

Shedding Light on Mediators' Decision-Making

Conscious & Unconscious Mental Processing Determining Experts' Automatic Intuitive Decisions

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Abstract

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In efforts to provide better clarity about and to improve mediators' performance and the quality of their decisions during the mediation process, I review the conscious and unconscious mental activities underpinning their judgments. Special attention is given to decisions that are automatic and intuitive, which are believed to dominate the process of decision-making in complex, fast-paced and dynamic conditions such as the mediation context. I challenge the prevailing assumption that decision accuracy is impaired by rapid decision speed, and propose the conditions in which fast automatic decisions could be more controllable and skillful. My proposition integrates the role of complex domain schema, explicit and implicit learning, knowledge acquisition processes and the interplay between conscious and unconscious subsystems for yielding skillful automatic judgments. The article culminates with highlighting the importance of continuous engagement in repetitive learning through reflective endeavor for developing mediation expertise.

INTRODUCTION

Making decisions is central to any human activity, and a pertinent component of mediators' performance. *Decision-making* is choosing one pathway over others based on conscious and unconscious evaluation of possible outcomes. In this article I review literature on the cognitive aspects of human judgments to shed light on mediators' decision-making, behavioral patterns and performance. Decision-making has its origins in multiple information-processing systems that operate unconsciously and are heavily dependent on tacit learning. Contrary to what many believe, there is growing evidence that decision-making is a process managed predominantly by unconscious mental activities (Bodenhausen & Todd, 2010; Dijksterhuis, Bos, Nordgren, & van Baaren, 2006; Dijksterhuis & Aarts, 2010; Wilson, 2002).

Considering the dynamic, fast-paced context of mediation and the likelihood of mediators' automaticity in the process of making decisions, I explore the roots of automatic judgments with an emphasis on *intuition*--a type of unconscious automatic response, and its relation to conscious processes. To appreciate the quality of automatic decisions, I explore key cognitive processes including the formation of experts' *schema*, the implicit and explicit dimensions of learning and information processing as well as the importance of gaining conscious self-insight into our adaptive unconscious. I also challenge a prevailing assumption that decision effectiveness is impaired by fast automatic decision speed (Dane & Pratt, 2007). The question whether mediators could shape the quality of their automatic intuitive judgments is at the center of this article. I propose the cognitive and environmental conditions for *quality automatic judgments*, and conclude with the possibility of becoming conscious of the unconscious through reflective processing.

BACKGROUND

The Complexity of Conflict and the Demanding Role of the Mediator

Conflict is a complex phenomenon in which multiple psychological, emotional and cognitive activities intertwine in an intensive, uncertain and dynamic process (Peleg-Baker, 2012a; 2012b; 2012c; 2014). Often, long-lasting conflicts develop complex nonlinear dynamics yet systematic. Negative emotions and behaviors might steadily linger despite significant volatility and uncertainty on other levels. Such concurrent processes are challenging in trying to effectively manage toward a constructive route of conflict. Additionally, mediators are required to make judgments regarding ostensibly opposing goals (Peleg-Baker, 2012a; 2012b; 2012c). For instance, while gradually encouraging parties' engagement and building trust, mediators often push for an agreement. Also, while it is essential for mediators to maintain polite discourse, they also wish to promote genuine communication, which frequently involves tension and invites disagreements. Another example is when, together with promoting parties' autonomy, mediators also attempt to support informative decisions by supplying the parties with a *voice of reality*. In leading a complex unfolding process, laden with social-emotional concerns, mediators make fast, often automatic decisions about when and how to intervene. Parties' intense emotions and painful feelings and high expectations about the mediation process calls for skillful decisions (Peleg-Baker, 2012d; Peleg-Baker, 2014).

How Do Mediators Cope with Complexity?

One-way mediators cope with the dynamic reality of conflicts is relying on mediation *styles* such as *Facilitative*, *Integrative*, *Problem Solving*, *Transformative*, and *Narrative* (e.g., Kolb, 1983; Riskin, 1997; Silbey & Merry, 1986; Bush & Folger, 1994; Winslade & Monk, 2006). They serve mediators as explicit 'top down' guiding principles by focusing their attention and providing guidance and confidence in demanding and stressful conflictual situations (Peleg-Baker, 2012a; 2012b; 2012c; Peleg-Baker, 2012d; Peleg-Baker, Kressel & Cohen, 2012). Yet, it has been observed that mediators with the same formal training in certain styles express themselves in a markedly different behavior (Kressel, Henderson, Reich, & Cohen, 2012; Peleg-Baker, et al., 2012). Consequently, a major question is whether style is reliable as a sole indicator for understanding and improving mediators' decision-making? Though

styles shape the ways mediators make judgments, they provide only partial description of the processes underlying them. Mediation styles are still theoretically developing and their explaining power is limited. No single style can account for the uniqueness of the unfolding management of a dynamic conflict process and parties' variance. Styles are unavoidably filtered and operated via each mediator's unique cognition and much of the mediator's intervention judgments inevitably occurs at an implicit, non-conscious level.

Cognition is Key for understanding mediators' judgments

Kelly's (1955) theory of personality and Heider's (1958) theory of social perception maintain that implicit theories people hold about the self, others and the social context focus their attention and guide them in processing and understanding information. People's assumptions are grounded in their experience and support the generation of meaning, goals, attitudes, judgments and interpretations of events (Dweck, 1996). Rowan (1989) suggested that perceptions occur at a subconscious level and are ordered and integrated before being retained in long-term memory. Even if these impressions cannot be frequently verbalized, they guide our actions. Coleman's (2003) study on people's implicit theories about power in organizations demonstrates how differences in implicit ideals and beliefs about power affect decisions on power sharing with their colleagues and employees.

In a series of lab studies, mediation processes and mediators' performance were examined (Kressel, et al., 2012; Peleg-Baker, et al., 2012). One observation concluded that mediators' views and beliefs in such issues as the perception of conflict or the feasibility of change significantly impact their performance. For example, a mediator who did not believe in the option of changing her faulty habits of reacting impatiently or "talking too much" as she admitted, stated that the parties should "take me as I am or leave it." She did not consider the possibility of changing her negative habits even though she fully recognized the negative effects of her behavior on her ability to accomplish all mediation goals. Another mediator exhibited intolerance and boredom in the case assigned to him of two roommates who were struggling over relational issues. In an interview with him after the mediation he led, he

expressed his view of the insignificance of the case: "If there was more at stake...I can remember doing mediations of accountants who were running the risk of breaking up their firm... I remember doing mediation of two women who had a tennis instruction business. They really needed each other in the conduct of that business ... so there was more to salvage than roommates have." It became apparent early in the mediation process that he was distant and uncaring as if he is analytically and intellectually bored. Accordingly, his mediation fell short of achieving his own pre-mediation goals: avoiding browbeating and intolerant attitude. His lack of interest in what he deemed as superficial and trivial, combined with his perception of the disputants as immature, produced undesired behavior. As both these cases demonstrate, mediators' cognition is a key for understanding their performance.

