How to Get More Out of What You Already Know: Recognizing Opportunities and Making Better Decisions Afterwards

Erich N. Brockmann
University of New Orleans, Lakefront

We contend that entrepreneurs who are better at recognizing opportunities and making decisions do so because they are better able to tap into their storehouses of knowledge than their peers. More specifically, we contend that accessing tacit knowledge, which is often referred to as subconscious, has a noticeably positive impact on one's ability to recognize opportunities and improve subsequent decision quality. Here, we take a pragmatic approach by suggesting several techniques intended to help entrepreneurs to better access their tacit knowledge. Once accessed, this practical and useful knowledge can aid in entrepreneurial opportunity recognition and decision making.

INTRODUCTION

Tacit Knowledge and Making Decisions

The purpose of this paper is simple and straightforward; we want to help entrepreneurs recognize external environmental opportunities, make sense of them, and then decide on a course of action—collectively referred to here as "making a decision". While much of our presentation applies to decision making in general, the suggestions presented later are tailored to entrepreneurs who may become the future organizations' top level managers/owners—those who commit to a course of action and ultimately influence the strategic direction of an organization.

Our assertion, founded on theories of organizational learning and knowledge (Brown & Duguid, 1991; Gioia, 1986; Levitt & March, 1988; Lyles & Schwenk, 1992; Nonaka, 1991, 1994), is that the decision process can improve when you take a holistic decision-making approach which includes methods deemed rational (e.g., bounded rationality and satisficing) (Holloman, 1992; Simon, 1991) as well as some that are often deemed "less-than-rational" (e.g., intuitive, experiential) (Dane & Pratt, 2007; Gladwell, 2005; Sternberg *et al.*, 2000). We're focusing our coverage on those latter approaches which are experiencing something of a revival (Chandler, 2005; Dane & Pratt, 2007; Miller & Ireland, 2005; Rock & Schwartz, 2006; Sadler-Smith & Shefy, 2004).

Our following discussion relies on two presuppositions. First, everyone has some inventory of knowledge, explicit/tacit/hidden and otherwise, which is constantly changing through learning. Second, everyone has a repertoire of methods, avenues, or conduits that they use to access their knowledge depending on the environmental situation. We contend that everyone can improve the quality of their decisions by accessing and applying more of the knowledge they already possess. More specifically, we suggest that the source of this "additional" knowledge is simply accessing one's already existing tacit knowledge and then applying that knowledge to improve the outcomes from opportunity recognition and subsequent strategic decision-making. We begin our discussion with working definitions of our main

concepts and then show how proactive application of incubation, meditation, mental imagery, and/or intuition should allow more conscious access to one's tacit knowledge.

LITERATURE REVIEW

The human mind is perhaps the most efficient and complex information processor in existence. While everything we learn or experience is coded into memory through complex electro-chemical processes (Gladwell, 2005; Rock & Schwartz, 2006), we perceive only a very small fraction of what actually occurs as conscious knowledge with the majority of knowledge residing at the subconscious level (Einhorn & Hogarth, 1981, 1980; Hogarth, 1987; Parikh *et al.*, 1994). And, while storing knowledge may be somewhat automatic, the process of recalling that knowledge is much more difficult (Gioia & Ford, 1996; Rock & Schwartz, 2006). However, it is precisely this act of recall allows us to recognize situations, apply that requisite knowledge, make an effective decision, and then take appropriate action. And, when someone performs the process effectively and appears to do so effortlessly, they are often labeled experts (Isenberg, 1986).

Analogous to the conscious/subconscious storage is the segregation of knowledge between explicit and tacit dimensions (Nonaka, 1991, 1994). Explicit knowledge can be recalled easily, codified and transferred (Kogut & Zander, 1993). Tacit knowledge, on the other hand, is difficult to access (Sternberg, 2002; Sternberg *et al.*, 1993; Wagner, 1987) and, according to some (e.g., Polanyi, 1964, 1966) impossible to do so consciously. Although the specifics of accessing tacit knowledge remain debatable, there is agreement that it is a cognitive process that resides at the subconscious level and that it plays a significant role in our decision making (Hogarth, 2001; Nonaka, 1991, 1994; Polanyi, 1964, 1966; Shirley & Langan-Fox, 1996; Sternberg, 1997; Sternberg *et al.*, 1993).

