1. Intuiting and reasoning: facilitating subconscious and conscious processing for better decisions in organizations

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Intuition research has long recognized that decision making involves two types of mental processing: intuiting and reasoning, a view known as the dual processing model. Intuiting, or intuition, is commonly understood as rapid, unconscious mental processing based on associative pattern recognition that results in affective judgments, whereas reasoning is viewed as rational, deliberate and linear (Dane & Pratt, 2007). The dual processing model depicts these two processes as alternatives and being in tension, and decision makers as favoring one or the other (Calabretta et al., 2017; Elbanna & Child, 2007; Hodgkinson & Clarke, 2007). Researchers have observed the need to balance the two processes for effective decision making. They also recognize that we still lack a unifying conceptual framework explaining how the two processes are related and how they can be exploited in organizational decision making (Calabretta et al., 2017; Hodgkinson et al., 2009; Lieberman, 2007; Sinclair, 2011; Sinclair & Bas, 2017).

I concur with these researchers about the need to conceptualize intuition and rational analysis as continually interacting and interdependent processes. This view broadly aligns with what some authors call expert intuition (Dane & Pratt, 2009; Kahneman & Klein, 2009). It is argued that experts in any field have “better” intuitive insights because they have more information, based on repeated experiences, stored in memory. They therefore have more to draw from when encountering new, but similar, decision-making situations, which gives them an advantage over non-experts in making efficacious decisions (Klein, 2003; Simon, 1992).

Despite the insights from the research on expert intuition, I agree that a unifying conceptual framework is still needed to explain *how* the processes of intuiting and reasoning are related. To develop such a framework, it is necessary to examine further the key concepts of “intuiting” and “reasoning” and their relationship. A clear conceptual framework is necessary to facilitate effective decision making and for intuition research to impact the practice of intuition in organizations. Dougherty (2018) presents a similar argument about theories of innovation. In her view, innovation theories have focused on explaining “the what” and “the why” but have failed to explain the “the how” and have therefore been ignored by managers responsible for innovation.

Much of the empirical research on intuition in organizational contexts has focused on the decision makers’ experience of intuition as a psychological or bodily phenom-

enon: a sudden, inexplicable insight or a “gut feel” (Dane & Pratt, 2007; Hayashi, 2001; Sadler-Smith, 2016). Therefore, the phenomenon of intuiting is viewed as an obscure process that cannot be described and explained explicitly, leaving “the how” unanswered. As a result, intuiting cannot be taught for exploiting it in decision making.

Here the processes of intuiting and reasoning are approached differently from the mainstream literature. Instead of the prevalent perspectives of cognitive psychology or neuroscience (cf. Akinci & Sadler-Smith, 2012; Hodgkinson et al., 2009), I adopt the perspective of philosophy (epistemology, in particular), to explain reasoning, intuiting and their relationship conceptually, with the goal of increasing our understanding of these phenomena. This epistemological explanation is then illustrated with a case example of a CEO who efficaciously balanced reasoning and intuiting in his own decision making and helped others in his organization to do the same, with good outcomes in multiple dimensions, such as decentralized (faster and more efficacious) decision making, employee satisfaction (low turnover), and financial performance.

The theory of epistemology¹ I use to explain reasoning, intuiting and their relationship is Rand’s Objectivism (Rand, 1990; Binswanger, 2014; Peikoff, 1991; Salmieri, 2016) and her view of psycho-epistemology, “the study of man’s cognitive processes from the aspect of the *interaction between the conscious mind and the automatic functions of the subconscious*” [italics added] (Rand, 1971: 18). These offer a unique perspective on mental processing, which, I argue, sheds new light on the phenomena of intuiting, reasoning, and their interplay, and facilitates their exploitation in organizational contexts.

INTUITING, REASONING, AND THEIR RELATIONSHIP

Intuiting is the rapid, automatized recall of mental content from the subconscious “storage house” (Rand, 2001: 57) that facilitates fast, efficacious decision making (Hayashi, 2001; Klein, 2003). But mental content – knowledge – must first be acquired through a conscious process of perception and reasoning; otherwise, there would be only random associations but no actual knowledge of reality to retrieve from the subconscious memory files. We acquire and organize knowledge through reasoning. Therefore, reasoning determines what gets stored in memory and how, and what intuiting retrieves from the subconscious for conscious processing in decision-making situations (cf. Rand, 1999: 55).

