

Perceptions – Looking at the World through Entrepreneurial Lenses

ABSTRACT

In this chapter we consider how the perceptions of entrepreneurs might differ from those of non-entrepreneurs and how this might lead individuals to act entrepreneurially when others would not. Perceptions are reality for nascent entrepreneurs who must make business decisions in an uncertain world, based on what they see, or what they think they see. We use the analogy of 'entrepreneurial lenses' and discuss clear lenses (self-efficacy), rose-colored lenses (cognitive biases), blue lenses (simplistic decision rules), yellow lenses (preference for monetary gains), purple lenses (preference for intrinsic benefits), and telescopic lenses (overestimation of profits and underestimation of risks). We also consider the frames that hold the lenses (framing effects).

INTRODUCTION

It is said that entrepreneurs look at the world through different eyes, that they see the future better than others do, see opportunities that others do not see, do not see risks that others do see, and so on. But maybe it is not their eyes that make entrepreneurs different but the lenses through which they look. Lenses can change one's view of the world, compensating for deficiencies in our visual acuity or helping us see things in a different way. Lenses bring objects into focus, make objects seem closer or further away, reduce or increase the amount of light admitted to the eyes, change the color of things, and so on. The analogy of looking through lenses can help us understand the thinking and the behavior of entrepreneurs, so in this chapter we will examine the lenses that entrepreneurs (metaphorically) look through as they form the intention to behave entrepreneurially and as they exploit entrepreneurial opportunities.

Perceptions are important at various points in the entrepreneurial process. At the beginning of this process, individuals form the intention to become an entrepreneur and enter

the 'exploration phase' (McMullen & Shepherd, 2006; Choi, Levesque & Shepherd, 2008). The formation of entrepreneurial intentions might precede, or follow, the discovery of the specific entrepreneurial opportunity to be exploited. For some, the formation of the general intention to become an entrepreneur will trigger the search for a desirable entrepreneurial opportunity, while for others the discovery of a specific and desirable entrepreneurial opportunity might trigger the formation of entrepreneurial intentions. Bhave (1994) calls the former case 'internally stimulated opportunity recognition' and the latter case 'externally stimulated opportunity recognition'. In the former case the individual enters the exploration phase wanting to be an entrepreneur and may explore many entrepreneurial opportunities before settling on one to 'exploit' (McMullen & Shepherd, 2006) when a sufficiently attractive opportunity presents itself. The alternative case, where the individual discovers the opportunity first and subsequently decides to become an entrepreneur, is exemplified by the scientist who previously had no intention of becoming an entrepreneur, preferring instead to do research and publish papers, but who discovers a new technology and subsequently gains intellectual property protection for that technology. This individual might then be 'pushed' (Smilor & Feeser, 1991) by members of his/her social network, and perhaps also by investors, to commercialize the proprietary technology, and consequently forms entrepreneurial intentions and enters the exploration phase of the entrepreneurial process.

In the exploration phase, the individual is a 'nascent entrepreneur' meaning that they are actively planning to start their own business (Shaver, Carter, Gartner & Reynolds, 2001). In this phase they conduct viability screening on one or more new venture opportunities they perceive. The viability screening process involves gathering information about the resources needed to exploit the specific new venture opportunity, considering whether or not these

resources can be assembled to produce and sell the new venture's product or service, and investigating whether there is a sufficient market for that product or service at a price level that will allow profits.

At some point in the exploration phase of the entrepreneurial process, nascent entrepreneurs will form the belief that they have collected enough information and subsequently make the decision to launch the new venture. At this point they enter the 'exploitation' phase (Choi et al 2008) and the nascent entrepreneur becomes an actual entrepreneur and realizes his/her entrepreneurial intentions. In the exploitation phase, the new venture may survive, prosper, and grow, or it may survive as a small-scale business without having any desire for further growth, or it may become bankrupt and not survive. The new venture's subsequent fortunes will depend on the competitive forces that it experiences following its entry into the market, the entrepreneur's (managerial) ability to cope with those competitive forces and the potential vagaries of customer demand, and the entrepreneur's preferences for a growth or a no-growth (perhaps 'lifestyle') business (Barringer & Ireland, 2006:13-14).

The entrepreneurial process takes place in a highly uncertain business environment. When introducing new products, new services, new business processes and/or new 'business models' (Morris, Schindehutte, & Allen, 2006) it is not possible to foresee accurately the outcomes of decisions that are made. Vagaries on both the cost and demand sides could deliver financial outcomes that range from fortune to ruin. In order to act decisively in a highly uncertain environment, entrepreneurs must act on what they see, or more correctly, on what they *think* they see, or what they think they *will see* as the scenario rolls out with the passage of time. So, the entrepreneur in a highly-uncertain business environment must act upon their

perception of reality (Krueger, 1993; Krueger & Brazeal, 1994; Forlani & Mullins, 2000). What entrepreneurs think they see might be an illusion, of course, and their new venture might consequently fail. Alternatively what they think they see, or think they will see, might prove to be an accurate vision of the future. Thus the entrepreneur's perception of their entrepreneurial opportunity is critical to their subsequent exploration and exploitation decisions and to their later success or failure.

