive capabilities, recognize patterns, actively search for information, are open to new external inputs, capture and retain large chunks of data, and have quick recall. Since the entrepreneurial advantage is based on information asymmetry profit opportunities are short-lived. Entrepreneurial profit is dependent on bargaining position and approach to information management. Creating information asymmetries by managing the markets and the political systems is an approach which ensures continued opportunities for arbitrage, and value is

appropriated by creating entry barriers. They also have the ability to make value assessments based on weak signals (hence risk taking) and the capability to manage the interpersonal contexts for exploiting or commercializing the opportunity (Blawatt, 1998; Vesper, 1990).

Transformational Entrepreneur

Transformational entrepreneur is less tenacious in his beliefs and open to experiences. Interaction with the external world leads to self doubt and problems surface. Discovering opportunities - developing new concepts, new technologies, new products and new process - requires distinctly difference mental processes and world-view. Creative problem solving is a complex process – it not only requires ability to recognize information asymmetries but it also requires great abilities in parallel data processing and mental imaging. Innovators, unlike arbitragers, work in groups they cooperate hence product and process innovation is a team effort,

Strategic focus is on innovating for value creation. They are problem-solvers, are more likely to form cohesive networks. Social interactions provide access to complementary capabilities while intimacy promotes trust, allows information sharing and acquisition of knowledge. They deal not only with explicit but also with tacit knowledge, which ensures a degree of protection from limitability. But in competitive environments where imitation is rampant, opportunity costs of knowledge sharing are high and specialized nature of knowledge makes absorbing knowledge difficult. Firms are likely to hold on to capabilities with “tenacity” as they battle to establish technological dominance (Shapiro & Varian, 1999). Hence intense social interactions, intimacy and co-operation, for opportunity creation, is more likely to be within rather than between firms.

Begruender Entrepreneurs

We use the term “begruender entrepreneur” for “idea-havers” who are differentiated from innovators (in the literature the term radical innovation is used synonymously with inventors) as they work at the frontiers and pursue novelty. They live in a world where reality and imagination co-exist and cannot be differentiated, i.e., there is conscious time-binding. They have the ability to accept contradictory truths multiple truths and as Edelman (1991) points out only a polymorphous mind can interpret a polymorphous world. Begruender entrepreneurs are idealists, there are no exemplars as exploration is undertaken to create new forms (doing, acting, becoming).

They are unlikely to be motivated to work on problems unless they impinge on their 'self' (Smith, 1997, p.32).

Begründer entrepreneurs are the discoverers of 'concepts' or "technologies". But the approach to discovering concepts is very different from discovering physical phenomena. One is information driven and external, the other is knowledge driven and internal, and the personal philosophy is different. They possess a capability for abstract imagining, which influences their attitudes and their personality. They are highly competitive but open and trusting and as a consequence they are also often afflicted with various psychopathologies (Smith 1997, p. 29).

PROMOTING ENTREPRENEURIAL STRATEGIES FOR CORPORATE INNOVATION

In the past inventions have often emerged from small rather than large firms (Cooper, 1993; Kirchoff, 1994; Rothwell & Zegveld, 1982; Vesper, 1983). A disproportionately high share of really revolutionary new industrial products and processes, such as, lighting (Brush), the incandescent lamp (Edison) and alternating current (Westinghouse) were developed by outsiders and newcomers (Scherer, 1965). In the pharmaceuticals industry about one-half of the major innovations during 1935-62 were based on discoveries made outside the established laboratories (Mansfield, 1975). Van Deusen (1954) provides numerous examples, of people unconnected to a field coming up with radical invention and concludes that, "truly significant innovations generally are the work of outsiders, individuals far enough removed from the industry to have a fresh viewpoint on its problems (p. 133)."

