Intuition in Employee Selection: Examining the Conditions for Accurate Intuitive Hiring Decisions

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INTUITION IN EMPLOYEE SELECTION: EXAMINING THE CONDITIONS FOR ACCURATE INTUITIVE HIRING DECISIONS

by

Vinod U. Vincent

A Dissertation

Presented in Partial Fulfillment of Requirements for the Degree of Doctor of Business Administration In the Coles College of Business Kennesaw State University

Kennesaw, GA 2018
DEDICATION

To Ammi and Thaththi (my parents), Saroja and Vincent: thank you for your love and all the sacrifices you made to give us a better life and to prepare us for the future.

To my wonderful wife, Nishani: thank you for your encouragement, patience, understanding, and support. God truly blessed me with the best life partner and friend.

To my dear children, Areli and Aaron: you two are the joy of my life.
ACKNOWLEDGEMENTS

Completing this doctoral degree would not have been possible if not for the tremendous support and sacrifice of my family. I am grateful to my wife, Nishani, for her love, encouragement, advice, and patience. I thank my children for their understanding and for doing their best to give daddy some quiet time to concentrate on studies. I’m thankful for my parents who nurtured me, gave me opportunities, and pushed me to work hard and to be successful in life. I am also grateful to my sister and many other family and friends who have inspired, encouraged, and supported me throughout this process.

I am especially thankful to my dissertation committee, Dr. Neal Mero and Dr. Rebecca Guidice for their guidance and support. I truly appreciate how responsive and thorough they were in helping me complete the dissertation. I thank my reader, Dr. Stacy Campbell, for her valuable input that made my dissertation better. I also thank the faculty, global scholars, my cohort, and staff of the KSU DBA program for all their support and guidance. All of them made this journey such an enriching and memorable one. Last but not least, I want to thank my colleagues at Soliant Health and other friends in the healthcare staffing industry that assisted me with developing the material and collecting the data for my study.
ABSTRACT

INTUITION IN EMPLOYEE SELECTION: EXAMINING THE CONDITIONS FOR ACCURATE INTUITIVE HIRING DECISIONS

by

Vinod U. Vincent

In complex organizational environments, managers often rely on intuition to make decisions. Research has found intuition to be helpful when the task is complex; the decision maker is a domain expert; and when the decision environment has a high level of uncertainty, complexity, time pressure, insufficient data, and more than one reasonable solution. However, in employee selection, which is a decision environment that typically has the aforementioned characteristics that are conducive for intuition, scholars discount the usefulness of intuition in favor of more objective, analytical selection methods such as specific aptitude (e.g. sales ability) tests. A reason for the lack of academic support for intuitive hiring is that research in employee selection has not thoroughly examined contextual factors that impact an interviewer’s ability to make an accurate intuitive hiring decision (i.e., one that results in selecting the best candidate out of multiple viable options). The purpose of this study was to explore such factors. More specifically, this study examined the impact of interviewer expertise, cognitive style, and procedural accountability on the accuracy of intuitive hiring decisions when recruiting for complex jobs. The hypotheses were tested via a two-part experimental study that used expert (N = 79) and non-expert (N = 83) interviewer samples. The results demonstrate that, when recruiting for complex jobs, interviewer expertise does increase the accuracy of intuitive
hiring decisions. The findings underscore the importance of domain expertise in intuitive
decision-making and have a number of theoretical and practical implications to employee
selection and the broader field of organizational decision-making.
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CHAPTER 1: INTRODUCTION

Effective decision-making is critical to the success of an organization. Yet, a
dilemma faced by many managers is how to make effective decisions in complex,
ambiguous, and time-constrained environments as is typically found in organizational
settings today. In such environments, there is often an excessive amount of data. In
addition, due to the novelty and ambiguity of many business problems, there is seldom a
proven rational model to derive the best decision (Gigerenzer & Gaissmaier, 2011).
Therefore, and given the overwhelming amount of available information and the limited
capacity of the human brain to process that information (Simon, 1992), managers tend to
rely on their intuition when making a decision (e.g. Agor, 1986; Burke & Miller, 1999;
Miles & Sadler-Smith, 2014).