The influence of the subconscious is further implied by the many simplifying mechanisms we use because of our limited conscious cognitive ability. We use structuring mechanisms (Mintzberg *et al.*, 1976) and simplifying heuristics such as mental maps (Calori *et al.*, 1994; Huff, 1990), bounded rationality and satisficing (Holloman, 1992; Simon, 1960), and even garbage cans (Cohen *et al.*, 1972). We then use scripts (Gioia, 1986), intuition, and tacit knowledge to fill voids in the data before making a decision (Agor, 1984; Isenberg, 1984; Wagner, 1991; Wagner & Sternberg, 1987, 1990).

These cognitive mechanisms are rarely understood or even acknowledged by the managers themselves because they frequently occur below the conscious level (Gioia, 1986; Parikh *et al.*, 1994). However, one common theme emerges— these cognitive mechanisms and heuristics are avenues to make implicit knowledge explicit (Gioia & Sim, 1986; Nonaka, 1994), provide sense (Gioia, 1986; Gioia *et al.*, 1994; Weick, 1995), and therefore make knowledge accessible to the conscious where it may be applied to decision making (Parikh *et al.*, 1994).

The research on actually using these cognitive processes is limited with a few exceptions (e.g., Shirley & Langan-Fox, 1996; Sternberg *et al.*, 2000). However, it has been shown that measures of general intelligence (e.g., Intelligence Quotient) are insufficient to predict managerial success in a practical environment (Armstrong & Anis, 2008; Sternberg, 1997; Sternberg *et al.*, 1995). Rather, it is a person's tacit knowledge inventory, which grows through time and practical experience, that is a good predictor of successful managerial decisions (Sternberg *et al.*, 2000). More specifically, it has been shown that it is a manger's industry related experience rather than general experience that leads to better strategic decisions (Brockmann & Simmonds, 1997).

Other, practically oriented, decision making research has shown a positive relationship between the speed of a decision and use of tacit knowledge (Bourgeois & Eisenhardt, 1987, 1988; Eisenhardt, 1989, 1990; Eisenhardt & Bourgeois, 1988). In some contexts, mostly dynamic environments, there is also a positive relationship between the speed of decisions and their usefulness (Judge & Miller, 1991) thus providing a quality aspect to the decisions. What is lacking in the extant literature is guidance on how practicing mangers can better utilize their wealth of knowledge in a proactive manner in order to make better decisions. This is where we hope to make a contribution.

What is Tacit Knowledge?