The process of entrepreneurship involves the nexus of a specific individual and a specific opportunity (Shane and Venkataraman, 2000) and we note that entrepreneurs not only tend to perceive opportunities differently, they tend to perceive themselves differently. They tend to see themselves as more competent than non-entrepreneurs see themselves. That is, they tend to have higher self-efficacy (Ajzen, 1991; Krueger & Dickson, 1994). Self efficacy refers to a person's confidence that he/she can accomplish a specific task or related set of tasks. Entrepreneurial self efficacy relates to the tasks specific to the exploration and exploitation phases of the entrepreneurial process (Chen, Greene & Crick, 1998). This confidence may be based on their possession of superior knowledge about the entrepreneurial opportunity, due to their superior knowledge of market needs and/or the technological potential for serving those needs (Gifford, 2003; Gimeno, Folta, Cooper & Woo, 1997; Shane & Venkataraman, 2000). But in addition, entrepreneurs tend to exhibit *overconfidence* in their abilities (Palich & Bagby, 1995). Overconfidence is a common human foible, of course, but entrepreneurs tend to be more overconfident than others (Busenitz & Barney, 1997; Simon, Houghton & Aquino, 2000). And of course, entrepreneurs may be different from non-entrepreneurs in their preferences for monetary outcomes and non-monetary outcomes (Douglas & Shepherd, 2000).

Accordingly, in this chapter we will examine a series of metaphorical lenses through which entrepreneurs perceive reality during the entrepreneurial process. Each of these lenses refer to perceptual differences between entrepreneurs and non-entrepreneurs that cause entrepreneurs to seek less information about potential new business opportunities and thereby causes them to proceed further and with greater speed along the entrepreneurial pathway. These individual differences thus serve to propel the entrepreneurial individual toward an entrepreneurial venture that may succeed, or alternatively, may end in failure.

The Clear Lens Effect – Differences in Human Capital, including Knowledge

Do you wear glasses or contact lenses? In any case, you will appreciate that my glasses would most likely be inappropriate for your eyes – they would almost certainly blur your perception of the things around you, because visual acuity differs across human beings. If your eyes have less than perfect natural correction for refraction, you can have a set of lenses made up by an optometrist to a particular prescription that is exactly matched to your eyes so that you will see more clearly. Typically these will be clear lenses that correct for your inability to focus on items at different distances.

How does the clear lens analogy relate to entrepreneurs? The clear lens of the entrepreneur refers to their ability to see and understand 'things entrepreneurial' better than non-entrepreneurs do. That is, the clear lens of the entrepreneur relate to their prior knowledge and experience of entrepreneurial situations and behaviors. Becker (1964) introduced the term human capital to encompass one's knowledge and abilities, and we focus here on those aspects of human capital that are specific to entrepreneurship. Some people were born to entrepreneurial parents and learned entrepreneurial attitudes, abilities and behaviors during

their childhood. Others learned to be more entrepreneurial at school or university, and/or learned from experience in the workplace or at play. In effect entrepreneurial individuals have honed their own set of clear lenses that allow them to see entrepreneurial opportunities more clearly. The knowledge acquired is specific to entrepreneurship and does not necessarily cause the person to be better at maths or to play a musical instrument well, for example, which may be the forte of others.

Many studies have attempted to relate individual human capital to nascent entrepreneurship, entrepreneurial intentions, entrepreneurial behaviour and entrepreneurial performance (e.g. Aldrich, Renzulli & Langton 1998; Boden & Nucci, 2001; Evans & Leighton 1989; See Shane, 2003, pp. 61-95 for a comprehensive overview). Gifford (1993) distinguished entrepreneurial ability (the ability to recognize a new profit opportunity and to acquire resources to exploit it) from managerial ability (the ability to maintain the profitability of current operations), and argues that possession of these skills in individuals will determine their choice of career as an entrepreneur, intrapreneur, or salaried employee. Gifford (2003) demonstrated that what might seem to be risk aversion or preference might instead be the result of different personal investments in knowledge acquisition. Shepherd, Douglas & Shanley (2000) argue that differences in new venture risk perceived by individuals might be due to individual differences between them in terms of their ignorance as producers and managers. In similar vein, Shane & Venkataraman (2000) argue that entrepreneurs may have domain-specific knowledge that allows them to conclude that a particular new venture is not as risky *for them* as it would be for others. They argue that entrepreneurs who possess proprietary knowledge about new venture opportunities appear (to those who lack the information) to be willing to accept greater risk. Baron (2000) argues that entrepreneurs' lower perceptions of risk

relates to their lesser ability to engage in counterfactual thinking. Davidsson & Honig (2003) and Aldrich, Renzulli & Langton (1998) argue that individuals have differing capabilities due to their differing 'general' human capital (such as age, gender, years of education and work experience) and 'specific' human capital (such as relevant education and industry experience, relatives who are self-employed, social networks, and so on). More recently, Janney & Dess (2006) argue that entrepreneurs may possess specialized knowledge and idiosyncratic resources such that risks perceived by others do not apply to that entrepreneur because he/she has superior human capital.

Greater knowledge and experience in any context affects one's perception of risk in that context. Those with more entrepreneurial knowledge and greater entrepreneurial experience might regard a specific new venture opportunity as relatively low risk, while those with little knowledge and relevant experience might regard the same opportunity as relatively high risk. Entrepreneurial risk can be largely traced to incomplete information (or ignorance) in the minds of consumers, producers, and managers (Shepherd et al 2000). Shane & Venkataraman (2000) argue that entrepreneurs who possess proprietary knowledge about new venture opportunities appear (to those who lack the information) to be willing to accept greater risk. Janney & Dess (2006) argue that the entrepreneur may possess specialized knowledge and idiosyncratic resources so that risks perceived by others do not apply to this entrepreneur, who has superior human capital resources in that regard. Krueger & Dickson (1994) found that self-efficacy and entrepreneurial risk taking were positively related, indicating that entrepreneurs' confidence in their knowledge and abilities leads them to undertake more risky ventures.