Unlike the automatized, subconscious recall of knowledge, or intuiting, the explicit reasoning process requires effortful work and determines the validity of our knowledge (its grounding in reality). In addition, the knowledge we are able to hold in conscious awareness is limited (Binswanger, 2014: 131; Rand, 1990: 63). For these reasons, we need to economize our mental resources, by acquiring and integrating our knowledge logically and filing it in our subconscious database accordingly, through reasoning. Such a logical reasoning process yields valid knowledge and

enables automatized retrieval of it from the subconscious – intuiting – for making effective decisions. The identification of the reasoning process is what the Objectivist epistemology adds to the insights on expert intuition, to enhance our understanding of efficacious decision making.

Acquiring and integrating knowledge entails forming concepts, to facilitate thinking and action and to save mental space (Binswanger, 2014: 131; Rand, 1990: 63). We form first-level concepts (e.g., ball, dog, man, rolling, barking, walking) from perceptual observations by differentiating and integrating them (for example, by mentally isolating balls from other objects and grouping them together). We then abstract these first-level concepts into higher-level concepts (e.g., toy, pet, animal, motion, vocalizing) through further differentiation and integration. Concepts hold large amounts of knowledge about their units in a condensed form, made possible by *omitting the particular measurements of the concepts' units and retaining only their essential characteristic* that gives rise to all the rest. Rand illustrates this with the concept of man, defined as “a rational animal,” as opposed to “an animal possessing a thumb.” Rationality (the ability to use reason) – and not the possession of a thumb – is the essential human characteristic that gives rise to all the rest, applies to all humans, and differentiates man from all other animals (Rand, 1990: 63–65). Therefore, it must be the differentia of the concept “man” (while “animal” is the genus).

Eventually, we learn to integrate our knowledge into the most abstract and condensed form: principles. Principles are the broadest generalizations (and depend on valid concepts) that help guide our thinking and action for goal achievement (Binswanger, 2014: 305). For example, a principle of furniture design – the form must follow function – guides us in achieving the goal of functional furniture. A principle of a business strategy – a firm must achieve lower costs than its competitors or differentiate its products – helps achieve the goal of above-average profitability.

Logically formed and organized concepts and principles (the products of reasoning) facilitate efficacious intuiting: automatized recall of vast knowledge needed for effective decision making and action. For example, an entrepreneur who conceptualizes the requirements of a successful venture and forms the associated principles by adhering to facts and using logic is able to efficaciously recall and apply knowledge filed under such concepts and principles. An entrepreneur who fails to reason (to form valid, integrated concepts and principles) will intuit to retrieve jumbled, random associations – as opposed to integrated knowledge of reality – which are not helpful for decision making (cf. Woiceshyn, 2009).

Fortunately, valid reasoning can be learned, as Rand has demonstrated and the example of the CEO John Allison illustrates.

REASONING AND INTUITING: JOHN ALLISON'S DEVELOPMENT AND APPLICATION OF PRINCIPLES

John Allison is the retired CEO and Chairman of BB&T, a Fortune 500 bank, whose assets grew more than 33-fold during his 20-year tenure (1989–2008). He also led BB&T through the 2008 financial crisis as one of the strongest financial institutions in the United States. The bank's Annual Report 2008 acknowledged: "It's hard to overstate [John Allison's] influence on BB&T's success." Analysts' reports frequently referred to Allison's role in his bank's stellar performance, and the external awards he received towards the end of his tenure at BB&T also signaled this.

This example is based on my research interview with John Allison after he had retired and on another extensive interview (Hicks, 2011). Materials written by Allison, including the *BB&T Philosophy* (values and principles), as well as his published talks, provided additional data, as did Allison's live speeches that I had the opportunity to hear on a few occasions.