So, why examine tacit knowledge? The very name, tacit, suggests that it is difficult to explicate, capture, access and apply. First, we must recognize that we are all cognitive misers (Gioia, 1986), and we don't want to use our mental processing any more than we have to. Therefore, it makes sense that we rely more on our explicit knowledge since it is easier to access than is our tacit knowledge. Second, it is precisely this difficulty which leads us to suggest that tacit knowledge remains underutilized. Only through conscious effort can we drill further into our reservoirs of subconscious knowledge so that we can use more of what we already have in a proactive manner.
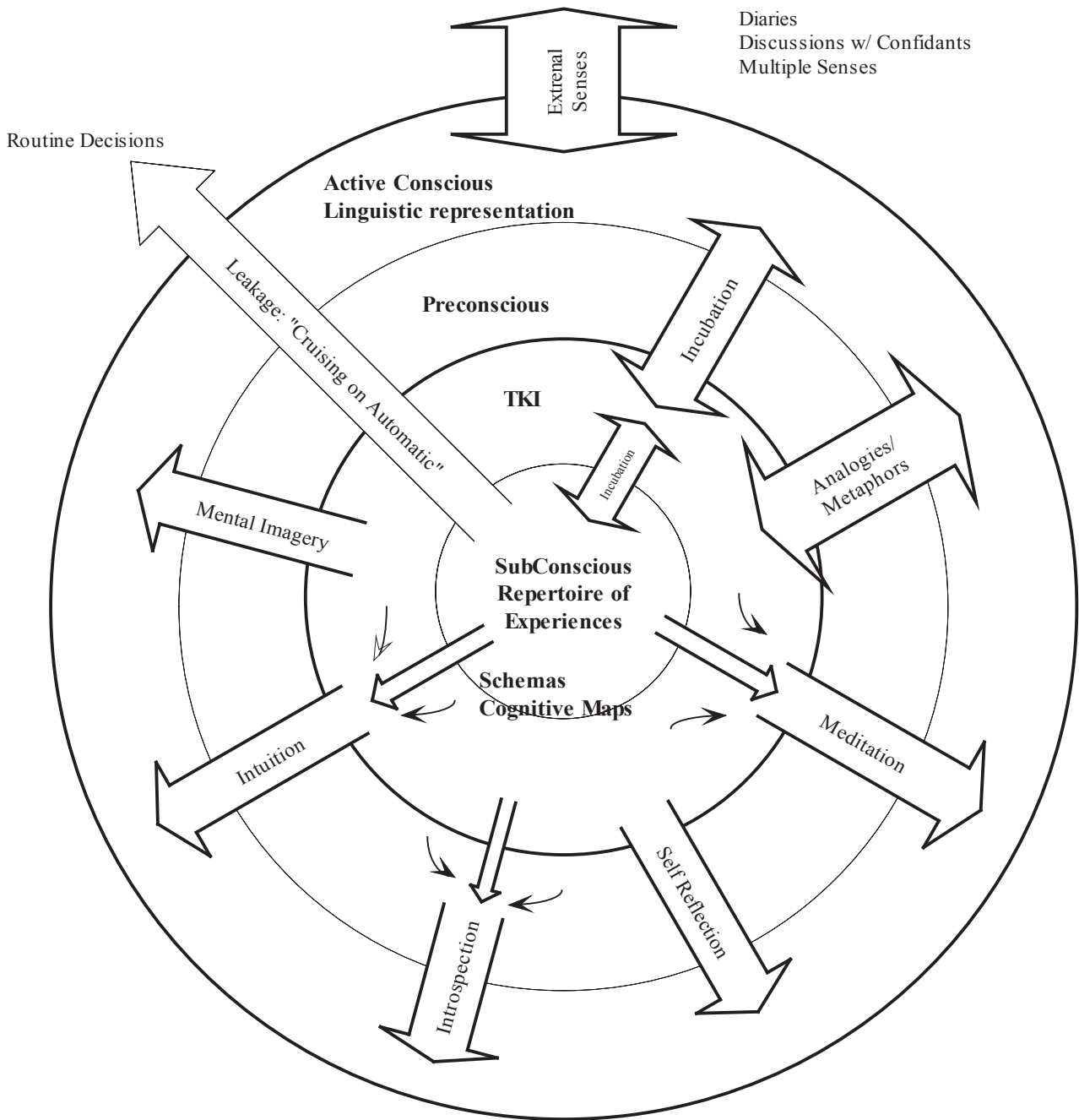
Extending on Sternberg's (1996) positive relationship between a person's tacit knowledge inventory and decision quality, we contend that entrepreneurs who learn how to better utilize their inventory will better recognize opportunities and make better subsequent decisions. This contention further supports our practical intent because of the work related nature of tacit knowledge as defined by Wagner & Sternberg (1985). That is, tacit knowledge is work-related practical knowledge learned informally through experience on the job. Tacit knowledge is an intellectual and cognitive process that is neither expressed nor declared openly, but rather implied or simply understood. It is intimately related to action such that it reflects knowing <u>how</u> as contrasted with knowing <u>what</u>. It is normally procedural in nature and acquired without direct instruction or help from others—although it can be learned through training. Moreover, and of critical importance in our context, it is practically useful and instrumental in the attainment of goals that the user values; that is, it can be associated with recognizing and leveraging opportunities (Hsieh *et al.*, 2007).

Others scholars, especially Polanyi (1964), consider tacit knowledge similarly but consider it to be inaccessible at the conscious level and only available in after-the-fact sensemaking. Wagner & Sternberg (1987) contend that a person, if so tasked, can and will use their tacit knowledge. We prefer to leave the theoretical debate on access for another time and take a parsimonious and practical position. We will use tacit knowledge as defined above with the basic assumption that using more applicable knowledge of any type, tacit or otherwise, will result in better decisions. Our contribution to entrepreneurs and practicing managers is to help them better utilize their existing knowledge and therefore make better decisions.

Opportunity Recognition and Strategic Decisions

As introduced earlier, our context is that of opportunity recognition and strategic decision-making (SDM) by entrepreneurs and an organization's leadership. We will consider opportunity recognition to be the first step in deciding to create an organization and then position it for future success. Once an opportunity is recognized, those decisions involving the positioning of the organization for success in a competitive environment through allocation of significant organizational resources and capabilities are considered to be strategic in nature. For simplicity, we will subsume the recognition for an organization's need as part of opportunity recognition.