Individuals have two distinct cognitive systems for processing information and
making decisions; namely, intuition and analysis (Kahneman & Klein, 2009). Intuition is
an emotionally charged, nonconscious, automatic, and rapid cognitive process (Dane &
Pratt, 2007; Epstein, 2010; Hammond, 2010). Analysis, on the other hand, is conscious,
rationa, logical, and is a comparatively slower cognitive process than intuition (Epstein,
1994; Epstein, 2010; Hammond, 2010). Of the two systems, intuition is thought to result
in better decisions in environments where there is greater uncertainty, complexity, time
pressure, insufficient data, and multiple solution possibilities (Agor, 1986; Baldacchino,
Ucbasaran, Cabantous, & Lockett, 2015; Burke & Miller, 1999).
One environment that would seem to fit the aforementioned set of characteristics is employee selection. However, research in this area often discourages the use of intuition (Highhouse, 2008b; Highhouse & Kostek, 2013; Kausel, Culbertson, & Madrid, 2016), with scholars pointing to the biases of the intuitive process (e.g., the tendency to gravitate towards candidates who are similar to oneself). For this reason, these scholars argue that objective forms of assessment, such as cognitive ability tests, provide a more accurate evaluation of a candidate.

It is somewhat surprising that intuition is labeled ineffective for hiring decisions given its usefulness in decision-making environments that are similar to employee selection (i.e., environments that have a high-level of uncertainty, complexity, time pressure, insufficient data, and multiple solution possibilities). The current study argues that one reason for this lack of academic support likely rests in the relatively scarce number of empirical studies that have examined the role of intuition in recruitment (Miles & Sadler-Smith, 2014). As a result, research has yet to thoroughly consider contextual factors that impact an interviewer’s ability to make an accurate intuitive hiring decision. Stated differently, a negative attitude towards intuitive hiring has been generalized to the field at large without a thorough evaluation of the conditions in which intuition may, in fact, be helpful. Therefore, the purpose of this paper was to explore the conditions that impact the accuracy of an intuitive hiring decision. Accuracy, as defined in this paper, is the ability of the interviewer to select the best candidate out of multiple viable options. Relatedly, the research questions of interest in this paper are these: Can intuition lead to accurate hiring decisions; and if so, under what conditions is this more likely to occur?
One such condition assumed to be of importance in the current study is job complexity. Accordingly, a complex job is a position that has many tacit elements that leads to successful job performance (Campbell, 1984). Research has found objective and analytical methods, such as cognitive ability tests and highly structured employment interviews, to be effective when recruiting for low complexity jobs (e.g., Conway, Jako, & Goodman, 1995; Huffcutt & Arthur, 1994; Wiesner & Cronshaw, 1988). However, as job complexity increase, research finds that the effectiveness of analytical hiring methods to decrease (Huffcutt, Weekley, Wiesner, Groot, & Jones, 2001; Levashina, Hartwell, Morgeson, & Campion, 2014). As a consequence, intuition may be the more effective way to make hiring decisions for complex jobs. In fact, considering that intuition has been found to be more effective than analysis for complex tasks such as identifying counterfeit products or a place to live (e.g., Dane et al., 2012; Dijksterhuis, 2004), this paper argued that intuition is more accurate than analytical cognitive processing when hiring for complex jobs.

Interviewer expertise (i.e., prior experience recruiting for similar positions) may also impact the accuracy of an intuitive hiring decision. Prior research indicates that a decision maker’s expertise increases the accuracy of intuitive decisions for complex tasks such as those noted earlier as well as evaluating artwork or forecasting road safety (e.g., Chase & Simon, 1973a; Dane et al., 2012; Dijkstra, Pligt, & Kleef, 2013; Hammond, Hamm, Grassia, & Pearson, 1987). In comparison, there is evidence that expertise does not increase the accuracy of analytical decisions for those types of complex tasks (Dane et al., 2012). Therefore, since expertise has a positive impact on intuition and not on analysis, it is expected that when expert interviewers use intuition, they will be more
accurate than when they use analysis. Furthermore, compared to non-expert interviewers (i.e., those who do not have prior recruiting experience), this paper predicted that expert interviewers will make more accurate hiring decisions.