For decades it appeared that innovation is best managed in large firms (Abernathy and Utterback, 1976; Wheelwright and Clark, 1995) and focus shifted to corporate entrepreneurship as the strategy for innovation and growth. Whether large firms are better at innovation than small firms has been researched with inconclusive results. Inventors have not received adequate attention of management scholars as they have been dismissed as being idiosyncratic, not driven by profit motive hence not entrepreneurial (e.g., Schumpeter, 2002; Roberts, 1968, 1988). The impact of disruptive technologies has changed the situation. Firms with dominant market share recognize that in a globally competitive environment investment in exploration and technology dominance has to be back on the burner. There is growing interest in establishing the relationship between exploration, entrepreneurship and innovation.

Schumpeter's entrepreneur did not invest in exploration since knowledge creation in his period was undertaken primarily in public domain. There were reasons why large firms were able to invest in exploration. To a large extent as power gravitated from shareholders to corporate management (Eisenhardt, 1989; Galbraith, 1987) it enhanced management's autonomy (Hoskisson et.al., 1999), particularly in large firms with dispersed shareholding. Managerial capitalism followed and gave impetus to investments in science and technology with consequent increase in innovation activity and overall economic welfare (Arrow, 1962). Growth of monopolies and oligopolies, due to their size and market power were better positioned to capture value and entrepreneurial rents (Whitley, 2002). Size permitted investment in research and development for innovation (Block & MacMillan, 1993; Burgelman, 1984; Guth & Ginsberg, 1990; Pinchot, 1985) and firms were able to attract entrepreneurial talent to develop a continuous stream of opportunities for growth (Wu, 1989).

In the present global context human and financial resource required to maintain presence at the frontiers of technology has grown tremendously. We now also know that new product development does not correlate with R&D investments (Hara, 2003; Mansfield, 1975; Rothwell, 1994; OECD, 1996) or firm size (Freeman, 1983); instead it is dependent on a variety of other factors (Cooper, 1973, p.22; Freeman, 1983) including, heterogeneity of capabilities (Barney, 1986, 91, 94; Penrose 1959; Selznick, 1957; Wernerfelt, 1984).

It is further argued that in highly uncertain and technologically disruptive environments access to distributed knowledge (Sampson, 2007) is important and research alliances are useful for the purpose. Hence co-operation is fundamentally more effective than competition (see, Simon, 1981; Axelrod & Cohen, 2000).

Competitive vs. Cooperation

The arguments in support of co-operation has roots in economic and social theories, such as, theory of rational choice, transaction cost economics (Williamson, 1975), population ecology (Aldrich, 1979; Aldrich & Auster, 1986) and resource dependency (Cyert & March 1992; Pfeffer, 1982). There is empirical research in support of the argument that cooperation allows firms to leverage complementary assets (Delmas, 1999; Powell, 1990; Teece, 1986, 1989), encourages informal know-how trading (see, Cassi & Zirulia, 2007; Von Hippel 1987), develops dynamic capabilities (Inkpen, 2000; Gulati, 1998; Rycroft & Kash, 1994), and enhances firm's

innovative capabilities (Grant, 1996; Hagedoom, 1993; Mowery & Teece, 1993; Murtha et al., 2001; Rosenkopf & Almeida, 2003; Sampson, 2007).

Research alliances have grown but the strategic intent in most of these alliances is to learn and compete. Any cooperative endeavor demands that the parties involved trust each other. While research on trust has proliferated confusion prevails (Bigley & Pierce, 1998; Shapiro, 1987). The agreed view is that the inability to develop trust and mutual forbearance is the major impediment to partner commitment and knowledge sharing (e.g., Das & Teng, 1998; Dhanraj & Beamish, 2004; Gulati, 1995; Klein, 1996; McCutchen, et al. 2008). Trust implies placing oneself in a position of vulnerability (Mishra, 1996) but when firms enter into a relationship with competitive intent (see, Doz, 1996; Hamel, 1991; Inkpen, 2000) trust is “calculational” rather than empathetic. Hence alliances fail as partners cheat, shirk, distort information to appropriate partner’s critical resources (Anderson & Jap, 2005). Competition, as Selznick (1996) points out, has had pernicious effect on corporate rationality and institutionalization.