FIGURE 1
LEVELS OF KNOWLEDGE AND AVENUES FOR THEIR ACCESS

Extrenal Senses

Diaries
Discussions w/ Confidants
Multiple Senses

Routine Decisions

Active Conscious
Linguistic representation

Leakage: "Cruising on Automatic"

Preconscious

Incubation

TKI

Incubation

Mental Imagery

Analogies/
Metaphors

SubConscious
Repertoire of
Experiences

Schemas
Cognitive Maps

Intuition

Meditation

Introspection

Self Reflection

ACCESSING KNOWLEDGE TO MAKE INDIVIDUAL DECISIONS

Figure 1 (Brockmann & Anthony, 2002) illustrates our different types and levels of knowledge[1] (subconscious, tacit, preconscious, and active) in concentric circles—spheres would be a better metaphor but harder to visualize. Consistent with the difficulty of access, the tacit levels of knowledge reside in the inner region with the more explicit knowledge residing towards the outer surface. The knowledge in the middle area is referred to as preconscious. The various avenues for accessing knowledge are shown as arrows (intuition, incubation, meditation, self-reflection, introspection, mental imagery, and metaphors/analogies). We do not imply any particular level of importance for one avenue of access relative to the others. The purpose of the figure is to simply provide a graphical representation of our discussion of the access avenues as they relate to tacit knowledge. We begin our discussion by showing how our knowledge interacts with the environment we are currently perceiving. We then look at how we apply our knowledge in an almost automatic process when faced with easily recognizable environments. We then extend our considerations to the topic at hand—how we use our tacit knowledge and how we can make better use of that same knowledge to make better decisions about how to interact with the current environment.

Surface Considerations: External Senses and the Active Conscious

Knowledge access is accomplished via the active conscious—also known as the working memory and shown closest to the outer edge of Figure 1. The active conscious is the bidirectional gateway between our internal storehouse of all knowledge and our perceived external environment (Rock & Schwartz, 2006). The active conscious provides a perceptible, almost tangible, connection where we can bring our senses of external stimuli (e.g., sight, hearing, taste, smell, and touch) to bear on our current environment in order to make sense or recognize something for what it is (Gioia & Ford, 1996). This perceptible form of our senses is referred to as Linguistic Representation because we can recognize and verbally describe what's happening (Gioia & Ford, 1996).

However, an impediment exists to accessing knowledge because the active conscious is energy intensive and therefore easily overloaded (Rock & Schwartz, 2006). These limitations are analogous to eating with utensils one-tenth their normal size or drinking from a fire hose—transferring data chunks is just hard to accomplish. These difficulties cause us to be miserly with our active conscious (Gioia, 1986). In fact, we reserve the active conscious for addressing those experiences and decisions that are novel, abstract, complex, ill-defined, unstructured, and have little or no set precedence (Taylor, 1981)—descriptors that apply to opportunity-rich environments and strategic decisions as well.

Other types of decision, those requiring little thought, tend to be ready-made; they often rely on heuristics (Dane & Pratt, 2004) or mental shortcuts, and the resultant actions are referred to as "cruising on automatic" (Gioia, 1986) or "hard-wired" (Rock & Schwartz, 2006). Such ready-made decisions or actions mostly rely on explicit knowledge or well-developed action routines triggered after recognition of a similar experience stored in the subconscious (Parikh *et al.*, 1994) or from cognitive maps (Fiol & Huff, 1992). These physical recognitions, or gut-feelings, are sometimes referred to as intuitive recognition (Agor, 1984; Hayashi, 2001; Sadler-Smith & Shefy, 2004).

Deeper Considerations: Tacit Knowledge and the Preconscious

Tacit knowledge resides deeper[2] on Figure 1 than our active conscious (Gioia & Ford, 1996) and is a subset of our preconscious. Our preconscious is a vast storehouse of all of our knowledge while tacit knowledge is focused on those experiences related to how something is accomplished.

Tacit knowledge helps us make decisions on how to accomplish tasks although its access is tacit, as the name implies. That is, our tacit knowledge is brought to bear when needed but we often don't recognize its application. How then do we proactively transfer our vast storehouse of tacit knowledge into our limited reservoir of active conscious so that we can apply it to the present situation? This access will be discussed in later sections. First, let's look at how intuition and tacit knowledge affect our more automatic type responses to environmental considerations.