In addition to job complexity and interviewer expertise, another important factor that may affect the accuracy of intuition is the interviewer’s cognitive style. Cognitive style refers to an individual’s inherent tendency to use either an analytical or an intuitive style of information processing and decision-making (Brigham, De Castro, & Shepherd, 2007). In employee selection, cognitive style of interviewers has been found to impact the preference for intuitive or analytical hiring methods (Miles & Sadler-Smith, 2014). Moreover, a mismatch between an individual’s cognitive style and the actual decision-making approach used to solve a problem is argued to have a detrimental effect (Hodgkinson & Clark, 2007). Drawing from this research and other studies discussed in the literature review, the current study expected that interviewers whose cognitive style match the employee selection method (i.e., intuitive versus analytical) will be more accurate than those whose cognitive style does not match the employee selection method.

Another shortcoming of existing intuition research is that it tends to focus on conditions that are conducive to intuitive decision-making, with no attention and limited understanding of common organizational factors that could disrupt an expert’s ability to make an accurate intuitive decision. One such factor is procedural accountability. Procedural accountability is the extent to which an individual is held accountable for the procedure used in making a decision (Pitesa & Thau, 2013; Siegel-Jacobs & Yates, 1996). Thus, the next research question this paper explores is: how does procedural accountability impact the accuracy of an expert’s intuitive judgment?
Based on the extant research on accountability, when individuals are required to account for their decisions, research suggests that they are then inclined to use a more deliberate cognitive information processing strategy (Lerner & Tetlock, 1999; Tetlock, 1983). Research has, in fact, found support for a relationship between procedural accountability and analytical thinking (e.g., Doney & Armstrong, 1996). Analytical thinking, in turn, may disrupt the intuitive process (Baumeister, 1984; Wilson & Schooler, 1991). This disruption of the intuitive process can negatively affect decision quality when the decision maker is an expert (e.g., Beilock, Bertenthal, McCoy, & Carr, 2004; Beilock, Carr, McMahon, & Starkes, 2002; Gray, 2004; Melcher & Schooler, 2004; Wimmers, Schmidt, Verkoeijen, & Van De Wiel, 2005). Therefore, when recruiting for complex jobs, the current study predicted that the accuracy of expert interviewers’ intuitive decisions will be lower when they are held accountable for the hiring procedure.

In summary, this paper assessed the impact of interviewer expertise, cognitive style, and procedural accountability on the accuracy of intuitive hiring decisions when recruiting for complex jobs. This assessment occurred via a two-part experimental study that assigned participants to intuition, analysis, and procedural accountability conditions. Participants included an expert and non-expert sample of interviewers. In each part of the study, participants performed the task of employee selection for a complex job. Participants assumed the role of an interviewer, reviewed recordings of 10 pairs of candidate interviews, and for each pair, decided which one of the two candidate responses was better. The accuracy of hiring decisions was measured by calculating the number of times the participants’ selected the best candidate response.
This paper makes several contributions to the literature. First, by identifying conditions in which intuition can lead to accurate hiring decisions, the paper challenges the existing notion among scholars that intuition is always less accurate than decisions derived through more objective methods such as cognitive ability tests (e.g., Highhouse, 2008b; Highhouse & Kostek, 2013). As proposed by Evans (2010), we need to identify when it is appropriate to rely on intuition and when it is not. Second, by testing whether the findings of human cognitive processing (i.e., that intuition can be effective when the decision maker has domain expertise and when the task is complex) holds true in an employee selection context, this study extends the research on intuition. Third, since we have a limited understanding of factors that could disrupt expert intuition in an organizational setting, by empirically investigating the impact of procedural accountability on expert intuition, this study attempted to narrow that gap while, at the same time, advancing our knowledge of the role of accountability.

From a practitioner perspective, it will be extremely helpful to identify the circumstances in which an expert interviewer should be allowed some leeway to use their intuitive judgment in employee selection. This would be especially important for complex jobs as these positions may have a significant influence on firm performance. Therefore, the study makes a contribution to employee selection by enabling practitioners to identify conditions in which it may be acceptable to allow an interviewer to use their expert intuition over and above analytical selection methods.