The impact of human capital differences on the perception of risk can be illustrated by two people wanting to jump across a muddy ditch. One is tall and athletic, and the other is

shorter and less athletic. The first person was the long-jump champion at high school, while the second was the chess champion. For the first person, jumping across the ditch seems to involve little or no risk, but there is a high probability that the second person will land in the ditch and get muddy and possibly hurt as well. The physical ability and experience of the first person (including task-specific knowledge about how to run up and launch oneself into a long jump) causes that person to have relatively high self-efficacy concerning the task, while the ability, experience and knowledge of the second person is likely to underlie relatively low self-efficacy for this task and therefore cause a relatively high perception of risk for that person.

Heterogeneity of *social capital* may also mean that the risk perceived by one nascent entrepreneur is less than that perceived by another nascent entrepreneur. Social capital includes the benefits derived from social networks including extended family, community or organizational groups and individuals (Coleman, 1990; Aldrich et al, 1998). Social capital is expected to enhance the entrepreneur's human capital by enhancing the individual's ability to identify opportunities, gain access to resources, and so on (Birley, 1985; Greene and Brown, 1997). Davidsson and Honig (2003) found that while human capital variables (years of schooling, taking business classes, and work experience) had little or no impact on moving nascent entrepreneurs forward, social capital variables (having parents in business, being encouraged by friends, and having close friends or neighbors who are entrepreneurs), had substantial impact on progressing them from nascent entrepreneurship to launch. Having access to 'better' social networks would be expected to provide the nascent entrepreneur with risk-reducing information at little or no cost and thus reduce the perceived risk of the proposed new venture.

Krueger (1993), Krueger & Brazeal (1994) and Krueger & Carsrud (1993) argue that the two main factors underlying the formation of entrepreneurial intentions are the perceived feasibility and the perceived desirability of the entrepreneurial opportunity. McMullen & Shepherd (2006) argue that 'knowledge' and 'motivation' are the prime drivers of the subsequent decision to exploit the opportunity. In effect, McMullen & Shepherd posit knowledge as a proxy for perceived feasibility and willingness to bear risk as a proxy for perceived desirability in the nascent entrepreneur's decision to exploit the new venture opportunity. Several other authors argue that the nascent entrepreneur's possession of prior and proprietary knowledge and their consequent 'alertness' underlies the formation of the intention to become an entrepreneur (Kirzner, 1973, 1979; Busenitz, 1996; Gaglio & Katz, 2001; Gifford, 2003).

The fact that a person has superior human and social capital will become apparent to that individual through interpersonal comparisons and formal or informal contests of various types, such that the person will form an opinion that their own capability to undertake and successfully complete specific tasks is superior to others. Accordingly, entrepreneurs tend to exhibit greater self-efficacy for entrepreneurial tasks based on their superior human and social capital that is relevant for the entrepreneurial tasks envisioned. Accordingly, they view the world through 'clear lenses' that more clearly show to them the outcomes associated with decision making under uncertainty in the context of specific entrepreneurial opportunities. By looking through these clear lenses the entrepreneur is able to form entrepreneurial intentions in the first place, and subsequently takes the decision to exploit and thereby move ahead with the entrepreneurial process, when others would still be seeking information.

The Rose Lens Effect – Overconfidence

Humans are notoriously overconfident of their ability to accomplish specific tasks (Simon, Houghton & Aquino, 1999). Overconfidence in one's abilities has been likened to wearing 'rose-colored lenses' (Palich & Bagby, 1995, p.443) whereby everything seems 'rosy' – i.e. everything is bathed in a soft pink light that makes things look very attractive and/or easier to accomplish. Simon et al (1999) distinguish between overconfidence, defined as the failure to know the limits of one's knowledge (Russo & Shoemaker, 1992) and illusion of control, this being the overestimation of one's ability to control future events in uncertain situations (Langer, 1975). Boyd & Vozikis (1994) argued that illusion of control will positively impact the entrepreneur's formation of entrepreneurial intention. In this chapter we are essentially rolling these two cognitive biases together and using the term 'overconfidence' to mean the overestimation of one's knowledge and abilities in relation to the successful completion of a specific task. Thus the tall athletic person might still fall into the ditch if he miscalculates the width of the ditch, or overestimates his jumping ability, or a headwind begins to blow during his run-up, or if his jumping point collapses as he begins to jump, and so on. The latter two issues are beyond the jumper's knowledge or control, of course, and this parallels the entrepreneur's launch of a new venture in an uncertain business environment.

Overconfidence is a cognitive bias that seems to afflict entrepreneurs more so than other business managers. Cooper, Woo & Dunkelberg (1988) found that entrepreneurs exhibit higher self-efficacy than other managers, and consequently they think that they are better equipped to deal with risks than are non-entrepreneurs. Cooper, Foita & Woo (1995) argued that higher levels of self-confidence were related to lower levels of information search activity, and therefore greater risk bearing, due to the entrepreneur's ignorance of the risks being borne.

They argued that “the entrepreneur is ‘blinded’ to the need for more information due to his/her overconfidence” (1995, p.110). Palich & Bagby (1995) found that entrepreneurs exhibit overconfidence and tend to downplay the risk they perceive, expecting to triumph over any adverse situations that might arise. They found that entrepreneurs consistently viewed new venture opportunities more positively than others (see also Chen, Greene & Crick, 1998; and Forbes, 2005). Busenitz & Barney (1997) found that while all managers exhibit overconfidence, entrepreneurs exhibit greater overconfidence than do employed managers. Thus, although the actual risk might be perceived accurately, individuals who exaggerate their ability to cope with the perceived risk are more likely to take that risk.