Intuition and Gut-Feelings

We've all made decisions because it "just felt right" to do so. This feeling is the basis for intuitive decisions—during retrospection, we can't explain why we felt the way we did, we just did (Agor, 1986b; Parikh *et al.*, 1994; Shirley & Langan-Fox, 1996). And, while research continues on the mechanisms of intuition, little in the way of practical application is available. Suggestions on how one can improve outcomes based on intuition are limited to recognizing when intuition is being used successfully, noting the circumstances and then reinforcing that experience (Agor, 1986a).

One point of confusion is that intuitive decisions can be both good and bad. For instance, one can feel that the current environment is most conducive to a certain course of action. However, once that feeling is sensed, no further exploration is considered—a course action then follows. And, while this may result in faster decisions, it may not result in the best course of action. That is because the search for other opportunities is ceased when a decision is made. Therefore, even though intuition has been linked to creativity (Shirley & Langan-Fox, 1996), one can suggest that intuition stifles as well as stimulates creativity.

In fact, extant literature illustrates the confusion surrounding the very definition of intuition and its application (Dane & Pratt, 2007; Shirley & Langan-Fox, 1996). To some, it's a process or form of knowing (Sadler-Smith & Shefy, 2004). To others, it's a form of knowledge itself (Miller & Ireland, 2005). And, to still others, it's a vehicle for accessing knowledge (Brockmann & Anthony, 2002; Burke & Miller, 1999; Parikh *et al.*, 1994; Shirley & Langan-Fox, 1996). Its use is further linked to creativity, instinct, and emotions (for a more thorough review see Shirley & Langan-Fox, 1996). Still, intuition has powerful effects on our decision making whether we care to admit it or not (Agor, 1987).

We prefer to rely on intuition's semantic basis for our working definition. That is, as proposed by Sadler-Smith and Shefy (2004), the Latin roots of Intuition suggest that it means 'to contemplate' or 'look within'. Its tacit-like quality seems to be consistent with the similar inability to explicate tacit knowledge. Therefore, we will avoid debate on a precise definition of intuition and consider it simply as one of the many avenues used to access tacit knowledge (Brockmann & Anthony, 2002; Burke & Miller, 1999; Shirley & Langan-Fox, 1996). And, although it most certainly affects opportunity recognition and strategic decision making, intuition's incongruity with our suggestions for proactive application cause us to limit its coverage in favor of the other avenues for accessing knowledge.

Leakage or 'Cruising on Automatic"

Similar automatic-type decisions often include those that are non-strategic in nature but illustrative of the knowledge application process. Decisions occurring in routine, benign, environments rarely require much thought. However, these decisions still benefit from our preconscious knowledge through "leakage" (Gioia & Ford, 1996) which is similar to the gut-feeling when intuition is involved. An example of leakage is illustrated through the use of a meme that has been available on the web for the past several years. Try and read the following paragraph:

> "According to rscheearch at Cmabrigde Uinervtisy, it deosn't mttaer in waht oredr the ltteers in a wrod are, the olny iprmoetnt tihng is taht the frist and lsat ltteer be at the rghit pclae. The rset can be a total mses and you can sitll raed it wouthit a porbelm. Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod as a wlohe."

Hopefully, you were able to read AND make sense of the paragraph without too much difficulty. Although no such research exists according to Davis (2003a), a staff member at the Cognition and Brain Sciences Unit, in Cambridge, UK, the example does illustrate a key point about tacit knowledge—that it helps us recognize and then fill in gaps of data without us consciously knowing that we're doing anything.

Taking this example a step further and applying the "work-related know-how" characteristic that is implicit in tacit knowledge, consider the following statement (Davis, 2003b):

> "Wrod rset porbelm tihs taht iprmoetnt frist is ltteer be the wouthit mses huamn bcuseae lteter."

These words are the same as those used previously, misspelled in the exact same way. However, you probably had more difficulty in reading the second passage. The difference is that the words are no longer in what would normally be considered a coherent paragraph; that is, one that conveys a message. We rely on our experientially gained tacit knowledge to know that a paragraph normally conveys a message. We can then read the 'message' easier because of our tacit knowledge leaking through to our active consciousness so that it could be applied to the situation at hand. If there is no message, such as the case in the second listing, then there is no previous learning upon which we can fall. Therefore, the random listing of the same words is more difficult to decipher than a paragraph with a coherent message.