Finally, by empirically examining the role of intuition in employee selection, this study expands our knowledge of when intuition can be useful in a real-world, organizational decision-making environment. The study underscores the importance of
contextual factors in determining the effectiveness of intuition in managerial decision-making. By doing so, it lays the foundation for future research to further explore such organizational factors that may impact intuition.
Intuition

Intuition is an emotionally charged, nonconscious, automatic, and rapid cognitive process (Dane & Pratt, 2007; Epstein, 2010; Hammond 2010). The concept of intuition has intrigued management and psychology scholars for decades. Chester Barnard (1938), one of the first management scholars to emphasize the role of intuition in managerial decision-making, identified intuition as a rapid, non-logical, and complex decision-making process. Intuition occurs outside of consciousness and therefore, cannot be expressed using words (Barnard, 1938) or understood through conscious evaluation (Jung, 1921). Intuition is particularly useful when a solution is seemingly impossible through logical reasoning. In such a situation, intuition unconsciously and automatically works towards finding a resolution (Jung, 1921).

Expanding on the role of intuition in decision-making, Herbert Simon (1957) concluded that due to the overwhelming amount of available information in real-world situations and the limited capacity of the human brain to process that information, individuals tend to rely on intuition. He called this phenomenon bounded rationality. The underlying assumption of bounded rationality is that because of information processing deficiencies of the mind, there are limits on the ability of human beings to make optimal, or even satisfactory, decisions in complex environments (Simon, 1992).
Heuristics-and-Biases versus Naturalistic Decision-making

Based on Simon’s (1957) argument, intuition is a default method to make decisions in complex decision-making environments. What Simon did not elaborate on, however, was the effectiveness of this form of decision-making. Insights into this topic can be found in Kahneman and Tversky’s (1973; 1983) seminal work on heuristics and biases, which portrays intuition as flawed since intuitive judgments violate the statistical rules of prediction. Heuristics-and-biases are the decision rules, mental mechanisms, and subjective opinions used by individuals when making decisions (Busenitz & Barney, 1997). Based on their influential research, the causes for the deficiencies of intuition are now attributed to one of three forms of heuristics: (1) representativeness – similarities with prior situations; (2) availability – what comes easily to mind; and (3) anchoring – what comes to mind first (Akinci & Sadler-Smith, 2012).

Diverging from the heuristics-and-biases view and offering a more positive view of intuition, the naturalistic-decision-making-framework emerged in the late 1980s (Lipshitz, Klein, Orasanu, & Salas, 2001). The naturalistic-decision-making view highlights the usefulness of intuition by focusing on the role of expert intuition (Klein, Calderwood, & Clinton-Cirocco, 1986; Klein, Calderwood, & Macgregor, 1989; Klein, 1993). According to this view, in complex real-world settings (see Table 1 for characteristics), analytical techniques are not always feasible or effective. For instance, it is difficult to account for ambiguity, uncertainty, and missing data when applying analytical methods (Klein & Klinger, 1991). In these types of settings, due to extensive experience in the decision-making domain, an expert is instead able to quickly recognize the correct course of action without much deliberation (Klein et al., 1988).
Advocates of the heuristics-and-biases approach accept the existence of skill and experience but focus on the errors of intuitive judgment (Kahneman & Klein, 2009). Heuristics-and-biases researchers believe that the source of intuition is merely heuristic [i.e., use of cognitive shortcuts without effort or analytical reasoning (Epstein, 2010)] and does not draw from skill or experience (Kahneman & Klein, 2009). In contrast, proponents of the naturalistic-decision-making view understand that individuals make mistakes but focus on the extraordinary outcomes attained through the successful intuitive decisions made by experts. Both groups agree that intuitive judgments originate in the unconscious and are automatic and effortless. However, the naturalistic-decision-making researchers believe that effective intuitive judgments are derived from an individual’s skill and experience in the decision-making domain.