Reasoning and Intuiting Based On Valid, Consistent Principles – to Achieve Values

Starting early in his career, and perhaps unusually for a banker, John Allison studied philosophy as a hobby, specifically Ayn Rand's works but also Aristotle and other philosophers. He wanted to identify and integrate his core values and to correct any contradictions. The core values and the principles to achieve them identified by Allison were: fact-based decision making and objective reasoning, independent thinking, productivity, honesty, integrity, justice (fairness), and pride (see Allison, 2014). He saw (based on his study of philosophy and on observation of facts) the core values and the principles as hierarchically integrated through a chain of abstractions, grounded in observed facts.

Consistent with Rand's philosophy of Objectivism, Allison's set of values and principles rested on specific facts: the requirements of achieving a long-term purpose (a happy life for individuals, long-term profitability for business firms). He identified the focus on reality by using reason (fact-based, objective decision making – or rationality) as the fundamental requirement of achieving long-term goals in both personal life and in business. He then adopted rationality as his primary principle: "use reason to adhere to facts when making decisions." Allison commented on its importance:

I think most of the really bad management decisions are acts of evasion. Evasion occurs when somebody is presented with some piece of information that on some level or other they know needs to be examined. However, they don't want to examine it because it threatens something they believe about the world, or something they believe about themselves, and they literally don't hear it. (Hicks, 2011: 7)

Table 1.1 *BB&T philosophy: values and principles*

1	REALITY (FACT-BASED) The foundation of quality decision making is a careful understanding of the facts.
2	REASON (OBJECTIVITY) There is only one “natural resource” – the human mind ... We are looking for people who are committed to constantly improving their ability to reason.
3	INDEPENDENT THINKING All employees are challenged to use their individual minds to their optimum to make rational decisions. In this context, each of us is <i>responsible</i> for what we do and who we are. In addition, <i>creativity</i> is strongly encouraged and only possible with independent thought.
4	PRODUCTIVITY We are looking for people who want to create, to produce, and who are thereby committed to <i>turning their thoughts into actions</i> that improve economic well-being.
5	HONESTY Being honest is simply being consistent with reality. To be dishonest is to be in conflict with reality, which is therefore self-defeating.
6	INTEGRITY Principles (values) provide carefully thought-out concepts which will lead to our long-term success and happiness. (Integrity means acting consistently with rational principles.)
7	JUSTICE (FAIRNESS) Individuals should be evaluated and rewarded objectively (for better or worse) based on their contributions. Those who contribute the most should receive the most. ... We do not discriminate based on non-essentials such as race, sex, nationality, etc. We do discriminate based on competency, performance and character. We consciously reject egalitarianism and collectivism.
8	PRIDE Pride is the psychological reward we earn from living by our values. Each of us must perform our work in a manner as to be able to be justly proud of what we have accomplished.
9	SELF-ESTEEM (SELF-MOTIVATION) We expect our employees to earn positive self-esteem from doing their work well.
10	TEAMWORK/MUTUAL SUPPORTIVENESS While independent thought and strong personal goals are critically important, our work is accomplished within teams. ... Our work is so complex that it requires an integrated effort among many people to accomplish important tasks.
<i>Our values are held consciously and are logically consistent to fully execute on any one value, you must act consistently with all 10 values. At BB&T values are practical and important!</i>	

Source: Summarized from Allison, 1994; also discussed in-depth in Allison, 2014.

John Allison’s values and principles were also integrated in the sense of being consistent. They were all aligned to achieving a long-term purpose, which requires pursuing and practicing not just one of these values and principles but all of them. Adhering to facts by using reason means thinking independently. Using reason and thinking independently must lead to productivity – creation of material values – because we cannot achieve long-term goals merely by thinking; we must also create material values to survive and thrive. Honesty means rejecting that which is unreal, which is the flip-side of adhering to reality by reason. Integrity means pursuing values and applying principles consistently, which is the only way to reach long-term

goals. Justice means applying reason to assessing people, granting each person that which he deserves, trading value for value.