Perhaps a better known example of applying knowledge and recognition is that of Champion Chess Masters playing several simultaneous games (Gioia, 1986). The Champion's performance is possible because his or her opportunities and decisions are guided by experientially gained knowledge from previous chess games. The Champion automatically recognizes a pattern/opportunity and immediately decides on the appropriate course of action. However, if the chess pieces are arranged on the board randomly, there can be no recognition. Therefore, the Champion is unable to decide on the next course of action in the same manner because there is no knowledge upon which to draw.

As in the spelling and chess examples, we see how tacit knowledge is invaluable in the automatic recognition and decision making environment. We will now shift our discussion to show how you can leverage your tacit knowledge proactively in addition to cruising on automatic. The remainder of our discussion is based on our global proposition:

Proposition: there exists a positive correlation between the access of knowledge through application of one's repertoire of tools via the proactive avenues discussed below and an entrepreneur's strategic success after deciding to pursue opportunities recognized through the process of accessing his or her knowledge.

How to Proactively Access and Benefit from Your Tacit Knowledge

The following section details the methods by which individual managers can recognize opportunities and make better decisions by consciously accessing their tacit knowledge. The methods share a common theme of self-communication as the vehicle for accessing tacit knowledge (Nonaka, 1994). Through self-communication methods, the knowledge to see an opportunity or make a decision is transferred from the tacit domain into the active conscious and thus applied to the current environment. The methods discussed in the subsequent sections are: self-reflection, introspection, mediation, relaxation, incubation, reinforcement, and mental imagery.

Self-Reflection, Introspection or Meditation

One popular method for eliciting tacit knowledge is that of self-reflection. This method normally involves introspection, meditation, relaxation techniques, or "kicking back". The common goal here is to remove mental interference and allow the active conscious to focus on what's important as separate from the noise. The actual process is not clearly understood but has proven successful in experiments (Agor, 1984; Gioia & Ford, 1996). In fact, for those highly disciplined in meditation, the process is powerful enough to alter the very structure of the brain (Begley, 2007). However, you don't have to be that talented in order to benefit in our context.

Suggestion: Set aside some personal time for self-reflection and make it productive. We all know what time of day allows us the maximum productivity. Some of us are "morning people" and others "night people" based on circadian variations (Bodenhausen, 1990). Just block out some of your productive time so that you are not interrupted. Establish an environment free of interruption, get comfortable, and just let your mind mull over the situation. 'Talk' to yourself about the situation. Some people benefit from more formal methods of meditation. However, simply kicking back and reducing the external stimuli should have some positive effect.

Incubation

Similar to self-reflection, with incubation you set the decision aside in a conscious manner while allowing it to process in the subconscious—to incubate (Hogarth, 2001; Sternberg, 1996). Incubation

seems to remove cognitive "interference" which then allows the subconscious to work on a problem unencumbered. While incubating, the mind is allowed to wander. Such wandering may lead to accessing tacit knowledge in new and innovative ways (Gioia & Ford, 1996). Any newly discovered relationship can become the basis for a creative solution.

Incubation seems to work best if we: first, invest enough time in the problem to explore it from several aspects; and, second, allow enough time for tacit recognition (Sternberg, 1996; Sutton & Hargadon, 1996; Ward *et al.*, 1999). Without sufficient exploration of a problem, we can fall into the trap of trying to make a decision, rational or otherwise, in total ignorance (i.e., the absence of knowledge) (Holloman, 1992). This is akin to the random placement of chess pieces on the board thus precluding recognition. Relying solely on pure heuristics implies pure uncertainty which further implies pure disaster. In fact, it's rarely a good idea to rely on either extreme in decision making, rational or non-rational, to the exclusion of the other in making important decisions.

Suggestion: you probably have a 'to do' list or a listing of the myriad projects you're working on. In the existing environment of multitasking, you're probably working on all, or at least several, of them at the same time. Regardless, when you hit a roadblock on a certain problem, don't try and force the issue. Simply move that aspect/problem to the 'back burner' and don't think about it for a while. Just move along to something else on your list. You'll be amazed when a solution springs to mind, the active conscious mind that is, when you least expect it. To illustrate, we've all had the experience of trying to remember an actor's name when we see him or her in a movie. The name is just beyond our level of consciousness; we get frustrated and say "to heck with it". However, as soon as we move on to another problem and let the previous one incubate, the answer comes to mind when we least expect (Agor, 1984, 1986a; Gioia & Ford, 1996).