Networks and Organizational Strategies:

An argument that has found great favor in recent years is that intense social interactions will accelerate mutations and new forms will evolve (Nelson & Winter, 1982); larger the network, greater is the variety of resources, the greater is the possibility of new forms being created.

When institutional and legal systems are robust it is easier for entrepreneurs to establish co-operative relationships and networks based on institutional trust. It is particularly so for transactional entrepreneurs since in such cases the first and the second intentions cohere and contracts cemented by the legal system can be effective mechanism for ensuring compliance. The challenge lies in structuring the alliances and developing flexible organizational architecture, boundary spanning teams and inter and intra-organizational networks for learning and to capture returns (Galbraith, 1982, Wheelwright & Clark, 1995; Kleinbaum & Tushman, 2007).

Can co-operative behavior exist in societies where legal systems are not well developed? It is found that strong institutional systems are not sufficient safeguards to promote co-operation (*Fukuyama, 1995*). Sacrificing self interest may be irrational, yet as Williamson (1993: 481) admits non-calculational trust can exist as in, “transactions for which the optimal level of conscious metering is zero”, hence non-calculational trust has drawn significant attention. Social theorists maintain that an

entrepreneur's "orientation" toward co-operation is an innate behavior driven by social dependence (Granovetter, 1985). Social trust is established through membership in social networks based on caste and ethnic ties or family. Building on social dependency view, new institutionalists theorize that other-centered behavior is an exercise in legitimation (DiMaggio & Powell, 1991). As Selznick (1996) suggests interaction between organization and culture is mediated by socially constructed mind or "structural cognition" and to that end entrepreneurs indulge in institutional mimicry or mimesis. In the face of ontological uncertainties firms resort to formal or exemplary causality and model themselves after organizations perceived to be more legitimate or successful (DiMaggio and Powell, 1991: 70). Aldrich and Fiol (1994: 648) describe two forms of legitimation that entrepreneurs seek, (a) "cognitive legitimacy", which refers to gaining acceptance of an idea, and (b) "socio-political legitimacy" which ensures that the activity is in tune with the cultural norms and is of value to the political system.

When profit maximization is the primary goal of the entrepreneur, networks are useful not only for discovering opportunities but also to gain socio-political legitimacy necessary for exploiting opportunity. Transactional entrepreneurs develop co-operative relationships and seek membership in networks based on calculational trust, for relationships are developed to serve a definite purpose.

The other option is democracy (Mintzberg, et al., 2002; Selznick, 1995) which would help develop a community based institutional and regulatory system. There is a growing literature advocating democratization and open systems as an effective mechanism for promoting innovation at the firm level (Snow, von Hippel). But the central issue in the design of the enquiring system is; who directs the exploration process? That organizational democracy is sufficient or necessary condition for innovation and entrepreneurship is debatable. In his seminal lecture Berlin (1998), observes that liberty is a comparatively modern doctrine, "the notion of individual rights was absent from the legal conceptions of the Romans and Greeks; this seems to hold equally of the Jewish, Chinese and all other ancient civilizations that have since come to light." These civilizations created not only great wealth but also produced knowledge. The connection between liberty and economic development is tenuous, as creative industry can and has flourished in despotic regimes. Democracy on the contrary, can lead to populism, unleash the tyranny of the majority and stifle creativity and innovation.

Implications and Conclusions

Critics of globalization contend that in the absence of global institutions for enforcing order, firms shy away from wealth creation (exploration). Global trade has increased exploitation, and we now inherit its attendant social costs (Cohen 1998; Reich, 1991; Reich 2007).

Knowledge has unique economic characteristics which differentiates it from the physical goods its value dissipates quickly, value created is difficult to capture but the returns to scale are infinite. Hence returns from investment in knowledge is highly uncertain and should ideally be undertaken in public domain. Increase protection of intellectual property and privatization of knowledge has opened up possibilities for entrepreneurs to imagine opportunities. Economic opportunities often follow new inventions. Intellectual property is a valuable resource (Kim & Mauborgue, 1999; OECD, 1996; for detail discussion on value of knowledge see Boisot, 1995). When financial and institutional support is available, inventor initiated small firms have been greatly successful in creating and exploiting opportunities.