John Allison viewed integration of values and principles – grounded in facts and internal consistency – as the cornerstone of his decision-making process and of the success of his company (Allison, 2014: 28–31; Puris, 1999: 228–229). His values and principles did not contradict facts or each other and could therefore guide decision making and action to achieve a long-term purpose. These values and principles also formed the foundation of BB&T's culture. They are summarized in Table 1.1, based on the *BB&T Philosophy* booklet (Allison, 1994; an elaboration of these values can be found also in Woiceshyn, 2012).

Another key element of Allison's ability to apply principles effectively in his decision making was his development of self-awareness. This helped him ensure that his intuiting – the subconscious recall process – was consistent with his explicit reasoning:

I pursued self-awareness for years ... *helping me look at my subconscious emotional premises ... and to align those premises with rationality* [italics added]. The goal was to make my emotions reinforce what my mind would decide, instead of emotions making me make the wrong kind of decisions. (Hicks, 2011: 6–7)

Allison concluded by describing how he and his employees benefited from the alignment of reasoning and intuiting:

I spent a ton of work, first, getting my personal values clear so that I had an integrated philosophy. I had integrity in systems sense, and my beliefs were consistent. ... Secondly, trying to help myself think better, not in a raise-your-IQ sense, but eliminating the blind spots in my thinking process and helping the people who work for me do the same and learn from each other in that process. Those things had very high paybacks. (Hicks, 2011: 6–7)

Using Principles to Facilitate Intuiting for Faster, Efficacious Decisions

How does the thinking process work once valid principles (such as those in the *BB&T Philosophy*) have been identified? As Rand argues in her writings on psycho-epistemology (1971, 1999, 2001) – and as we can observe through introspection – principles, once understood, are stored in an individual's subconscious memory files and recalled when the individual encounters a decision situation: to solve a problem, to hire a competent employee, to improve customer service, for example. Some of my earlier empirical research also provides evidence of this, describing the automatized process of the conscious mind retrieving principles from the subconscious and then applying them explicitly to a concrete decision situation, so as to guide behavior for value achievement (Woiceshyn, 2009, 2011).

We can get a sense of this process of recalling and applying principles by understanding how John Allison and his executive team handled challenging decisions, to achieve long-term profitability. Ultimately, it came to recalling the principles in BB&T's philosophy and applying them to avoid the temptation to evade facts

and blindly follow competitors, and to make a rational decision instead. As Allison described: “It was about – going back to our philosophy – it was about making objective decisions based on facts, not what you wish was so.”

Allison and his executive team’s decision to avoid the subprime mortgages and other risky investments that contributed to the 2008 financial crisis illustrates the process of reasoning (applying principles) and intuiting. In a Letter to the Shareholders, John wrote: “We have avoided many of the problems experienced by our competitors, in large part because of the industry’s ill-advised rush into subprime mortgages and more risky investment inconsistent with our philosophy and values” (BB&T, 2007: 6). In an interview he elaborated:

We knew the market was frothy. We also had always run a sound bank. But primarily it was because of our culture, our value system. Our value system enabled us to avoid a lot of the problems that other banks got into, because they weren’t consistent with our long-term beliefs. And because of that, we weren’t doing a lot of the things some other people were doing. So, that’s really what protected us. (Hicks, 2011: 13)

Another principle that guided Allison and his executive team with this decision, besides *adhering to reality through reason (rationality)* and *independent thinking*, was the *trader principle*, an aspect of *justice*. Reflecting on the commitment to the bank’s mission to help clients achieve economic success and financial security, he said:

We believe in the trader principle: value for value. We have a moral obligation to help you [client] be successful, and I expect to make a profit doing it. I’ll tell you that. I’m not going to do it for free, but I’m never going to make a decision that I consciously think is going to be bad for my clients ... even if I can make a profit in the short term, because it will always come back to haunt me. (Hicks, 2011: 14)

John Allison and his executive management team also applied the principle of *integrity*. They stuck to the bank’s principles even under pressure from analysts and institutional shareholders to follow the competitors’ lead and make investments that were rewarding in the short term but destructive in the long term. The record of BB&T’s performance during Allison’s tenure as CEO shows the pay-off of identifying valid principles and using them in decision making to achieve long-term goals (values).