Literature on mediation is abundant but diffused (Kressel, 2006; Peleg-Baker, 2012a; 2012c; 2014). Some topics such as the advantages of using mediation, contextual influences on the mediation process, and mediation styles, strategies and tactics, are aptly covered; Others are less so. Traditionally, mediation researchers and practitioners have been focusing on tangible objective outcomes, e.g., mutually satisfactory solutions or agreement making. Practice is often not derived from evidence-based inquiry, and social psychological research has greatly declined in the last decade. Still, a comprehensive conceptual framework for illuminating the complex nature of mediators' decision-making and its underpinning cognitive operations and mental processing, is lacking (Peleg-Baker, 2012a; 2012c; 2014).

Research on cognitive processing suggests that in fast-paced and dynamic processes as in the context of mediation, judgments are likely to be highly automatic (Bodenhausen & Todd, 2010; Deutsch & Strack, 2010; Evans, 2011; Simon, 1992). As such, they are prone to systematic biases and flaws, particularly when dealing with unfamiliar cases (Kahneman & Klein, 2009; Nisbett & Ross, 1980; Tversky & Kahneman, 1974; Kahneman, Slovic & Tversky, 1982). Furthermore, the theoretical and practical emphasis on tangible goals in the field is likely to influence mediators' automatic focus on agreement making. Mediation is an emerging profession with practitioners from different disciplines. Typically as their secondary profession, mediators might lack the expertise and sufficient psychological background to effectively address social-psychological aspects involved in the process. The *naïve*

mediator might not be fully aware of subtle human dynamics, psychological biases as well as the automaticity of his or her decisions (Peleg-Baker, 2012a; Peleg-Baker, 2012d; Peleg-Baker, 2014). Finally, though repetitive effortful learning over long periods of time is recommended for developing domain expertise, mediation training is typically limited to basic 40 hours of certificate program (Hedeen, Raines & Barton, 2010). As a result, mediation expertise is not yet well established (Peleg-Baker, 2012a; Peleg-Baker, 2012c; Peleg-Baker, 2012d).

COGNITIVE ASPECTS OF DECISION-MAKING

How could Mediator's Decision-Making be better Understood?

As presented, explicit styles are inevitably filtered and operated through mediators' cognition. Their cognition plays a key role in determining what they notice, attend to and remember (Peleg-Baker, 2012a; Peleg-Baker, 2012d). Much of mediator's decision-making occurs at an implicit, unconscious level. In the context of the dynamic and fast process of mediation, decisions are not only unconsciously but also automatically executed. The decision of when and how to intervene is made in a spontaneous, almost impulsive, fashion. Mediators sense what is most suitable in a certain moment and immediately act upon it.

Cognitive *schema* is significant for understanding experts' decisions. Schema is a tacitly organized pattern of thought or behavior that represents "knowledge about a concept or type of stimulus, including its attributes and the relations among those attributes" (Fiske & Taylor, 1991). Past experience is summarized and stored in organized representational structures that shape subsequent perceptions and memories. Schemas are most often characterized as higher-level abstractions (Carlston, 2010). They are efficient as they guide people's automatic adaptive behavior but could also be ineffective as they are prone to systematic biases and flaws especially in uncertain and stressful situations (e.g., Nisbett & Ross, 1980; Tversky & Kahneman, 1974). Furthermore, as known from the abundant literature on expertise, experts are often unaware of their implicit cognitive model (Ericsson et al., 2006/ 2007; Klein, 1998; Simon, 1992). Literature on implicit social cognition supports the notion that a multitude of sub-processes is a part of most behaviors without the individual being necessary cognizant or in control of their

operation (Deutsch & Strack, 2010). Multiple aspects of behavior become apparent when they are in conflict (Strack & Deutsch, 2007) such as doing something unintentionally out of habit (Verplanken & Aarts, 1999) or discriminating a minority group member without explicitly expressing biased attitudes (Payne, 2001). Similarly, mediators' explicit statements in self-reports about what they wish to accomplish in mediation and their professional style significantly differ from their observed actual behavior (Charkoudian, Ritis, Buck & Wilson, 2009; Kressel, et al., 2012; Peleg-Baker, et al., 2012). Gaps have been repeatedly detected between mediators' explicit statements and their actual behavior. Mediators frequently express their desire to attain several goals and present themselves as stylistically *eclectic* in self-reports. However, when observed, they behave with less flexibility and manage to accomplish only a limited number of goals. Behavioral conflicts point at people's schema (Deutsch & Strack, 2010). Disassociations between intent and actual behavior are also at the core of problematic behaviors such as social discrimination (Payne, 2001), addiction (Deutsch & Strack, 2006), and overspending (e.g., Strack et. al., 2006). Implicit social cognition draws from the understanding that attitudes, beliefs, and stereotypes may have impact on behavior, which sometimes oppose intentions (e.g., Deutsch & Strack, 2006; Wilson, Lindsey & Schooler, 2000). Thus, revealing mediators' schema could shed light on the construction and quality of mediators' decisions. Largely implicit, mediators' schema reflects their ideas and beliefs about the nature of human interactions, the conflict phenomenon, the mediation process and the role of the mediator. To further comprehend mediators' unconscious automatic judgments during mediation, next I move on to review and synthesize the cognitive processes and systems underpinning mediators' decisions, opening with the cognitive foundation of automatic reactions.

What are the Foundations of Automatic Decision?

The idea that human behavior is not the product of a single process, but rather, it reflects an interaction of different cognitive subsystems, has been a persistent. It is claimed that there are two types of systems underlying human thinking, one is fast, implicit and automatic and the other slow and deliberative (Chaiken & Trope, 1999; Fiske & Neuberg, 1990; Evans, 2003/ 2010; Evans & Frankish, 2009). Philosophers and psychologists have considered and debated over this idea for a long time, and cognitive scientists are increasingly in agreement about this duality.

System 1 is the old, evolutionary system, which is shared with other species (Epstein, 1994; Reber, 1992). It includes multiple autonomous subsystems that incorporate both innate elements and domain-specific knowledge attained through learning mechanisms. It is perceived as automatic, involuntary, unconscious and relatively effortless in learning and processing information. It is distinguished from *System 2* operation, which is evolutionarily recent and distinctively human. *System 2 activity* enables abstract reasoning, but it is limited by the working memory capacity. It is a controlled, voluntary, conscious and effortful. Thus, the dual system operation is a simplified yet pertinent underlying framework for understanding the formation and quality of decisions. It provides a broad conceptual framework within which mediator's automatic reactions can be located and better understood, most conveniently in relations to the other deliberate rational operation. Bargh and Chartrand (1999) contend that a large portion of daily life is determined by *system 1* operations. Those processes, which are rapid, effortless, and often fairly effective, usefully manage our tendencies and preferences. Mediation scholars similarly argue that mediators, who regularly function in a fast paced environment, are continuously required to make instantaneous and intuitive judgments (e.g., Cooley, 1996; Hyman, 2009; 2011). Hyman (2011, p.1) describes: "Mediators' sense of what is appropriate is shaped by experience, training, and self-reflection. But, for the most part, what they do moment by moment depends more on automatic reactions than on conscious choices that are carefully weighed and selected." Mediators' decisions are often automatic and are made without explicit awareness to the inducing cues and without an explicit assessment of their validity.