Reinforcement

Reinforcement is routinely associated with learning. In our context, we're learning how to recognize opportunities by improving our ability to access and apply tacit knowledge. Reinforcement is yet another tool which relies on communication. However, the communications inherent to reinforcement come externally through others as well as internally through self-communication. From a cognitive perspective, reinforcement both enhances your ability to access tacit knowledge as well as provides a vehicle for actually increasing of level of knowledge.

Recall from earlier that we are all cognitive misers. The active conscious has only a finite capacity and can become easily overloaded. Think of watering a garden. You can't really provide thirty inches of water once a year and expect results. Rather, you must provide numerous, smaller, watering sessions interspersed with periods of growth. In learning, these more frequent watering sessions are referred to as "chunks". And, we can only absorb so many chunks at one sitting (Einhorn & Hogarth, 1980). Therefore, we need repetition and feedback on the quality, or correctness, of each chunk for it to be useful (Rock & Schwartz, 2006). We sometimes need reinforcement before we recognize something for what it is (e.g., an opportunity).

Two methods for reinforcement are recommended. One method of reinforcement is through discussions with others about your past personal successes in recognizing opportunities and making decisions (Agor, 1984). By using the simple process of articulation, you are applying multiple senses to the situation. And, we are better able to understand (i.e., recognize and learn) when multiple senses are brought to bear. Therefore, we are accessing and increasing our level of knowledge about opportunities by talking over the process with someone else.

The other method of reinforcement is through self-communication—talking to yourself. This method is more explicit than the self-reflection processes discussed earlier. Here, we utilize multiple senses on our own. That is, we actually talk to ourselves and/or keep some sort of a written diary. With a diary, you are 'talking' to yourself through writing and keeping track of your decisions and the related processes you used. The process of 'talking' through writing involves multiple senses much in the same way as talking and listening to a confidant would. Research has shown that talking about a situation requires more

gamma wave activity in the brain than just thinking it out (Rock & Schwartz, 2006) which may reflect the processing and accessing of tacit knowledge (Gioia & Ford, 1996).

Suggestion: seek out confidents in the workplace. Discuss your experiences with making decisions. This doesn't have to occur frequently or for lengthy periods. Often ten minutes a day is sufficient to benefit (Rock & Schwartz, 2006). Another method of applying multiple senses is to talk to yourself through a diary. When entering your experiences, talk them out while you're writing them so that you get the benefit of multiple senses. The diary method may be more applicable depending on your working environment. For instance, you may be in an environment where you don't have close personal relations. Or, if your work environment doesn't have an acceptable environment of sharing, you may find it difficult to form personal relations necessary for using the more interpersonal reinforcement techniques.

Mental Imagery

One process that ties self-communication and the application of multiple senses together is that of mental imagery. Mental imagery is the process of visualizing pictures, events, and scenarios in the "mind's eye". It has been used in representing abstract concepts, surfacing of assumptions, clarifying of goals, and enhancing creativity (Jarvinen & Gold, 1981; Kazdin, 1978; Simonton & Simonton, 1975). These functions all have characteristics closely related to the process of opportunity recognition, strategic planning and problem solving. From a cognitive miser perspective, it's also interesting to note that it requires less energy to form images in the mind than it does to form words (Rock & Schwartz, 2006).

Cognitive psychologists claim that we use imagery to some degree in almost every thought situation although it may not be consciously (Kosslyn, 1975, 1983). This imagery process allows managers to think of abstractions, such as forecasting the future, in a very realistic way. It also allows strategic planners to create, access, mentally manipulate, and change their visions of the future by opening tacit knowledge to examination.

An excellent illustration of using mental imagery to access knowledge is in Anthony et al.'s (1993) example of a person trying to recall how many windows are in his or her house or apartment. Few can immediately recall the exact number of windows, but the knowledge is buried in the subconscious. Therefore, most people envision themselves walking from room to room while mentally counting the windows they 'see'; and, eventually the person doing the 'counting' ends up with an accurate number.[3]

In another practical example of mental imagery revealing opportunities, Doug Ivester, then CEO of Coca-Cola, used a helicopter metaphor (Morris, 1997). Here, Ivester guides his managers through imagining they are mentally rising upwards. This action is not readily acceptable and thus challenges the team members' perspectives of how they look at things—we're used to seeing things horizontally. Furthermore, instead of seeing where Coke is being sold while looking down, managers are guided through mental imagery to see where Coke is *not* being sold. Ivester claimed that the process has allowed Coke to turn a mature local market into a growth opportunity.