So, in terms of the entrepreneurial process, the individual is more likely to form entrepreneurial intentions if they are overconfident about their ability to successfully accomplish entrepreneurial tasks, other things being equal. Subsequently, and as a nascent entrepreneur, the individual is more likely to want to hurry through the exploration phase (and undertake less information search activity) due to his/her overconfidence that the venture is a viable business opportunity. Consequently, nascent entrepreneurs will tend to take the exploitation decision sooner than they would if they were not so overconfident, and as they progress in the exploitation phase we should expect their overconfidence to similarly cause lesser levels of information search activity resulting in ‘hasty’ and probably sub-optimal decision making. These rose lenses metaphorically worn by entrepreneurial individuals cause them to perceive the probable outcomes of their decisions more optimistically and to thus induce them to enter and persist in the entrepreneurial process, whereas individuals with a realistic view of their own capabilities would either not enter the process, or would stall within

the process, or would not take 'life-saving' gambles within the process, and thus would not become practising entrepreneurs, other things being equal.

The Blue Lens Effect – The use of simplistic decision heuristics

The 'blue lens effect' is about sunglasses that cut down the light (and glare) that hits your retinas and thereby allows you to see more clearly the things that you are most interested in (like the road ahead, when driving, for example). Blue lenses cut down the red and green light that is admitted to the photoreceptors in the eyes, and thus reduces the amount of fine detail that would be visible when the red, green and blue light is combined. (Think of a color (RGB) projector, where the red, green and blue beams combine to make many other colors and thus convey the finer detail to the viewer). The benefit to us of wearing blue lenses is that they cut down eye strain and allow us to concentrate on objects that would have been difficult to see because they are surrounded by too much (multicoloured) light. Thus, the decision to wear blue-lenses is effectively the decision to sacrifice visibility of the finer details of the overall scene in favor of having better visibility of some items which seem to be more important at the time.

The analogy for nascent entrepreneurs is that the red and green light sacrificed is like detailed information that the entrepreneur chooses not to have. The entrepreneur is more concerned with charging ahead along a particular road and feels that he/she does not need to have more information about 'minor details' that seem unimportant to progress along that road. In the context of the entrepreneurial process, these 'unimportant' things might be detailed information about customer preferences, data on the new product's reliability, predictions regarding competitor responses to the entrepreneur's initiatives, and so on.

Fiet (1996) notes that entrepreneurs can undertake information search activity to reduce the uncertainty and risks of a new venture. Brockhaus (1980) and Brockhaus & Horwitz (1986) found that entrepreneurs in general are no more likely than non-entrepreneurs to be risk averse or risk preferring. Busenitz & Barney (1997) found that entrepreneurs tend to make decisions with less information than other managers. But even if they continue to receive information, individuals are subject to cognitive biases that arise due to the utilization of three main simplified decision rules (or heuristics) (Shaver & Scott, 1991:33). First, they tend to 'anchor' their estimates on past outcomes and tend to not revise their estimates on the basis of new information, and thus they act upon inaccurate assumptions (Tversky & Kahneman, 1974; Busenitz, 1999). Second, they tend to base their decision making upon the most-recently-acquired or most-easily-recalled information. This is known as the 'availability' heuristic, but of course such data may not be representative of the range of outcomes that should be expected. Third, the 'representative heuristic' is the tendency to base decisions on a relatively small number of observations (Tversky & Kahneman, 1974). This apparent belief in the 'law of small numbers' (Busenitz, 1999) whereby the decision maker places heavy reliance on a few observations (rather than a representative sample) introduces risk because the limited sample might not be representative of the range of probable outcomes. Thus, relying on a small sample causes the entrepreneur to underestimate risk (Shaver & Scott, 1991; Busenitz, 1999).

Shepherd et al (2000) argue that the mortality risk of a new venture depends on the novelty of its product, its production technology, and the managerial requirements of the new venture. They explain the liability of newness (Stinchcombe 1965) in terms of the ignorance (i.e. missing relevant information) in the minds of customers, producers and managers. This is consistent with the human capital approach - the mortality risk existing in any new venture will

depend on which particular entrepreneur or entrepreneurial team is managing the new venture opportunity (as well as the market conditions and technological possibilities). Following the 'ignorance' view, Choi et al (2008) examine the 'stopping point' at which entrepreneurs stop *exploring* the new venture opportunity (i.e. truncate information gathering) and start *exploiting* the new business opportunity (i.e. launch the new venture). In effect, the decision to exploit is taken at that point in the viability screening process when the entrepreneur decides that sufficient information has been captured, that the new venture appears to be worth the gamble, and thus the intention to start the new business culminates in a new venture start-up. Thus Choi et al (2008) focus attention on the decision to exploit and argue that this decision will be made sooner for the entrepreneur for whom risk tolerance is greater, consumer, producer and management novelty is lower, knowledge management orientation is explicit rather than tacit, and where potential rivals (followers) can more easily obtain the same information. In concert with the individual-opportunity nexus approach (Shane, 2003) Choi et al (2008) argue that the decision to exploit occurs in a person-situation context, depending on both the personal characteristics of the entrepreneur and situational characteristics such as novelty and ease of access of followers to important information.