In the following sections I explore the nature of automatic intuitive judgments and their relationship with prior experience, the importance of forming domain complex schema and the contribution of conscious deliberative operations to quality automatic judgments. I conclude with the value of self-reflection for quality decisions. While exploring these processes, I challenge the prevailing assumption often made by decision theorists that decision accuracy is compromised by fast decision speed.

IS DECISION ACCURACY IMPAIRED BY FAST AND AUTOMATIC INTUITIVE JUDGMENTS?

The assumption that the majority of the decisions made in today's fast-paced, dynamic world are determined by *system 1* operations has been prevalent among psychologists and other decision science scholars. Fast intuitive judgments are the bulk of decisions made by managers in general, and mediators in particular. Thus, the questions whether fast automatic decisions are poorer than thoughtful ones and whether they could be skillful become significant. To address this question, I proceed with the concept of intuition, a type of the fast automatic human judgments, which is associated with system 1 processes (e.g., Epstein, 2002, Kahneman, 2003; Kahneman & Klein, 2009) within the framework of dual operation.

Intuition as a Central Component of Automatic Processes

Intuition has been a vague notion associated with extensive amount of confusion. In western cultures, intuition has been viewed as a mysterious phenomenon (Ferguson, 1999)--an inaccurate and often flawed instinct that guides our actions. It is observed as inferior to rational and logical thinking. Freud joked that it is "an illusion to expect anything from intuition" (Jones, 1953, p. 327). The processes underpinning intuition used to be perceived as not valuable, and were not considered valid and sufficiently important to worth investigation. Typically, people are not taught how intuition works and are strongly encouraged to maximize cognitive thoughtful efforts and to "think before acting" as if their intuition would lead them to a disaster. Abundant body of work has shown that automatic intuitive judgment systematically ignores significant information and often results in biases (e.g., Nisbett & Ross, 1980; Tversky & Kahneman, 1974), and that judgments are improved when people cautiously reason (E.G., Denes-Raj & Epstein, 1994; Fiske & Neuberg, 1990; Janis & Mann, 1977; Tracy & Robins, 2008; Wilson & Brekke, 1994). Literature on the function of consciousness indicate four leading purposes, which enable mental achievements in complex circumstances (e.g., Hoffmann & Wilson, 2010 and for review Dehaene & Naccache, 2001): active information maintenance, flexible combination of information (including reasoning), generation of goal oriented behavior, and generation of the sense of "self". On the other hand, one could question whether the power of conscious thinking has been overvalued considering the significant amount of mental processing taken place unconsciously. The value of

unconscious processing is further discussed toward the end of this article in section on the relative value of unconscious operation and its interplay with conscious processing.

Realizing that automatic intuitive judgments are indispensable components of our decision-making competency, we better shed more light on how they are constructed, function and interact with conscious processing, and whether one could have any control over their quality. The latter aspect is crucial for improving mediators' expertise through training and learning programs, and increasing mediators' capability to become cognitively skilled. Often, literature on cognitive processes does not distinguish between the use of intuition and its quality, but in the following sections, I introduce the concept of intuition, the way it is cognitively formed and accordingly, suggest the necessary conditions for skilled automatic intuitive judgments.

What is Intuition?

Bruner (1960) described intuition as unconscious process in which people cannot provide an adequate account of the process they went through to arrive at their intuitive response and even about what aspects of the problem they were responding to. He suggested that intuitive thinking lies on familiarity with a domain of knowledge, and contrasted it with analytic thinking, which takes place with relatively full awareness of the information and operations involved and usually can be adequately described by the person. This dichotomous definition is one of the first hints to the cognitive dual process models (Chaiken & Trope, 1999; Fiske & Neuberg, 1990; Evans, 2003; Evans & Frankish, 2009). Bruner's definition entails both the attraction and the risk of intuition. Intuition is immediately available to turn a cue to an action and generate judgment. This process has been demonstrated in areas such as first language acquisition (e.g., Aslin, Saffran & Newport, 1998) and expertise such as mastering chess (e.g., Chase & Simon, 1973; DeGroot, 1965; Simon 1992). In contrast, the lack of awareness to the information contributing to intuitive judgments makes it impossible to explain and justify one's judgment. Similarly to Bruner's, Simon (1992) emphasized the speed and lack of awareness to the reasoning behind intuition. He added the concept of *recognition*, a central element in intuitive judgment-- "...cue has given the expert access to information stored in memory, and the information provides

the answer. Intuition is nothing more and nothing less than recognition" (p.154). Agor (1989) hypothesized that intuition is a process of immediate recognition of information stored in huge number of chunks and patterns in the long-term memory that are retrieved unconsciously. The recognition aspect refers to the matching component of intuition in which environmental stimuli is associatively matched with a deeply unconscious knowledge.

It is suggested that in making the match, individuals unconsciously map environmental stimuli onto their *cognitive frameworks*. There are two types of cognitive frameworks the intuition relies on. The first is relatively simple and termed *heuristics* (Kahneman, Slovic, & Tversky, 1982; Tversky & Kahneman, 1983), which are mental shortcuts that reduce the complex task of assessing probabilities and predicting values to simpler judgmental operations (Tversky & Kahneman, 1974). Scholars, who focus on this framework, look at intuition as inferior to logical decision-making operations. The other type intuition relies on is more complex cognitive framework in which large body of domain knowledge is stored in long-term memory but it is still unconsciously accessed and retrieved. Research on this type focuses on experts' complex knowledge, which enables them not only to respond quickly, but accurately as well, based on a large and sophisticated body of accumulated knowledge (Dreyfus & Dreyfus, 1986; Klein, 1998, 2003; Simon, 1992, 1996). Thus, the capacity to unconsciously infer an associative connection between a stimuli and underlying cognitive framework can be under certain circumstances more beneficial over conscious deliberate decision-making, which may focus attention on more accessible but less important aspects (more about it in the section on the relative value of unconscious operation and its interplay with conscious processing). In any case, the recognition component is essential for demystifying intuition by suggesting that the phenomenon relies on actual experience.