From CEO’s Reasoning and Intuiting to Company-wide Effective Decision Making

It is one thing for the CEO to integrate his values and principles for effective reasoning and intuiting in his decision making, but how did he help others in his organization to do the same? In other words, how was intuiting exploited across the organization to promote better – long-term performance-enhancing – decisions? BB&T’s Executive Management Team employed four primary practices to ensure others were able to reason logically and intuit effectively as well: (1) selection (and

de-selection) of people, (2) training, (3) communication, and (4) incentive compensation and evaluation.

Employees were carefully selected based on cultural fit; many were attracted to BB&T because of its values and philosophy. BB&T used psychological profiles based on their strongest performers and structured interviews to select the best candidates who identified with the company's values and adopted them as guides to behavior (Allison, 2009). Those who violated the company's values, including high performers, were terminated. John commented: "I always thought if we tolerated a person violating our values, what's the message it sends? We actually haven't had that many people leave for violations. But I think because we always acted consistently with our values, our employees lived our culture" (Hicks, 2011: 8). Another indicator of employees agreeing with the bank's philosophy was its low employee turnover compared to competitors (BB&T, 2006).

The influence of John Allison on reasoning and intuiting at BB&T started well before his tenure as CEO. Every management-level employee completed a training program originally designed by John in the 1970s. All management trainees read Rand's *Atlas Shrugged* (1957) and were told that the novel's basic philosophical principles are the foundation of BB&T's philosophy. Allison commented that the philosophy was taught to everyone who went through the training program over many years. The philosophy was built into all of the bank's training programs, extending to the staff of the firms BB&T acquired. It was discussed and lived by the management who acted consistently with the principles (Hicks, 2011: 8).

An important part of management training was developing self-awareness. After John Allison had participated in a seminar on self-awareness, BB&T bought the company that had delivered it. This company became the operator of the BB&T Leadership Institute, which offered self-awareness seminars as part of the bank's senior management training. Through these seminars, all senior managers were trained to identify their subconscious emotional beliefs that could interfere with rational decision making. John commented: "The goal was to get the filters down to help people be more rational. This was not anything magical, but it was powerful" (Hicks, 2011: 6–7).

Communicating the company philosophy was also important. One of the most critical internal groups who needed to agree with the philosophy was the Executive Management Team. Its members had all joined BB&T about the same time in the 1970s and had gone through the same management development program. They were charged with driving the bank's strategy since the early 1980s. John commented on his and the team's role:

I think my role was understanding and communicating the philosophy and putting together a team that believed in the philosophy but had very different sets of ways of thinking. And one of the temptations of CEOs to get a bunch of people to think like you do is, I think, a suicide... So everybody on the Executive Management Team, they were highly confident, they were proven, experienced people who agreed deeply with the philosophy but disagreed in lots of other areas and thought differently. (Woiceshyn, 2014)

To help communicate BB&T's vision, mission, purpose and values to all employees, Allison wrote the *BB&T Philosophy* booklet after the largest merger in the bank's history that doubled the number of employees. All employees were required to read the *BB&T Philosophy*, and John gave presentations to them about it, with concrete illustrations about how it applied to real-world situations.

Finally, BB&T's incentive compensation system supported the application of BB&T's values and principles. Employees were compensated based on their living the values and principles and the high achievement that ensued. They were evaluated every six months based on their adherence to the values and principles (BB&T, 2004).

John Allison assessed his role in helping others in his organization to apply principles in their decision making:

... the unique thing I think I was able to do was make our philosophy very explicit and kind of work through what it meant ... If we are going to make a decision based on facts, what does that mean? Like "rationality," what does that mean? Does that mean we'll always be able to analyze all the facts and do the exact right thing? No. But there's a process we are going to go through ... We are not going to make decisions on emotionalism, we're not going to have internal politics ... that's not rational. (Woiceshyn, 2014)

The premise of the BB&T philosophy, according to John Allison, was that the company's competitive advantage lies in the minds of the employees. In his view, to deliver value to clients and economic return to shareholders, employees needed to adhere to facts and use reason, think independently, be productive, act with integrity, honesty, justice, and pride. In other words, employees needed to reason and intuit effectively. Therefore, much emphasis at BB&T was put on "human systems": communicating clearly and honestly, explaining the bank's philosophy, training the staff to do their jobs well, decentralizing the structure to give employees autonomy to make decisions when dealing with clients, treating employees fairly, and compensating them justly. These human systems were driven by part of the company mission: "creating a place where our employees can learn, grow and be fulfilled in their work."