But each one of the lenses discussed in this chapter operates to truncate information search activity. The blue-lens effect specifically relates to the avoidance of information search due to the decision-maker's preference to use simplified decision heuristics. Heuristics are simple 'rules of thumb' that can be implemented quickly and inexpensively and which might generally produce an acceptable result. But since they eschew further information search, they may not incorporate relevant information that would improve the decision made, and are thus more likely to result in suboptimal decisions being made. That is, heuristics allow quick

decisions but these are not likely to be ‘rational’ in the sense of maximizing expected value (Tversky & Kahneman, 1974). Busenitz & Barney (1997) and Busenitz (1999) found that entrepreneurs practice ‘bounded rationality’, using simplified decision heuristics significantly more than do other managers. By using heuristics, entrepreneurs take greater risks than they think they are taking because the heuristic used actually introduces risk to the decision making process by ignoring relevant information.

The Yellow Lens Effect – Differences in Wealth Seeking

The yellow lens effect is named in recollection of the author’s experience while skiing at Whistler Mountain in Canada many years ago. While riding the chair lift up the mountain, my ski goggles fell off my head and disappeared down into a ravine. This was surely unfortunate, since I had just made the confident statement that I could beat my skiing partner to the bottom of the mountain, which provoked him to bet me \$10 that I could not. Skiing, and particularly racing down the mountain, would be much more dangerous without goggles – without the yellow lens in those goggles, the glare created by sunlight on the snow makes it difficult to see the moguls that have been carved out by previous skiers and snowboarders. Hitting a mogul unexpectedly may cause you to fall and possibly hurt yourself. Thus, yellow lens ski goggles are a risk-reducing accessory for skiers and snowboarders. But as the chair lift went higher my friend was having fun saying how he would easily win the race down the mountain, and so I decided to race against him anyway, without my goggles. Yes, it would have been more sensible for me to take the time to get off my skis and go inside the chalet and spend the money to buy a new pair of goggles, but my desire to win the bet was so strong that I stopped thinking

rationality and raced down the mountain. I subsequently made my way to the bottom via a series of bone-jolting crashes over unseen moguls, and lost the bet, of course.

So, the yellow-lens effect for entrepreneurs relates to their urgency to get on with the wealth-making process rather than allocate a little more time and money to the exploration phase such that they gain more risk-reducing information. Both time and money are typically perceived as scarce by the nascent entrepreneur. First, consider the cost of information search activity. Expenditure on search costs will reduce the net income of the new venture if that search does not result in the capture of additional useful information. Information that is expected to simply confirm the entrepreneur's strongly held belief, for example, that consumers will actually buy the new product or service, or that production will proceed smoothly without technical problems, will be perceived as wasted expenditure that simply reduces net income. Because the entrepreneur almost certainly has a preference for more, rather than less, income, such expenditures will be seen as reducing profits from the new venture and thus reducing the entrepreneur's future wealth. Further, we note that the great majority of new ventures are 'bootstrap' funded (Winborg & Landstrom, 2000), and thus the opportunity cost of the funds required for search activity is extremely high, competing with prototype development, the cost of manufacturing equipment, marketing expenses, and so forth. When these opportunity costs are added to the direct cost of search activity, it may be perceived as profit maximizing to truncate information search activity and channel scarce funds into what is thought to be a better use for those funds. But also note that the entrepreneur may think that better-quality information about market demand, technological reliability and managerial ability will be gained soon after launching the new venture. Thus proceeding ahead in relative ignorance may be preferred because it consumes less cash prior to launch when cash

balances are critical, and because it is thought likely to provide better information and thus be a more effective use of the limited funds.

Second, information search activity requires a significant period of time to set up, to undertake, and to analyze the data derived. The first impact of this is to delay the receipt of initial sales revenues and therefore to reduce the discounted present value of the revenue stream associated with the exploitation of the opportunity. Perhaps more importantly, the time consumed with continuing to explore rather than to exploit the new venture opportunity may be viewed as an obstacle to winning the race to be 'first-to-market' and subsequently condemn the firm to an inferior profit stream as a follower rather than as the pioneer. The first-mover advantages (Lieberman & Montgomery, 1988) of the pioneer firm are commonly presumed (by nascent entrepreneurs) to provide unassailable competitive advantage, although most pioneers do not survive or even maintain market leadership (Tellis & Golder, 1995). Notwithstanding this reality, we are concerned with the *a priori* perceptions of nascent entrepreneurs here – the notoriously overconfident entrepreneur expects that pioneering will endow the firm with significant competitive advantages, so any delay due to information search activity is perceived to negatively affect the net present value of the firm's profits. Whether or not the nascent entrepreneur expects to be the pioneer, he/she may consider that the window of opportunity will soon close, and that waiting to gain more reliable demand and cost estimates will mean that the profit opportunity will be lost or diminished. Entering as an early follower can be quite profitable, of course (Tellis & Golder, 1995) but in markets where the early entrants 'lock up' strategic resources (Barney, 2001) entering later will be associated with lower profit streams and may even be associated with losses and bankruptcy. Thus the nascent entrepreneur may be

expected to adopt a sense of urgency and to avoid time-consuming information-search activity in favor of an earlier decision to exploit and launch into the target market.

To summarize the yellow-lens effect, it is due to the nascent entrepreneur's sense of urgency that the new venture should be launched sooner, rather than later, to gain higher profitability. The more wealth-seeking and materialistic is the nascent entrepreneur, that is, the more he/she values wealth and the goods and services that can be purchased from income, the more the entrepreneur will want to truncate information search activity and rush ahead to exploit the entrepreneurial opportunity.