The formation and quality of experts' intuition is studied by two groups of scholars: the *heuristics and biases scholars* (HB) who have focused on learning experts' schema in laboratory context and by the *naturalistic decision-making* (NDM) researchers who have conducted their investigations in the field. HB researchers are doubtful about expertise and have consistently shown intuitive errors in the judgments of experts in laboratory settings (e.g., Tversky &

Kahneman, 1974; Kahneman, Slovic, & Tversky, 1982; Tversky & Kahneman, 1983). The origin of their approach is found in Meehl's review (1954) of approximately 20 studies that compared the accuracy of predictions made by human judges (mostly clinical psychologists) and those anticipated by simple statistical models. Though the algorithms were based on information clinicians hold, human predictions were less accurate than statistical predictions in almost every case. The relative weakness of human judgments was explained by Meehl (1954/ 1973) with systematic errors, such as consistent failure to consider existing information and apply elementary statistical reasoning. Inconsistency is a major flaw of informal judgment: human judges frequently arrive at different conclusions even when presented the same information on separated cases. The *bootstrapping effect* powerfully illustrates the effect of inconsistency on the validity of judgments (Goldberg, 1970; Karelaia & Hogarth, 2008). In Goldberg's study (1970), bootstrap models were almost always more accurate than the judges they modeled. It is suggested that human judgments are overloaded to a level that significantly reduces their validity. In the first study of the HB tradition (Tversky & Kahneman, 1971), high-level methodologists and statisticians were asked questions about a sample size for different situations. They reached inaccurate conclusions and made inferior choices when they followed their intuitions, failing to employ principles they were familiar with. Their following studies confirmed poor intuitions by comparing experts' performance with performance by formal models or rational rules. Although HB scholars agree that the intuitive judgments of some professionals are remarkably skilled, they focus on the faulty judgments of other professionals.

Conversely, NDM researchers (Klein, 1998; 2003) focus on the successes of experts' intuition by conducting field investigations. Their approach is originated in early research conducted by DeGroot (1946) and later by Chase and Simon (1973), which showed that chess grand-masters had exceptional ability to instantly match most effective moves with a vast repertoire of 50,000 to 100,000 patterns and dynamics of complex positions. NDM researchers examine the ways in which experts such as firefighters or nurses, make complex, high-risked and ill-structured decisions under conditions of time pressure, where the opportunity to engage in deliberative examination is severely limited (Kahneman & Klein, 2009). Despite their prospects, they have repeatedly found that experts usually produce

a single option. The option relies on a wide range of patterns experts have accumulated through years of experience. The single option is evaluated. If the option seems appropriate, they would apply it and if they detect deficiencies, they would modify it or turn to the next most reasonable possibility and so on. NDM scholars named it the *Recognition Primed Decision* (RPD) strategy. A main purpose of NDM is to elucidate intuition by detecting the cues experts use to reach their decisions, when they involve tacit knowledge, and experts are unable to explain them (Kahneman & Klein, 2009). They use *cognitive task analysis* (CTA) methods to investigate the cues and strategies experts use (Crandal, Klein, & Hoffman, 2006). These methods are composed of semi-structured interview techniques to identify the cues and contextual factors affecting judgments. Though experts are not expected to accurately rationalize why they made decisions (Nisbett & Wilson, 1977), CTA methods enable making inferences about their decision-making process. While both approaches try to shed light on experts' intuition and decision-making, HB investigators are looking for experts' intuitive flaws when compared with computer models, and NDM scholars explore the processes involved in experts' judgments in search for the critical cues that are recognized by experts but invisible to novices.

A final characteristic of intuition is the affective component. Intuition is often accompanied by feelings such as excitement, harmony (Dane & Pratt, 2007) and the *feelings of knowing* (Shirley & Langan-Fox, 1996). Traditionally, intuition has been considered as affective because it was perceived as the opposite of rationality. While intuition represents the *heart*, logic thinking reflects the *brain*. Affect is viewed as an essential input for intuition by managers, organizational, cognitive and neurological psychology scholars (Epstein & Pacini, 1999; Lieberman, 2000). Neuroscience research has suggested a link between intuition and affect through activation of the basal ganglia. Both intuition and emotional appraisals appear to arise through similar neurological pathways (Lieberman, 2000). Lieberman defines intuition as "subjective experience of a mostly unconscious process that is fast, a-logical, and inaccessible to consciousness that, dependent on exposure to the domain or problem space, is capable of accurately extracting probabilistic contingencies." (Lieberman, 2000 p.111). Taken together, we rely on intuition to interpret the world and instantly generate a response and it is especially useful in situations that require fast decisions. In

conclusion, intuition is characterized by four components: unconscious thought, fast paced, an associative match and an affective reaction.

What are the Sources of Automatic Unconscious Judgments?

Since unconscious reactions appear involuntary, one could assume they are uncontrollable. On the other hand, it has been shown that automatic judgments do not arbitrarily happen. They are grounded in specific experiences, which in turn determine their quality. Automatic judgments are shaped by the conditions in which those specific experiences are formed. To find further support for this possibility I move on to examine three interrelated mental operations: the explicit and implicit sources of automatic reactions, the role of conscious operations, and the formation of complex experts' schema.

Explicit and Implicit Sources of Automatic Reactions

While some automatic reactions to environmental cues are rather universal and innate, such as emotional reactions, cheating and defecting and disgusting behavior (for review, see Bodenhausen & Todd, 2010), many are learned and conscious processes are crucial in shaping them. It is confirmed, for example, by research on skill acquisition (e.g., Dreyfus & Dreyfus, 1986; Reber, 1989). Anderson (1982) posed that acquiring a skill begins with explicit processing that ends with procedural knowledge, which often becomes automatic. Automatic reaction starts with a deliberate process (Charness, Tuffiash, Krampe, Reingold, & Vasyukova, 2005), and the more repeated it is, the more components of the decision-making turn highly automated. Hogarth (2001) views initial explicit processing as the originator of high quality intuitive judgments. He also advocates augmenting analysis of problems by, for example, explicitly considering the impact of one's feelings as data input for decision-making.

Further support of the potential of deliberate cognitive processes in determining automatic responses are found in research on altering automatic racial biases and stereotypes previously detected with the *Implicit Association*

Test (IAT) by thinking about counter stereotypic models of racial groups or reading counter stereotypical short

Driscoll (1992) showed that initial intentional strengthening of automatic responses through having participants' rehearsing attitudes about upcoming stimuli, make their decision easier (reflected in diastolic blood pressure) and of a higher quality. Kawakami, Dovidio, & van Kamp (2005) documented considerable reduction in incidents of sex discrimination in hiring decisions as a result of training, negating stereotypic associations and encouraging counter stereotypic associations. These studies confirm that people can develop some control over 'system 1' responses through intentional 'system 2' cognitive practices.