Table 1

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<td>1. Ill-defined goals and ill-structured tasks</td>
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<td>2. Uncertainty, ambiguity, and missing data</td>
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<td>3. Shifting and competing goals</td>
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<td>4. Dynamic and continually changing conditions</td>
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<td>5. Action-feedback loops (real-time reactions to changed conditions)</td>
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<td>6. Time stress</td>
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<td>7. High stakes</td>
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<td>8. Multiple players</td>
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<td>9. Organizational goals and norms</td>
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Adapted from Klein and Klinger (1991)
Intuition versus Guessing, Instinct, and Insight

A significant shortcoming of the earlier research on intuition is the lack of a clear definition of what intuition is (Dane & Pratt, 2007). More recently, scholars have attempted to clarify intuition by differentiating it from similar constructs such as guessing, instinct, and insight. The only similarity between intuition and guessing is its speed. Other than speed, guessing is vastly different from intuition, as it does not involve the nonconscious utilization of complex mental models. In addition, guessing lacks the inherent conviction that is evident in an intuitive decision (Dane & Pratt, 2007). Instincts refer to innate reflex actions that are biologically instigated rather than derived through nonconscious cognitive information processing (e.g., Hodgkinson, Sadler-Smith, Burke, Claxton, & Sparrow, 2009). In contrast, insights are an unexpected solution to a problem that springs to mind typically after a lengthy incubation period (Hodgkinson et al., 2009a). Therefore, unlike intuition, which is a rapid and nonconscious process, insights typically follow deliberate, analytical thinking (Dane & Pratt, 2007). In fact, intuition can precede insight by way of a feeling of knowing that guides the individual towards the ultimate decision (Hodgkinson et al., 2009a).

Types of Intuition

Scholars have also attempted to identify different facets of intuition (e.g., Dane & Pratt, 2009; Sadler-Smith & Burke-Smalley, 2015). The prevalent types include: (1) expert intuition (Baylor, 2001) (2) social intuition (Ambady, 2010), (3) moral intuition (Sonenshein, 2007), and (4) creative intuition (Eling, Griffin, & Langerak, 2014). Expert intuition refers to an intuitive decision based on an individual’s expertise in that particular domain. This type is also called “problem-solving intuition” or “intuitive
The premise of expert intuition is that individuals who have a tremendous amount of expertise in a specific domain, given a problem within the same domain, are able to automatically identify complex patterns and provide quick, effortless, and accurate responses. However, expert intuition is domain specific. An expert in one domain may not be able to make an accurate intuitive decision in a vastly different domain (Dane & Pratt, 2007).

Social intuition, also referred to as “mind-reading”, enables individuals to quickly and automatically evaluate and identify another person’s motivations and intentions. This is done through the nonconscious processing of verbal and non-verbal cues. Social intuitions are judgments and may not necessarily be accurate. In addition, social intuition can be significantly influenced by individual factors such as fears, biases, prejudices, and wishful thinking (Sadler-Smith & Burke-Smalley, 2015). Social intuition is particularly relevant to situations that involve interpersonal interactions such as employee selection (Miles & Sadler-Smith, 2014).

Moral intuition is a fast, non-deliberate, and emotionally charged cognitive process (Weaver, Reynolds, & Brown, 2014) that is associated with how individuals react to ethical dilemmas. Individuals make moral decisions intuitively (i.e., quickly and automatically) and then search for evidence to rationalize their initial reaction (Gigerenzer, 2008; Sadler-Smith & Burke-Smalley, 2015). Finally, creative intuition is a non-rational process and involves the synthesizing of disparate elements to form a novel creation (Dane & Pratt, 2009). Individuals may be able to improve creativity through the re-creation of those environments where they have experienced intuition (Burke &
Miller, 1999). Furthermore, intuition always precedes creativity, invention, and innovation (Sadler-Smith & Burke-Smalley, 2015).

Intuition is a “Fuzzy Construct”

As discussed in the foregoing section, research from management and psychology is not short of attempts to explain what intuition is and how it impacts the human decision-making process. In fact, more recently the study of intuition has gained considerable interest in both industry and academia. Even though the extant literature relating to the topic has broadened our knowledge of this phenomenon called intuition, it has not necessarily deepened and clarified our understanding of what intuition is, how it works, and how it can be used more effectively. There is still a certain amount of confusion surrounding the concept of intuition, which has hindered the advancement of the topic.