The Purple Lens Effect – Differences in Intrinsic Motivation

Purple is a beautiful color that evokes visions of the rich robes of royalty, of the gowns of academic processions, of fortunate people fulfilling their dreams and desires. People say they are having a 'purple patch' when everything goes right for them. People use 'purple prose' which excessively expresses their passions and emotions. Purple is the color of pleasant emotions, of good feelings, of psychic satisfaction. Looking through purple lenses would make everything seem purplish, with the purple lenses interacting with the color of objects to become a lighter or darker purple, or some interesting new color – green things seen through purple lenses would look like a chocolate brown, for example. Thus wearing purple lenses would change your perception of things and you would see these things in a psychologically more appealing light than otherwise.

The purple lens effect for entrepreneurs is that they perceive more intensely the emotional benefits associated with an entrepreneurial opportunity, as compared with others who look at the same new venture opportunity. Although we commonly think of profit and

growth as the main objectives of entrepreneurs, they pursue entrepreneurship for both monetary and non-monetary gains. Thus entrepreneurs want to be entrepreneurs partly because of the psychic benefits associated with becoming and being an entrepreneur.

The most commonly-cited psychic benefit of being an entrepreneur is 'being my own boss' (see for example, Barringer & Ireland, 2006, p.2006: 6-7 and Shane 2003:106). All individuals want some degree of independence, manifesting itself in decision-making autonomy, but entrepreneurs seem to self-select on the basis of having a higher preference for decision making autonomy. Various studies have shown that preference for independence is significantly and positively related to the formation of entrepreneurial intentions (e.g. Douglas & Shepherd, 2002) and significantly distinguishes entrepreneurs from non-entrepreneurs (Shane, 2003:106-108). Accordingly, entrepreneurs are expected to get more psychic satisfaction out of being their own boss, which is a non-monetary corollary of becoming an entrepreneur.

Next, entrepreneurs have been shown to have higher need for achievement (McClelland, 1961) than non-entrepreneurs. Achievement has been defined as "To accomplish something difficult. To master, manipulate, or organize physical objects, human beings, or ideas. To do this as rapidly, and as independently as possible. To overcome obstacles and attain a high standard. To excel one's self. To rival and surpass others. To increase self-regard by the successful exercise of talent" (Murray, 1938, as cited by Shaver & Scott, 1991:31). Surely this is exactly what entrepreneurs do – entrepreneurship provides people who have high need for achievement a suitable and accessible way to accomplish something difficult, to overcome obstacles, to excel one's self, and so on.

Digging down a layer, what are the specific achievements that entrepreneurs might really prize? We contend that being recognized as the pioneer in a new market and/or industry may be an achievement of great personal significance to many entrepreneurs. Under the yellow lens effect we considered the monetary aspects of being the pioneer and gaining first-mover advantages – now, with the purple-lens effect, we are concerned with the psychic benefits of getting to market quickly and winning the title of pioneer, separate and distinct from any monetary benefits of so doing. Another psychic reward associated with entrepreneurship is recognition for being the intellectual source of great new ideas. Gaining patents has traditionally been a badge of achievement for inventors and many inventors subsequently become entrepreneurs to exploit their inventions. Other innovative ideas, perhaps not patentable, are also widely attributed to entrepreneurs, such as the ‘invention’ of new business models by Michael Dell, by Sam Walton (Walmart), and by Home Depot hardware stores.

Next, being recognized as the person responsible for the rapid growth of their new ventures is personally rewarding for many entrepreneurs. Growth is fraught with risk, since rapid growth associated with new technologies might cause a financial crisis for the new venture if expenses must be paid contemporaneously while revenues are collected with a lag due to credit terms allowed and late payments by customers. Successfully managing the rapid growth of a firm can be expected to generate personal satisfaction for the entrepreneur, which is quite distinct from the satisfaction associated with making profits and/or becoming personally wealthy. Finally, taking a new venture to an initial public offering (IPO) is a huge achievement for entrepreneurs, since relatively few new ventures survive, fewer become highly profitable, and still fewer result in an IPO that allows the founder to realize substantial capital gains. Foreseeing such psychic benefits, and being attuned via their preference structures to

gain greater satisfaction from such achievements, the nascent entrepreneur looks at the entrepreneurial process in a much more positive light than does the non-entrepreneur – the nascent entrepreneur sees the exploitation of an entrepreneurial opportunity as a means to achieve these keenly desired emotional benefits.

Telescopic lenses – Overestimating benefits and underestimating time and risk

Telescopes use multiple lenses to magnify what is viewed through these lenses. The situation being observed looks larger than it really is, and moreover, seems to be much closer than it really is. This analogy highlights the way that entrepreneurs tend to overestimate the magnitude of the profits from a new venture opportunity and simultaneously underestimate the proximity of those profits. This is a separate perceptual problem from overconfidence, which addressed a bias the individual has about their ability to cope with specific situations – here we are concerned with the typical entrepreneur's over-estimate of the profitability of the new venture, and the associated underestimate of the time it will take to set up the new business, gain customers, get paid for sales, get down the learning curve, and so on.

Looking through telescopic lenses certainly gives the entrepreneur the broad picture, and the combination of telescopic and clear lenses may endow the entrepreneur with exceptional 'vision' that may be the main reason for the discovery of the new venture opportunity in the first instance. But telescopic lenses compress the finer details of distant things, and these details may become the main impediments to gaining greater profits in a shorter time. As in most new situations, the broad visionary view seems relatively simple and manageable – the 'devil is in the details' as people say. Acting upon a telescopic perception of the new venture opportunity will cause the decision to exploit to be taken before it would be if the opportunity

was perceived through a single set of clear lenses, since the latter would allow perceptions of problem areas that would require more information search and problem analysis to be undertaken prior to the decision to exploit.