The Role of Conscious Thinking

Consciousness is defined as a cognitive activity characterized by awareness,¹ attention, information gathering, and reflection (Louis, & Sutton, 1991). Two major forms of consciousness have been proposed (Baumeister & Masicampo, 2010). The first is a *phenomenal awareness*, which is considered the lower level of consciousness, describing feelings, sensations and orienting to the present moment. The second is the human ability to reason, reflect on one's experiences, and have a sense of self, especially one that extends beyond the current moment. The latter form critically shapes human decisions and automatic reactions. It is suggested that consciousness's is essential for flexibly processing and monitoring information the brain already has and for indirectly contributing to the control of behavior (Baumeister & Masicampo, 2010; Baumeister, et. al., 2011). Human are capable of repeatedly replay their experiences, simulate possibilities, build complex sequences, flexibly combine information, imagine their future and increase the chance of accomplishing their goals through intentional simulations and goal oriented activities. Hence, the unique advantage of human consciousness lies beyond the immediate and direct action. Rather than acting and learning at the moment as animals habitually do, human consciousness supports learning from past experiences and continuously develops them, reconstructs and reshapes decisions, stimulates different meanings of thoughts, connects with others while learning and sharing ideas, and generates and corrects future behaviors and

¹ Consciousness." Merriam-Webster. www.merriamwebster.com/dictionary/consciousness

decisions options. Evidence for conscious contribution on behavior is robust, though, often as proposed, indirect and delayed, not fully controlling behavior and contingent upon interplay with unconscious processes (see review at Baumeister, et. al., 2011). Conscious thinking through simulation or mental practice of specific actions affects whether and how that action will be performed later. Causality between intentions and behavior is more likely to be attained by having specific plans "If X happens, then I will do Y" (Gollwitzer, 1999). Awareness of a link between an anticipated cue (X) and a desired behavior (Y) causes the behavior to be executed automatically (Brandstatter, Lengfelder, & Gollwitzer, 2001). Consciousness may not be required for or may even impede the initiation and performance of immediate actions (Baumeister, 1984). Yet, it may be essential as a space where action plans can be planed, revised, modified and corrected in response to a constantly changing environment (Bargh, 2005; Dehaene & Naccache, 2001). Paradoxically, it appears that a major purpose of conscious processing is to minimize the necessity for itself in future activity through using learned knowledge and skills automatically.

Discussing the importance of learning for developing complex schemas, which underlie quality intuitive judgments, Dane & Pratt (2007) find both learning processes explicit and implicit to be necessary. As for explicit learning, research suggests three major features of effective practice: duration, repetition, and feedback. Expertise literature indicates a ten-year period of intense preparation for achieving expertise in a domain (e.g., Ericsson, Krampe, & Tesch-Romer, 1993; Ericsson & Charness, 1994; Simon & Chase, 1973). However, time is necessary but insufficient for developing domain complex schemas. *Deliberate practice* with repetition and improvement through specific feedback is necessary in developing the capability to perform as an expert (e.g., Ericsson & Charness, 1994; Ericsson & Lehmann, 1996). Complex schemas could also develop through implicit learning. Implicit learning refers to processes in which one unconsciously acquires knowledge about the pattern underlying a complex stimulus environment (e.g., Reber, 1989/1992; Seger, 1994; Stadler & Frensch, 1998). Not only are individuals unaware of the learning, which takes place, but also, it is suggested that implicit knowledge is stored differently in the brain. For example, knowledge acquired through implicit learning will be retained in amnesia even when explicit knowledge is

lost (Seger, 1994). Thus, implicit learning may involve dissimilar process of knowledge acquisition and storage. Both implicit learning and intuition have been linked to the unconscious processing system. Reber (1989) emphasizes the role of implicit learning in developing complex cognitive structures that are essential for effective intuitive judgments.

Domain Complex Schema as a Source of Automatic Judgments

As it becomes apparent, intuitive automatic reactions do not occur in a cognitive vacuum. Learning and experience establish the substances under which intuition operates. Learning and intuition are inseparable- intuitions represent learned behavior. Intuitive reaction pertains to how previously learned information is accessed and used. In other words, learning processes are the input to intuition and they can determine its quality. Dane & Pratt (2007) suggest that domain-relevant schemas formulated through both, explicit and implicit learning processes, determine the effectiveness of intuitive decision-making. Expert's domain knowledge is reflected in one's schema, which may be complex and contain ample domain knowledge. It is argued that schemas that are relatively simple and contain low domain knowledge are likely to result in heuristics (Tversky & Kahneman, 1974). While heuristics are often useful in uncertain situations, they may also lead to systematic errors. It is not claimed that intuitions that arise in heuristics are always wrong, but that they are less reliable than intuitions that are rooted in specific experiences. Heuristics based and other simple cognitive frameworks are likely to lead to inaccurate, low quality intuitive judgments because they tend to be 'simple' and may be inadequate to process complex environmental stimuli. Research on the limitations of heuristics and stereotypes approach suggests that the complexity of schema should match environmental complexity in order to be effective (Weick, 1995). Taken together, key determinant of quality automatic judgment is the level of schema's complexity. Schemas, which are complex and contain high level of domain knowledge, are more likely to produce quality intuition in a complex environment.

A noteworthy observation is experts' tendency to be self-overconfident. Despite lacking adequate domain knowledge individuals may experience self-overconfidence of their own ability to make accurate judgments (Kruger & Dunning, 1999). Consequently, they have a higher tendency to apply simple schemas across various situations in different

domains, not necessarily in their area of expertise. *Pseudo-experts* as Kahnman labels them, may experience an illusion of validity: overconfidence in dealing with problems in which they have little or no skill (Kahnman & Klein, 2009). Some experts such as nurses, physicians, and auditors have *fractionated expertise*. They may have genuine expertise in certain aspects or activities but not in others. Actually, many professionals, in most domains, have to handle situations that they have not had an opportunity to master yet. Physicians, for instance, occasionally encounter diagnostic problems, which are totally new to them. Financial analysts, as another example, may be skilled at evaluating the probability of a firm commercial success, but their expertise does not include the judgment of the stock price of the same firm. These experts are skilled in diagnosing certain situations but not others. Contrary to chess masters, who are less likely to encounter completely new challenges, *fractionated professionals*, who know how to use their knowledge for some purposes, are likely to use the same knowledge for other purposes, which leads to illusion of validity. (Kahnman & Klein, 2009). Fractionation of expertise is a source of overconfidence, and it is difficult to determine the boundaries of these professionals' true expertise. An example for fractionated professionals in mediation may be lawyers and judges who may know a great deal about the legal aspects of a dispute, court jurisdiction and juridical procedures but little about latent psychological biases, motives and barriers, human subtleties, and relational complexities involved in the heat of a conflictual process. Though lawyers and judges might have low understanding of these social psychological processes, they may have strong subjective confidence in their knowledge. Mario Cuomo, who served as mediator in the Mets- Madoff settlement, concluded at the end of the mediation process: "What you do in mediation is recite the realities. "You don't have to be brilliant. It's called common sense."² The ample experience lawyers and judges have in certain aspects of handling disputes in the court may lead them to overconfidence in regard to managing complex social psychological aspects of mediation. When reacting intuitively, genuine as well as pseudo experts, connect environmental stimuli with an information system that is encoded and organized into patterns in their schemas (Simon, 1996). The mechanisms that produce inaccurate intuitions will only operate in the absence of expertise. If people have a skilled response to a task, they will

² http://www.nytimes.com/2012/03/20/sports/baseball/mets-owners-pay-162-million-to-settle-madoff-suit.html?_r=1&scp=2&sq=mario%20cuomo&st=cse

apply it. But even in the absence of skill, they will react intuitively. The difficulty is that people have no way to know where their intuitions come from, and whether it is skilled or not. Additionally, Prietula and Simon (1989) claim that the expert does not necessarily examine the environment and process information any faster than the inexperienced novice. Rather, experts grasp the meaning of certain patterns without thinking about the information and match between the stimuli and their schema. When their schema is domain complex they are likely to spark effective intuitive judgments.