One of the main causes for the confusion surrounding intuition is the diverse definitions of what intuition is (Dane & Pratt, 2007; Hammond et al., 1987). As noted by Epstein (2010), not only do scholars disagree about what intuition is, they sometimes even contradict their own arguments. As a result, intuition is viewed as a fuzzy construct with limited scientific value as the definitions of intuition do not clearly express the operation of intuition (Epstein, 2010). The confusion is not because most scholars have completely opposing views of what intuition is. Instead, the problem is that the different definitions tend to focus on different aspects of intuition. Therefore, there is a fragmented notion about what intuition really means.
In spite of the diverse definitions of intuition, across the literature, four underlying characteristics emerge as central tenets of the intuitive process: (1) intuition operates beyond consciousness (i.e., it is a nonconscious process), (2) it involves making holistic associations, (3) it is fast, and (4) it is affectively charged (i.e., tied to emotion) (Dane & Pratt, 2007). The following paragraphs elaborate on each of the four characteristics and culminate with a definition of intuition.

**Intuition is a nonconscious process.** Shapiro and Spence (1997) defined intuition as “a nonconscious, holistic processing mode in which judgments are made with no awareness of the rules of knowledge used for inference and which can feel right, despite one’s inability to articulate the reason” (p. 64). Unlike a rational decision-making process where the decision maker consciously and deliberately follows a logical pattern to derive a solution (Hogarth, 2002); intuition is a nonconscious and a non-logical cognitive process. Thus, the intuitive process “involves a sense of knowing without knowing how one knows” (Epstein, 2010 p. 296). The decision maker knows the decision but is unable to articulate how the decision was derived.

**Intuition makes holistic associations.** Holistic association is a process where a specific situation triggers a nonconscious association of thoughts and patterns that are stored in an individual’s memory. This association of information is the result of past experiences that are held in mental maps or schemas within the individual’s brain (Sadler-Smith & Shefy, 2004). Simon (1992) eloquently captures this holistic cognitive process with his definition of intuition, which stated, “the situation has provided a cue: This cue has given the expert access to information stored in memory, and the information provides the answer.” (p. 155).
Intuition is fast. The speed of an intuitive response, a characteristic that was even observed by the pioneering management scholars of intuition (e.g., Barnard, 1938), is a facet of intuition that consistently appears in most scholarly work relating to intuition (e.g., Khatri & Ng, 2000; Hammond et al., 1987). For instance, Kahneman (2003) defined intuition as “thoughts and preferences that come to mind quickly and without much reflection” (p. 697). Practitioners view this aspect of intuition as a benefit as it leads to quicker decisions (Burke & Miller, 1999). Most scholars agree that, compared to analytical decision-making, intuition is a speedy process (Dane & Pratt, 2007).

Intuition is affectively charged. Intuition is firmly interwoven with the decision maker’s emotion (Burke & Miller, 1999; Shapiro & Spence, 1997). As such, emotion is a central component in intuitive decision-making. Unlike rational analysis, which is often associated with the “head”, intuition is considered to be intrinsically connected to the “heart” (i.e., emotion) (Dane & Pratt, 2007) which has prompted some scholars to call intuition as “gut feelings” and “gut instincts” (e.g., Shapiro & Spence, 1997). Field research findings support the interplay between intuition and emotion. For example, forty percent of the professionals interviewed by Burke and Miller (1999) stated that intuition is based on an individual’s feelings or emotions.

Combining the aforementioned characteristics of intuition (i.e., nonconscious, holistic, rapid, and affectively charged), Dane and Pratt (2007) defined intuition as “affectively charged judgments that arise through rapid, nonconscious, and holistic associations” (p. 40). Since this definition aptly captures the key attributes of intuition in a concise manner, it is adopted in the present study.
Unitary versus Dual Process View of Intuition

As we further explore the concept of intuition, it is important to distinguish between the two prevailing views on cognitive information processing. One set of scholars adopt a unitary view by arguing that intuition and analysis are opposite ends of a single continuum (e.g., Allinson & Hayes, 1996; Baylor, 1997; Hammond et al., 1987; Simon, 1992). On one end of the spectrum is pure intuition where the decision is unjustifiable, inexpressible, and fast. On the other end is pure analysis where the decision is justifiable, expressible, and slow. Typically, a human judgment would fall somewhere along the continuum depending on the inherent cognitive decision style of the individual (i.e., intuitive versus analytic) as well as the properties of the task (e.g., prior experience with the same or similar task) (Hammond, 2010).