Now, if you were to reverse the telescope and look through the smaller end, objects would seem to be much smaller and to be much further away than they are in reality. But this is what entrepreneurs seem to do when they consider the risks facing the new business venture. They may see them, but they may mistakenly conclude that they are miniscule and far away. For example, entrepreneurs who say “no-one else is doing this, we have first-mover advantage, and therefore we will have sustainable competitive advantage” are likely to be looking through the telescope the ‘wrong’ way. First, there may be others already doing it somewhere, but their cursory scan of the landscape, seen through the wrong end of the telescope, makes existing competitors hard to notice, causes first-mover advantages to appear to dominate smaller but potentially more problematic features of the landscape, and may not reveal as-yet small developments that are likely to grow and render the entrepreneur’s first-mover or other competitive advantages easy to copy or obsolete (Barney, 1991).

And finally, the mention of a hot air balloon in the context of entrepreneurial perceptions cannot be allowed to pass without reference to the overconfident statements of some entrepreneurs who themselves emit a lot of hot air which later cools as they come back to the reality of ground level. But note that overconfidence is not the same as overestimation of outcomes or underestimation of risk (Sitkin & Pablo, 1992; March & Shapira, 1987). Overconfidence is concerned with self-efficacy that exceeds the individual’s capacity to successfully achieve the task at hand. The telescopic lens effect, on the other hand, concerns the individual’s failure to correctly estimate the size and complexity of the entrepreneurial

situation. In the rose lens effect the perceptual error is about one's own capacity, whereas in the telescopic lens effect the perceptual error concerns the characteristics of the new venture opportunity and the competitive environment.

Framing the Lenses

While talking about looking through lenses, it would remiss to ignore the role of the frames that hold the lenses, since they are also critical to how the entrepreneur perceives new venture opportunities. The frames are the structure which surrounds the lenses and which serves to align the lenses with the eyes such that a person can see through those lenses. Researchers have found that when eliciting information from others, such as in a survey, the way in which a question is 'framed', i.e. the context in which the question is considered, has a profound effect on the answer provided. Tversky & Kahneman (1979) introduced 'prospect theory' in which the framing of a situation affected the risk behavior of individuals – when the decision maker is presented with a specific decision-making situation that is framed in a positive light, the decision maker would exhibit risk aversion, whereas when framed in a negative light, the decision maker would exhibit risk-seeking behavior. Positive framing of a situation might be as simple as saying "there is a 50% chance of success" whereas negative framing of the same decision problem would be to say "there is a 50% chance of failure". Researchers have found that when the situation is positively framed, the decision maker will tend to act conservatively to protect prior gains, whereas when framed negatively the decision maker will tend to gamble in an attempt to capture some gains from the situation (Tversky & Kahneman, 1974; Busenitz, 1999).

In the context of entrepreneurship, we see entrepreneurs practice 'escalation of commitment' by increasing their investment into projects that are not doing very well, and conversely, by holding steady with strategies that have served well in the past, despite new information arising that indicates that the strategy undertaken may not be appropriate for the current circumstances (Tversky & Kahneman, 1974; Shaver & Scott, 1991). Both of these actions may jeopardize the entrepreneur's chances of success, of course, yet the entrepreneur's perception of the decision problem is effectively constrained by the frame through which he/she is looking at the problem, and the decision making process is defective in that the entrepreneur's perception is distorted because of the frame through which the decision problem is perceived (see Sitkin & Pablo, 1992; Sitkin & Weingart, 1995).

Summary and Conclusion

In this chapter we have been concerned with the perceptions of entrepreneurs and how these might differ from the perceptions of non-entrepreneurs. We are interested in entrepreneurial perceptions because these may explain why entrepreneurs step forward to undertake the process of entrepreneurial new venture formation while others hang back and instead choose employment with an established business or other organization. We illustrated these perceptual differences using the analogy of looking through lenses of different colors. We argue that viewing new venture opportunities through these different lenses causes individuals to be more likely to perceive entrepreneurship as a feasible and desirable career alternative, and thus they are more likely to subsequently form the intention to become an entrepreneur. Thus entrepreneurial individuals become nascent entrepreneurs and enter the exploration phase of the entrepreneurial process whereby they search for risk-reducing

information as part of the viability screening process. They also seek information about the availability and accessibility of the resources required to launch the new business venture. At some point, the nascent entrepreneur decides that enough information has been gathered and decides to exploit the new venture opportunity, and subsequently transforms from a nascent entrepreneur to an actual (practising) entrepreneur.

In each phase of the entrepreneurial process, perceptions play a role in driving the individual forward to become a practising entrepreneur. The clear-lens effect, which is due to greater self-efficacy for entrepreneurial tasks arising from the individual's underlying knowledge and human and social capital advantages that better equip him/her for entrepreneurial actions, allows the entrepreneur to better see the future demand for new products, services and/or business processes, and to better predict the evolution of new technology to serve human preferences and subsequent market needs. Risk analysis is considered from the viewpoint of superior knowledge and human capital, which means that the risk looks smaller through the entrepreneur's eyes, aided as they are by clear lenses. Greater knowledge also means that the entrepreneur will better understand the market and the technology and will make fewer mistakes as a manager in the exploitation phase of the entrepreneurial process.