THE CONDITIONS FOR QUALITY AUTOMATIC DECISIONS.

Despite differences in focus and methodology, different scholars of intuitive judgments and experts' schema agree that intuitive judgments of some professionals are remarkably skilled, while judgments of others are considerably flawed (Kahneman & Klein, 2009). Inspired by Simon's recognition component of intuition, Kahneman & Klein (2009) agree on two fundamental conditions for generating skilled intuition: 1) *High-validity* environment, which provides valid cues to the nature of situation. There is no mystery in an intuitive response when an expert is in an environment under which he/ she is being continuously exposed to repeated cues that emerge on a regular basis (e.g., Hertwig, Hoffrage, & Martingnon, 1999). The intuition of an experienced nurse about a sick infant is much more reliable considering the regularity of the environment she works in, than the intuition of an experienced political analyst in a volatile and unpredictable political arena. 2) Adequate opportunities to learn and practice relevant cues and practice necessary skills. The latter condition echoes the previous discussions on the contribution of learning and conscious deliberative processes to increasing domain schema complexity and consequently improving experts' automatic reactions.

As I previously discussed, people often have no way of knowing the origin of their intuitions and whether they are faulty or skilled. There is no subjective indicator for people to separate correct intuitions from those that rely on flawed heuristics. Experts may feel high confidence about a decision but the correlation between the accuracy of their judgments and their confidence is low (Arkes, 2001; Griffin & Tversky, 1992). Subjective confidence is not a sound

indicator of judgment validity; it is frequently an outcome of an effort to reaffirm preconceived notions and maintain internal consistency rather than a quality of judgment (Einhorn & Hogarth, 1978; Kahneman & Tversky, 1973). These judgments are likely to be presented by the experts with high assertiveness and therefore be trusted by others more than they deserve to be. This concern prompted Kahneman & Klein (2009) suggestion of reliable criteria to assess the probable accuracy of an intuitive judgment--the validity of the environment in which the decision was made and the decision-maker's history of learning the rules of that environment.

The criteria for reliable intuitive judgments are highly significant in mediation as well. For gradually developing mediators' expertise and producing successful judgments, it is essential to increase mediation environment validity. It could be done through constant learning of the multiple dimensions of the mediation process, especially those related to the complex emotional and relational human dynamics entangled in conflictual circumstances. Creating adequate opportunities for repetitive learning of relevant cues and practicing necessary skills is crucial for quality automatic intuitive decisions, especially those pertaining to social-psychological goals that are relatively neglected (see more in Peleg-Baker, 2014). The ability to assess and improve the two conditions for skilled intuition entails introspective ability and self-reflection. I present this possibility and its importance in the next section after examining the relative value of unconscious operations to conscious processing.

The relative value of unconscious operation and its interplay with conscious processing

The interaction between conscious and unconscious processing is significant for quality judgments. As I described earlier, automatic decisions are typically viewed as rapid simple reactions, which do not involve immediate systematic thought. These decisions are deemed suitable for instant judgments but are also considered inaccurate, suboptimal and inferior for rational thinking. However, this conventional wisdom has been challenged in different ways as evidence to the advantages of unconscious processes started to mount. Research on *incubation* or *unconscious thought* periods, for example, demonstrates various ways in which unconscious processes may contribute to creativity and problem solving quality (Sio & Ormerod, 2009). Furthermore, similar to the incubation effects, some studies suggest that since unconscious thought has greater information-processing capacity and can be done while

conscious attention is directed elsewhere, it can be very useful for complex decisions (Dijksterhuis, et. al., 2006;

Zhong, Dijksterhuis, & Galinsky, 2008; Creswell, Bursley & Satpute, 2013). Wilson et al., (1993) concur by

maintaining that since the capacity of conscious deliberation is cognitively limited, it could restrict decision-makers' attention or even lead to placing a heavier weight on more accessible stimulus and less weight on other more critical factors, resulting in an overall lower quality of decision.

Unconscious processing has been also shown to facilitate goal-directed behavior (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trotschel, 2001). Comparing decisions' quality of distracted participants, two groups were distinguished: those who were had a goal prior to the distraction to be decided on later, and those who were not given a goal. The research found that the decision-making quality of the former group far exceeded the quality of the second (Bos, Dijksterhuis, & Baaren, 2008). Thus, it appears that the hearth of quality decision-making is attention rather than consciousness. Goal pursuit, evaluation and implicit learning are most likely not dependent on conscious thought, but they are goal-guided and require attention.

Research on the contribution of unconscious processing received criticism on methodological and theoretical grounds. In a meta-analysis, Acker (2008) found no difference in the quality of decisions between decisions made following a fixed period of deliberation, a period of unconscious thought or immediately. Furthermore, Payne, Samper, Bettman & Luce (2008) enquired whether enforcing a fixed-time of several minutes deliberation, which is the approach taken in many of these studies, as opposed to deliberation at one's own pace is a proper representation of conscious decision analysis. They found that participants in the latter condition, the self-paced conscious thought condition, always performed at least as well and sometimes better than participants in unconscious thought condition. Moreover, participants in self-paced condition always outperformed participants in a fixed time conscious thought condition despite deliberating for a considerably shorter time.

In seeking to illuminate the relative contribution of unconscious processes to quality decisions, the optimal interplay between the operations is still not fully understood as it is contingent on certain circumstances. Automatic unconscious reactions are efficient guidance for decisions. They are useful for quick and limited detection of relevant information as cues may be too demanding for the limited processing capacity of a conscious mind. Deliberate conscious thought, though might undermine decision-making in certain situations, seems to improve the quality of decision if it is done at one's own pace without enforcing it for a fixed period of time, and helpful in simpler situations. A period of incubation whether conscious or partially conscious can benefit the quality of decisions. Wallas (1926) already proposed in the beginning of the previous century that better, more creative decisions could be accomplished by the suspension of conscious thought, thereby allowing uninterrupted operation of unconscious or partially conscious processes. Hogarth (2010) expands on this notion by suggesting that, unconscious processing and intuition become an advantage when the tasks at hand are more analytically complex. In an earlier article Hogarth (2005) indicates that task complexity is an important source of error when analytic thought is used. Whereas few people make errors in simple arithmetic tasks, there is higher probability to err when solving complex problems. However, individual differences, particularly level of expertise, are an important factor. Statisticians, for example, would make fewer errors in Bayesian probability revision tasks than 'normal' subjects.