Development of trust is thus dependent on the social context within which the entrepreneur operates. Literature on social network theory discusses the advantages and disadvantages of divergent-convergent contexts, but there are significant differences regarding the property of networks and their impact on innovation. Coleman (1988) and others argue that discovering opportunities requires sharing of tacit knowledge, best achieved when there is trust which develops through intimacy in dense and interconnected networks. Further, as entrepreneurs share information there is convergence of ideas and cognitive legitimacy is established, which promotes cliquishness and creates potential for innovation (e.g., Coleman, 1988; Walker et al. 1997; Uzzi and Spiro 2005). Szulanski (1996) found that when density of relationship and intimacy of interactions between the members in an organization is low it impedes the innovation process. Therefore democratization, porous boundaries and open organizations facilitate innovation process (e.g., Chesbrough, 2007; Gulati, 1999; Miles, et al., 2005; von Hippel, 2005, 2007).

Burt (1992) refutes the suggestion that cohesive networks aid learning process (Mowery et al., 1996), proposing that complementary specialization mitigates the need for learning from each other. He argues that opportunities are discovered in asymmetries that develop when entrepreneurs occupy structural holes or positions between agents not connected to each other. And the entrepreneur joins the network

for he is, “an individual who profits from the disunion of others” (Burt, 1992: 31). Cassi & Zirulia (2008: 79) used simulation to model firm behavior in networks by assessing the opportunity costs involved in joining networks. They found that; “For a low level of the opportunity cost, networks with the lowest average distance maximize efficiency; for an intermediate level of the opportunity cost, networks with relatively low of average distance and relatively high level of average cliquishness (i.e. small worlds) maximize efficiency; for a high level of the opportunity cost, networks with the highest average distance maximize efficiency.”

For entrepreneurs working at the frontiers of knowledge, where uncertainty prevails, variety, intimacy and intensity of interactions are essential to imagining opportunities. But co-operation entails loss of independence or autonomy (Pfeffer & Salancik, 1978); it threatens the sense of self as it places the entrepreneur in a position of emotional vulnerability. Based on a study of the innovation processes in Japanese pharmaceutical industry Hara (2003: 185) distinguishes paradigmatic (radical) from incremental innovation and discovers that in the case of radical innovation, “the concept of a new drug has no exemplar. Most of the people inside and outside the organization are unfamiliar with the concept and wary of it...” For this reason, entrepreneurs at the frontiers of technology have tremendous problems obtaining legitimate support, and he postulates that, “The collectiveness of Japanese organization probably contributes to integration of resources in the organization, but may enhance the strength of the organizational resistance (to radical innovation)” (p.194).

Critics of globalization contend that in the absence of global institutions for enforcing order, firms shy away from wealth creation (exploration). Global trade has increased exploitation, and we now inherit its attendant social costs (Cohen 1998; Reich, 1991; Reich 2008,). Biological systems as against physical systems are order creating and this property is the property of knowledge that they possess, whether coded genetically or acquired

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Table 1: Differentiating Entrepreneurial Strategies

	Characteristics	Transactional Entrepreneur	Transformational Entrepreneur	Begrunder Entrepreneur
1	Motivating Force	Wealth accumulation/ Efficiency	Self-doubt, externally induced/ Problem Solving / Effectiveness	Self-Doubt, internally induced / Order Creation
2	Intellectual Capabilities	Skills / Perceptual abilities	Cognitive abilities	Intuition/ Imagination
3	Rule Making	Minimize constraints / negative freedom	Democratic	Self discipline / positive freedom
4	Rules	Contextual	Negotiated	Emergent
5	Opportunity	Arbitrage	Innovation	Invention
6	Social Orientation: Sense of Others	Self-Directed Competitive	Other-Directed Collaborative	Transcendental Competitive but Empathetic
7	Personal Philosophy: Sense of Self	Materialism	Pragmatic	Idealism
8	Strategy	Market Dominance	Innovations	Technology Dominance