This was an environment where all employees were trained to reason based on principles first, and then allowed significant autonomy to make decisions by relying on intuiting – automatized, subconscious recall of the shared rational principles and applying them in concrete decision situations to achieve the bank's values. Arguably, such an interplay of reasoning and intuiting yielded fast, efficacious decisions, which contributed to a high level of both customer and employee satisfaction, and to excellent financial performance for the bank.

DISCUSSION AND CONCLUSION

Most research views intuiting and reasoning as alternative processes (Akinci & Sadler-Smith, 2012) that we volitionally activate, depending on context (e.g., brainstorming for new product ideas versus rational calculations of return on investment).

Rand (1971, 1999, 2001) argued that both are constant components of thinking: reasoning (by the conscious mind) guides intuiting (by the subconscious) that, in turn, provides stored mental content for further reasoning. Each depends on the other. Only if the conscious mind integrates knowledge – concepts and principles – logically, can the subconscious store it accordingly, and therefore also retrieve and apply it easily and rapidly when needed to make decisions. This conceptualization of reasoning and intuiting makes their relationship clear. It also explains explicitly that “patterns” in memory (the term used by researchers of expert intuition (Kahneman & Klein, 2009: 516)) are the person’s knowledge, held either as integrated concepts and principles at the one end of the spectrum, or as random associations at the other.

Calabretta et al.’s (2017) seven case studies of tensions between rationality and intuition during innovation processes that involved innovating companies and design consultants (designers) provide further evidence of the interdependent nature of rationality and intuition. For example, when these authors identify one of the steps for managing the tension between rationality and intuition – developing the outcome [innovation] through paradoxical thinking – they describe its constituent practices. One is a rational practice of structuring (and collecting) relevant information, and another is an intuitive practice of making connections. These practices are “deeply intertwined.” By structuring information, designers “create a body of knowledge from which patterns, associations, and ultimately innovative solutions can more easily emerge” (Calabretta et al., 2017: 381).

This body of design knowledge that allowed designers to create innovative solutions is akin to the body of banking knowledge combined with the BB&T’s philosophy (values and principles) that allowed the bank’s employees to find solutions for their clients’ needs efficaciously, regardless of the particular concretes of any given decision situation.

To exploit intuiting effectively, organizations must first help their members reason logically to acquire and apply knowledge, based on a rational epistemology, such as that proposed by Rand. Only by applying the principle of rationality – adhering to reality by the means of reason (observation and logic) – can an organization’s members acquire and hold valid substantive knowledge (concepts and principles) of their work. By the same method, organizations’ leaders can form guiding principles for the organization, which everyone can learn to apply, with the help of particular organizational practices.

Only when organizations’ shared values and principles are based on valid reasoning, can they guide all members to intuit effectively and make independent decisions. Such an outcome was achieved by BB&T under John Allison’s leadership through the practices described above (selection, training, communication, evaluation and incentive compensation), allowing the bank to trust employees to make fast, autonomous decisions, consistent with the company’s values and principles. This contributed to strong performance, as measured by employee and customer satisfaction and long-term growth and profitability. As shown by recent research (Calabretta et al., 2017), similar continual interplay of reasoning and intuiting occurs in other organizations as well, with positive performance outcomes (innovation).

The epistemological and psycho-epistemological arguments of Rand and the case evidence in support of continual interplay of reasoning and intuiting outlined here suggest that facilitating integrated reasoning and intuiting by all organizational members can yield factually grounded, efficacious decisions and significant organizational benefits and is therefore worth exploring.

NOTE

1. Rand defines epistemology as “a science devoted to the discovery of the proper methods of acquiring and validating knowledge” (Rand, 1990: 36).

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