In conclusion, the conditions and the nature of the interplay between the abundant unconscious operation and the deliberate conscious processes appear to be critical for the quality of both short and long term judgments. Yet, the relationships between the two operations need to be further investigated. Future research is required for gaining a better conceptual synthesis and a sounder picture of the reality of human judgments. Suffice is to say from what is already known that a successful interplay between the two operations is crucial for making quality fast intuitive decisions in the fast-paced and uncertain context of mediation. Though the *how* and *when* to best incorporate the two systems still remain open, it is evident that the contribution of conscious thinking to quality decisions is indirect and delayed and that unconscious operations are useful for processing complex decisions. As previously discussed, the

formation of complex schema through continuous and repetitive learning of emerging cues, especially those related to complex emotional and social-psychological goals, are highly important for the quality of intuitive decisions.

BECOMING CONSCIOUS OF THE UNCONSCIOUS

Thus far I reviewed the cognitive operations underlying mediators' decision-making. A proper synergy between conscious and unconscious processing appears to be indispensable for optimal immediate as well as long-term judgments. The importance of forming complex domain schema was presented along with two fundamental conditions for assessing skilled automatic judgments. Considering these processes is imperative for improving mediators' results, particularly those related to multiple emotional and social-psychological goals, which are relatively neglected in the process of mediation.

The validity of the context in which mediation takes place is relatively low since conflict cases and parties involved are highly diverse in needs and goals, and the mediation process could be highly uncertain. Mediators can improve their skills in dealing with the multiplicity and low-validity of their working environment by on-going learning through systemically reflecting on repetitive cues, especially social and psychological ones that are often subtle and require particular knowledge and skills. Reflective processing could be highly beneficial for forming a complex schema. Yet, mediation training is limited to basic forty hours of a certificate program, and mediators are typically not engaged in a systemic learning and reflection on particular dispositions and behaviors (Hedeem, Raines, & Barton, 2010).

Studies reveal a consistent gap between mediators' explicit intentions as expressed in self-reports and actual observed performance (Charkoudian, et al., 2009; Kressel, et al., 2012; Peleg-Baker, et al., 2012). The mediators who were observed as self-reflective in lab studies seemed to hold relatively complex schema and had more coherence between implicit tendencies and explicit behavior (Kressel, et al., 2012; Peleg-Baker, et al., 2012).

Reflective or introspective ability is a form of conscious process that could be highly beneficial for augmenting mediators' awareness to their futile and ineffective automatic reactions. Introspection and reflection are used

interchangeably here, depending upon the research domain. Cognitive scientists perceive introspection as a broad term, which can be supported by different processes and activities such as meditation, self-reflection, consultation, coaching and psychotherapy (Wilson, 2002). In this paper, when discussing reflection, I refer to the circumstances in which people reflect on their own dispositions or behaviors when attention is directed towards one's own phenomenal sensations and experiences in an attempt to form a self-referential proposition about these experiences. Reflection is a complex inference process in which mental experiences may become consciously accessible and incorporated into a coherent judgment involving the self (Hofmann & Wilson, 2010). Reflection promotes various tasks such as increasing the ability of learning from one's own experience; changing undesired behavior (Gordon, Smith and Hullfish, 1961); integrating new concepts and experiences into existing knowledge structures (Gray, 2007), and minimizing implicit-explicit inconsistencies.

Reflection has been generally well established as a critical element of experiential learning (Dewey, 1938; Schön, 1983), and it gained recognition in conflict resolution and mediation field as well (Lang & Taylor, 2000; Marsick, Sauquet, & Yorks, 2006; McGuire & Inlow, 2005). Its benefits for improving practice are also acknowledged in disparate domains such as organizational management (Edwards, 1998; Daudelin, 1996; Weick, 1995), medicine (Aukes, Geertsma, Cohen-Schotanus, Zwierstra, & Slaets, 2007; Mamede, Schmidt, & Rikers, 2006; Mamede, et.al., 2010; Mamede, et.al., 2012; Mann, Gordon, & MacLeod, 2009), education and psychology (Mayer, 2004; Moreno & Mayer, 2005; Ohlsson, 1996). Although it is perceived as a vague concept in different ways, studies recommend reflection to be systematic, to be used in formulating and testing hypotheses, and to be practiced with a facilitator and in groups (Peleg-Baker, 2014).

The mechanisms in which reflection minimizes flaws in diagnosis and improves clinical rational are also not yet clear but Mamede et al., in a series of studies (2006; 2010; 2012), showed that reflection indeed reduces diagnostic errors and improves clinical reasoning (a deeper review of these studies in Peleg-Baker, 2012a; Peleg-Baker, 2014).

Similarly to mediators, clinicians operate under time constraints and consequently, their reasoning is highly automatic

and usually takes place early in the clinical encounter. As such, it is prone to biases and errors particularly in complex, unfamiliar or new cases. Following an elaborate cognitive processing, the overall performance of clinicians and the quality of illness scripts (mental representations), improved (Mamede et al., 2006; 2010; 2012). These studies also point at the contribution of reflection to schema's complexity. It is proposed that reflection may support expanding as well as restructuring schema, which is likely to result in competent diagnostic and automatic decisions. As has been demonstrated in this paper, competent expertise performance stems from domain complex schema. In lab studies that examined the work of mediators, greater cognitive and behavioral flexibility and reflective capacity were detected in mediators with a complex schema (Peleg-Baker, 2012a; 2012d; 2014). These mediators adapted more flexibly to situations, and their performance seemed to relate to higher competency and better intervention quality than those with simple schema.

The plethora of evidence of mental activities that take place outside of conscious led psychologists and cognitive scientists to grapple with the fascinating question of the extent to which people actually know their implicit mental life. Asked more specifically, to what level are people capable of consciously reaching their own unconscious? Two streams of cognitive science research have been focusing on this query by probing people's introspective capability (Hofmann & Wilson, 2010). The first underlined the limited nature of human introspective ability (see review in Nisbett & Wilson 1977). Though introspection is a constructive process for improving future decisions, people have limited access to the underlying causes of their behavior. When asked to provide an explanation for their behavior, respondents typically reacted with lay theories about themselves, habitual explanations and personal stories while being unaware of influential aspects in their stimulus environment. People are often unable to identify the true reasoning behind their behaviors, while failing to detect that the self-explanation theories they use are distorted and partial (Nisbett & Wilson 1977). The second line of research relates to the Implicit-explicit consistency: the level of fit between people's explicit self-reports and their actual scores on implicit measures of their beliefs, motives and self-concepts. Advances in the assessment of implicit representations enable a better exploration of the degree of correspondence between implicit and explicit cognition.