Another set of scholars embrace a dual-process view of information processing (e.g., Epstein et al., 1996; Evans, 2010; Hodgkinson, Sadler-Smith, Sinclair, & Ashkanasy, 2009). This view is grounded in cognitive-experiential self-theory (Epstein, 1994); a theory that describes people as having two information processing systems, an experiential system [also referred to as system 1 (Kahneman, 2003), X system (Healey, Vouri, & Hodgkinson, 2015), and type 1 process (Evans, 2010)] and a rational system [also referred to as system 2 (Kahneman, 2003), C system (Healey et al., 2015), and type 2 process (Evans, 2010)]. The experiential system, which is driven by emotion, is automatic and is responsible for non-analytical processes such as intuition (Epstein, 2010). In contrast, the rational system is analytical and operates according to an individual’s understanding of logical inference (Epstein, 1994).
In contrast to the unitary view, according to the dual process view, intuition and analysis are distinct, independent constructs (Evans, 2010) that interact with each other both sequentially (i.e., one system followed by the other) and simultaneously (i.e., both systems competing at the same time) (Epstein, 2010). The relative dominance of one system is influenced by individual differences in cognitive style as well as situational factors such as perceived task difficulty (Epstein, 2010). Furthermore, as the two systems are independent, an individual may be high or low in one or both constructs (Pretz, 2008).

The distinction between the unitary and dual process views is important as it determines not only how a researcher views the functioning of the cognitive process but also impacts the measurement of the construct as the measuring instruments are different based on the view. Although the debate continues on which one of the two views best represent the cognitive process, the dual process view has gained prominence in management research relating to cognitive information processing (e.g., Evans, 2010; Hodgkinson & Clark, 2007). Furthermore, as noted by Sadler-Smith and Burke-Smalley (2015), the dual process view provides a coherent theoretical framework that enables researchers to gain further insight into the workings of the mind. Therefore, in this paper, the human cognitive process is viewed through the dual process perspective.

Necessary Conditions for Effective Intuitive Decision-making

The preceding section discussed the concept and operation of intuition. The focus of this section is to examine the antecedents for effective intuitive decision-making. Based on extant literature relating to the topic, three conditions appear to impact the effectiveness of intuitive decision-making: (1) domain expertise, (2) task characteristics, and (3) task environment.
Domain Expertise

Dane and Pratt (2007) argued that the effectiveness of an intuitive decision depends on the nature of the mental schemas in the mind of the individual. These schemas can either be (1) simple heuristics with minimal domain-relevant knowledge, or (2) complex cognitive maps with a high level of domain-specific information. The heuristic framework is domain independent and therefore lacks the domain sensitivity that is required to make an effective intuitive decision. Furthermore, as the simplicity of the heuristic schemas lack the capacity to process the complex information presented in a problem, using such a framework to make an intuitive decision can lead to an erroneous decision (Dane & Pratt, 2007). Thus, heuristics is a flawed and inconsistent form of judgment (Kahneman & Klein, 2009).

However, an individual may also possess highly complex, domain-relevant mental schemas (Chase & Simon, 1973b; Dane & Pratt, 2007). These mental schemas are the result of extensive domain experience and are commonly referred to as ‘expert intuition’ (Dane & Pratt, 2007). Domain expertise has been found to lead to effective intuitive decisions (e.g., Chase & Simon, 1973a; Dane et al., 2012; Dijkstra et al., 2013; Hammond et al., 1987). However, the effectiveness of an expert’s intuitive judgment is restricted to their domain of expertise (Dane & Pratt, 2007). Therefore, an individual who is an expert in one domain may not be able to make an effective intuitive decision in a completely different domain.