Suggestion: practice mental imagery whenever you can; recognize its successes and reinforce those experiences. Use mental imagery in a manner similar to the way you use self-reflection. You'll need a quiet environment where it's safe for you to 'kick back' and close your eyes. You can then picture or 'see' yourself in different situations. You are actually visualizing yourself walking through the environment and experiencing different situations. Note the current state and then project yourself into the future and 'see' what's happened after your decision is implemented. You can do this for however many iterations it takes until you are comfortable in this visualized future. In essence, you have made multiple runs at test markets without any cost and without ever leaving your office chair.

SUMMARY

The theme we have tried to cultivate here is that of self-communication as a method for consciously accessing tacit knowledge. Through the techniques of self-reflection, incubation, reinforcement and imagery, you should be able to access your tacit knowledge in a proactive manner. Once accessed, your tacit knowledge can then be brought to bear in the current environment to recognize opportunities and

then act. Implicit in our discussion is that the application of more knowledge to a situation will result in a higher quality outcome.

CLOSING

As stated earlier, our overriding goal was to improve opportunity recognition and the outcome quality of subsequent strategic decisions. We made two presumptions. First, we all have knowledge. Second, we all have tools and abilities to access that knowledge. Our distinctive contribution here was to integrate the less traditional decision-making techniques and in particular concentrate on the access and application of tacit knowledge. Our basic premise is that when entrepreneurs access their individual tacit knowledge and apply it in the strategic and competitive context, higher quality actions should emerge. This is our contribution to the entrepreneurial literature and advancement of entrepreneurial practice.

Although the very nature of tacit knowledge makes it implicit and unspoken, the use of the avenues illustrated on Figure 1 aid in helping express that which is difficult to express. Mental imagery and self-communication appear to be unique in their abilities to explicate individual tacit knowledge. Once openly acknowledged and expressed, the implications from knowledge, previously tacit, should prove to be of significant value when examining the competitive environment.

We accept that people have different capacities for recognizing opportunities and making quality decisions—some people simply *appear* to be smarter than others. And, regardless of the debate about teaching opportunity recognition (e.g., Saks & Gaglio, 2002), we don't have to accept the status quo; everyone can learn how to make better decisions through the use of the tools presented here. By recognizing the influence of tacit knowledge, we may be better able to understand the previously hidden benefits to the decision maker and, by extension, the entire organization. Once we learn how to access our tacit knowledge, we can take a more proactive approach in applying that knowledge to improve both opportunity recognition and decision quality.

NOTES

[1] In the following discussion, we begin with an assumption that knowledge is already 'there'. We are addressing the effectiveness of accessing and applying that knowledge. In order to benefit from the suggestions presented later, a reader does not really have to understand the mechanisms for knowledge creation. For more background on knowledge creation, particularly tacit knowledge, other publications are available Brockmann, E.N. & Simmonds, P.G. (1997). Strategic decision making: The influence of CEO experience and use of tacit knowledge. *Journal of Managerial Issues*, 9, 454-467, Brockmann, E.N. & Anthony, W.P. (1998). The influence of tacit knowledge and collective mind on strategic planning. *Journal of Managerial Issues*, 10, 204-222, Brockmann, E.N. & Anthony, W.P. (2002). Tacit knowledge and strategic decision making. *Group & Organization Management*, 27, 436-455, Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5, 14-37, Saint-Onge, H. (1996). Tacit knowledge : The key to the strategic alignment of intellectual capital. *Strategy & Leadership*, 24, 10-14.

[2] We don't mean to imply direction in the literal sense. Here, deeper, simply means that the preconscious and tacit knowledge are closer to the core in Figure 1 than are the more explicit forms of knowledge. That is, tacit knowledge is more deeply ingrained than the active conscious.

[3] This is actually an example of 'what' type of knowledge and therefore not truly the 'how' of tacit knowledge. To be more precise, the tacit knowledge is actually the 'use' of the knowledge elicited during imagery in concert with other considerations for making a decision. Regardless, the mental imagery episode shows how to elicit knowledge that was already there, but tacit (i.e., the number of windows in your home). We wish to thank an anonymous reviewer for pointing out this difference.

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