Hofmann & Wilson (2010) suggest that the relationship between implicit and explicit representations is conditional rather than fixed. It is consistent with the idea that access to consciousness is the result of competition between multiple modular processes depending on events' characteristics such as their bottom-up strength of activation and top-down level of attention (Hofmann & Wilson, 2010). Under certain conditions, however, implicit processing outputs may enter consciousness and shape people's explicit representations. It is claimed that conscious is most needed when an organism encounters novel situations (Hofmann & Wilson, 2010). Conscious processing may nevertheless be bypassed by powerful, often rigid automatic processing, resulting in efficient but potentially biased and ineffective behavior. Still, even though people are often oblivious to their inner world, self-insight into the unconscious processes can be achieved, albeit under certain circumstances and in a gradual manner. Hofmann & Wilson (Ibid, 2010) use the global workspace model (e.g., Baars 1997; Dehaene & Naccache, 2001) as a background for demonstrating possible routes by which relatively accurate self-inferences about the unconscious may be feasible. Knowing the unconscious requires global availability of information to a range of modular systems that otherwise would not exchange each other's contents. Information that entered the global workspace gains the advantage of being actively represented for a longer duration, so that it can be flexibly used for transformations and the creation and execution of new and altered action plans. The authors introduce the conditions for introspecting into the unconscious by which fairly accurate explicit representations of unconscious dispositions may be developed. Although people cannot directly observe their implicit associations, they may be able to infer valid self-insights through experiencing certain outcomes, particularly inner phenomenal experiences or behavioral cues. Thus, the accuracy of self-inference depends on the quality of three sequential stages: 1) the existence of valid phenomenal cues for implicit dispositions such as gut feelings, emotions, sense of familiarity or self-observed non-verbal behavior; 2) the detection of these cues, and 3) making usage of them. Introspection can go awry in each stage due to cues' insufficient strength or lack of attention given to them. Most importantly, chronic self-views and false lay theories may significantly reduce the accuracy of self-inferences. Hofmann, Gschwendner, & Schmitt (2009) add that although people have blind spots when it comes to detecting their own implicit dispositions in relation to their behavior, observers of those behaviors

may make more accurate inferences from behavioral cues about people's implicit dispositions. For example, individuals may hold chronic self-schemas, which might bias their perception and identification of their own behavior (Markus, 1977), leading to inaccurate self-observation. But, observers who are free of such impediments would make more accurate and unbiased interpretations.

In summation, hindrances to introspection can be overcome by: a) the existence, detection and usage of valid internal phenomenal cues or self-observed non-verbal behavior, and b) learning to view oneself through others (Wilson, 2002; Wilson & Dunn, 2004). While chronic self-views and false lay theories reduce the accuracy of self-inferences, if unconscious processes do become consciously accessible, many sequel processes such as transformations, corrections, and better self-inferences could become feasible (Hofmann & Wilson, 2010).

Understanding the underlying mental processes is only in its infancy stage. As the interplay between conscious and unconscious processing becomes clearer, so will the conditions in which people can increase their self-knowledge about their mental operations and the quality of their judgments.

CONCLUSION

This paper aims at illuminating mediators' automatic decision-making through reviewing the mental processes underpinning automatic judgments. Its rationale emanated from the growing evidence for assuming that decision-making is a process managed predominantly by unconscious and automatic mental activity. This assumption gains further tracking when the circumstance of the complex, fast-paced and dynamic mediation environment is considered. Consequently, intuitive decisions are granted special attention as a frequent automatic response during decisions making. Much progress has been made in transforming intuition from a mysterious notion at the peripheries of science to the forefront of research. Today, the study of automatic processes including intuitive judgments has become a field in which insights from many major branches of psychology and other disciplines are integrated into promising theoretical frameworks.

I challenge the prevailing assumption that decision accuracy is impaired by rapid decision speed, and accordingly discuss the possibility that fast automatic decisions could be controllable and skillful. This option is addressed by synthesizing work on cognitive subsystems in different disciplines including cognitive psychology, decision-making, expertise, learning processes and knowledge acquisition. Fast expanding developments in social cognitive neuroscience, which were beyond the scope of this article, should further extend current understanding of the operation of unconscious automatic processes.

Essential conditions for quality automatic intuitive decisions were introduced through incorporating the importance of forming complex schema, which relies on valid domain environment and repetitive systematic learning of relevant domain cues and skills. A proper interplay between *system 1*--automatic unconscious operations, and *system 2*--deliberative conscious processes, is critical for effective fast decisions. Further research is needed for clarifying when and how these operations might optimally complement each other to generate experts' skillful automatic intuitions in the process of mediation. Paradoxically, it seems that one of the major purposes of conscious operation may be to minimize the need for its own usage in future mental activity through applying learned knowledge and skills more automatically. Bargh (2005) added that consciousness function is to be on the alert in case things go wrong when judgments are automatically executed. Accordingly, the article culminates with the significance for mediators' constant professional development to consciously reveal the unconscious through being engaged in reflective processing.

Based on Simon's (1987) assertion that effective managers do not have the luxury of choosing between analysis and intuition, it seems that genuine experts interchangeably use both types systems. They recognize when they do not know and accordingly activate their system 2. Simon (1992) described intuition as "analysis frozen into habit and the capacity for rapid response through recognition". Thus, raising awareness and being continuously and systemically engaged in self-reflection of both behavior and context where the decisions are taken, could increase competency in flexibly switching between the two types of thinking. Complex habits of mind can be established through exercising a

good fit between the two types of mental operations. Such flexibility is highly functional in today's fast changing environments. The extent to which experts become consciously aware of the underpinning of their mental activity could have tremendous influence on the quality of their professional lives.

To conclude, automatic reactions are more likely to be skillful when they rely on actual repetitive learning experience in a specific domain. When individuals engage in focused and repetitive learning over long period of time, they form domain complex schema and competencies that are likely to override the proclivity to flawed intuitive judgments. As noted by Kahneman & Klein (2009), the mechanisms that generate flawed intuitions will only be activated in the absence of skill. If mediators consistently practice a particular skill, they will apply it when needed. An expert with a complex domain schema coupled with strong skills, is more likely to automatically generate an adept intuition than an imperfect judgment.

An important implication for mediators is to become life-long reflective practitioners. Establishing learning practices and nurturing environments conducive to learning will provide mediators with the opportunity to learn through reflecting on their experiences. It would be beneficial for mediators to improve expertise through connecting with their feelings, assumptions, actions and aspects that may lie outside of their conscious. Such reflective processing will enable departure from current habitual ways of thinking to consider novel behavioral alternatives. Experts who persistently engage in reflective work inevitably develop more complex schemas, which include greater number of attributes and are also better interconnected. Such schemas are more efficient than simple ones and more prone to effectively processing complex environmental stimuli, problem solving and unfamiliar situations (elaborated discussion on the importance of systemic reflection for attaining mediation social-psychological goals is found Peleg-Baker, 2014). Hopefully, outlining the copious cognitive conscious and out of conscious mental landscape has the potential of becoming a useful conceptual framework for better understanding mediators' decision-making and the desired interplay between their conscious and unconscious operations. Finally, it is my genuine desire that this article would galvanize a discourse on the nature and curriculum of mediators' initial and on-going training, as well as action

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for increasing mediators' complex domain schema and the quality of their automatic reactions.

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