The rose-lens effect, due to the overconfidence which characterizes entrepreneurial individuals, causes the individual to optimistically inflate the value of entrepreneurial opportunities by overestimating his/her ability to solve problems, to achieve cost and revenue targets, to meet deadlines, to judge the preferences of consumers, and so on. This will tend to hasten progress through the opportunity recognition process and the exploration phase as the nascent entrepreneur underestimates the difficulties and the risks likely to be associated with

the new venture. Once into the exploitation phase, the rose-lens effect inhibits the entrepreneur's accurate assessment of market demand, of cost estimates, and so on, and thus pushes the entrepreneur forward in the entrepreneurial process when others might have abandoned the process.

The blue-lens effect, due to the excessive use of simplistic heuristics and other cognitive biases that cause decisions to be made without proper data or sufficient analysis may cause the entrepreneurial individual to make 'poor' decisions to proceed ahead in the entrepreneurial process when others would have delayed the decision or abandoned the opportunity. Thus the entrepreneur may select an opportunity for exploration on the basis of simplistic analysis or the exercise of one or more cognitive biases, such as representativeness, availability, and anchoring. In both the exploration and exploitation phases the blue-lens effect causes the entrepreneur to proceed ahead, potentially ignorant of risks being taken, rather than to commit more time for deeper analysis of the decision problem.

The yellow-lens effect, which is due to the entrepreneur's urgency to gain first-mover advantages and the higher profits that first moving is expected to provide, causes the nascent entrepreneur to truncate information search because it costs money and takes time and both of these are perceived to jeopardize the profits to be made from the new venture. Thus the yellow-lens effect causes nascent entrepreneurs to move forward more rapidly in the exploration phase, and to take more risk in the exploitation phase, than would non-entrepreneurial individuals.

The purple-lens effect, which is due to the entrepreneur's greater passion for the process of entrepreneurship and for the achievements and recognitions that are expected to be associated with becoming and being an entrepreneur, causes the entrepreneurial individual to

proceed forward in the entrepreneurial process where others would stall, because the entrepreneur tends to place higher intrinsic value (than others do) on the non-monetary aspects of becoming and being an entrepreneur.

The telescopic lens effect describes the bias of perceiving opportunities to be bigger than they really are, to be closer (in time) than they really are, and conversely, to be less risky than they really are. Finally, framing effects were discussed to demonstrate that the way in which an opportunity is presented to the entrepreneur is likely to cause a cognitive bias towards risk aversion (if framed positively) or towards risk seeking (if framed negatively).

Of course, entrepreneurs tend to look through more than one, and possibly all of these lenses simultaneously, but we have tried to disentangle the impacts of each of the main factors that collectively operate to induce the individual to proceed more quickly along the path of the entrepreneurial process. Each lens operates to cause the entrepreneur to reduce information search activity, and thus each lens causes the entrepreneur to accept greater risk, both knowingly and unknowingly, than otherwise, and to increase the incidence of entrepreneurial new business start-ups.

So, are these entrepreneurial lenses a good thing, or a bad thing? For individuals they might be either, since they induce the individual to proceed with the entrepreneurial process to an outcome that lies somewhere on a spectrum that ranges from huge success to dismal failure. Indeed, a high proportion of entrepreneurial new ventures do fail (Dunne, Roberts & Samuelson, 1988; Cooper, Woo & Dunkelberg, 1988) and most of these failures this might be largely due to management ignorance (Shepherd et al, 2000) because most new ventures do not start until there is at least some evidence that the new technology 'works' and that there is unmet customer demand. It is up to the entrepreneur (and other members of the top

management team) to then launch the new venture and manage the production, marketing and other business processes. In the management of these business processes clear lenses are a definite advantage but the other lenses may inhibit effective management processes, perhaps leading to entrepreneurial failure.

For society, these entrepreneurial lenses are overwhelmingly a good thing. If nobody wore these lenses, then nobody would step forward to start new ventures (Busenitz, 1999), and we might still be living in caves. Entrepreneurs take private risks seeking personal gains, to be sure, but successful entrepreneurship is likely to provide societal benefits as well. These external benefits of private entrepreneurship include technical progress, increased productivity, safer living environments, better natural environments, higher standards of living, and so on. Consequently, at a societal level, we encourage the wearing of these entrepreneurial lenses, applauding successful entrepreneurs, and this induces individuals to form entrepreneurial intentions and become involved in the entrepreneurial process. This encouragement for entrepreneurial activity occurs in schools and universities and also in government- and university-supported technology and business incubators.

Thus there is a crucial role for entrepreneurship educators. We need to provide the voice of reason, educating individuals in risk-recognition skills and risk-mitigation strategies to ensure that entrepreneurs have a better awareness of the extent of their ignorance (such that they might 'know what they do not know') and how to cope effectively with new venture mortality risk and business risk more generally. Entrepreneurship education will also serve to enhance entrepreneurial alertness (opportunity recognition skills) and viability screening skills. Accordingly, it serves to build human (as well as social capital) and therefore builds entrepreneurial self-efficacy, and thus performs the role of the optometrist in supplying clear

lenses to potential entrepreneurs, reducing their managerial ignorance in particular. In addition, entrepreneurial education should be designed to reduce overconfidence and to reduce the use of simplistic decision rules by providing an awareness of the sub-optimality of such cognitive biases and heuristics. Finally, entrepreneurial education almost certainly serves to increase the number of entrepreneurial new ventures by promoting the financial and psychic benefits associated with successful entrepreneurship. We hope that by grinding and polishing the individual's clear, yellow, and purple lenses, and by discouraging the wearing of rose and blue lenses, entrepreneurial educators will have a significant positive impact on the incidence and success rates of entrepreneurship.

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