The origins of the school of thought supporting expert intuition can be traced back to the work of Chase and Simon (1973a; 1973b). Studying characteristics of master chess
players, Chase and Simon (1973b) found that chess grandmasters had the remarkable ability to rapidly process complex chess configurations. The authors estimated that chess masters are able to recognize 50,000 to 100,000 patterns and immediately identify the best move without much deliberation. This extraordinary ability can be credited to the well-developed, complex mental schemas that are a result of extensive practice and study of chess.

In a separate experimental study, Chase and Simon (1973a) found that, compared to novice chess players, master chess players are able to extract more information from a brief exposure to a chess position. Hence, they were better able to re-construct those positions than novice chess players. The authors concluded that the superior performance of the master chess players is due to their ability to encode the chess positions to perceptual chunks, each of which contains familiar configurations of chess pieces. Interestingly, the master’s ability to re-construct the chess positions decreased when the chess pieces were randomly placed on the board rather than in true chess positions. Therefore, it is evident that the master’s superior performance was due to the mental models developed through prior experience and not due to greater memory capacity.

In a more recent study, Dane et al. (2012) conducted two experiments to investigate the relationship between domain expertise and the effectiveness of an intuitive decision. Some participants were assigned to an intuitive condition while others were assigned to an analytical condition. Both groups were exposed to tasks (i.e., assessing the difficulty of a basketball shot and authenticating designer handbags) that is considered to be conducive to intuitive decision-making (a more elaborate discussion about task characteristics that are conducive to intuitive decision-making will follow in a subsequent
section). In both studies, it was found that the effectiveness of intuition, relative to analysis, is strengthened when the decision maker has high domain expertise, thus supporting the argument that expert intuition can lead to effective decision-making.

Task Characteristics

The characteristics of the task can have a significant impact on the effectiveness of using an intuitive versus an analytical decision-making approach. When dealing with problems that are conducive to analytical solutions, analytical decision-making may be best. But, when dealing with problems that are complex and ambiguous, intuitive decision-making may well be a better option (Denhardt & Dugan, 1978; Friedman, Howell, & Jensen, 1985; Hammond et al., 1987; Hogarth, 2002). Tasks that are conducive to analytical solutions, also referred to as intellective tasks (Dane & Pratt, 2009), are highly decomposable (Hammond et al., 1987) and can be solved using reason or mathematical formulas. In such decomposable tasks, an individual is able to analytically solve the problem and articulate or illustrate the steps taken to derive the solution. Given these characteristics, intuition may not be effective for decomposable tasks (Dane et al., 2012).

In contrast, intuition has been found to be effective for complex tasks that are not as easily decomposed (e.g., Dane et al., 2012; Dijksterhuis, 2004). Unlike decomposable tasks, these types of tasks are abstract and are difficult to solve using math and logical inference. As a result, for complex and ambiguous tasks, also referred to as non-decomposable tasks (Dane et al., 2012) and judgmental tasks (Hammond et al., 1987), it is difficult to derive a solution using a purely analytical process. Therefore, for complex tasks, intuition may be more effective as the intuitive process allows the individual to
make holistic judgments by considering the different aspects of the task that cannot be combined using an analytical method. As noted by Hodgkinson et al. (2009a), intuition is generally preferred by managers for unstructured tasks where there is no clear objective method to solve the problem.

Through five experimental studies, Dijksterhuis (2004) investigated the role of conscious (i.e., analytical reasoning) and unconscious thought (i.e., intuitive reasoning) in solving complex problems. Due to the low processing capacity of consciousness, for complex problems, which in this study was either selecting an apartment or selecting a roommate, the author hypothesized intuitive processing would be more effective than analytical processing. The results supported the hypothesis. The ineffectiveness of analytical processing may be due to the inability of the conscious mind to absorb and synthesize a large amount of information since individuals who use analytical processing pay too much attention to a limited number of attributes of the problem (Dijksterhuis, 2004). On the other hand, the effectiveness of intuition to solve complex problems may be due to the remarkable ability of the human mind to unconsciously, automatically, and rapidly process a large number of disparate pieces of information.

When discussing the impact of task complexity on the effectiveness of intuitive versus analytical decision-making, it is important to note the difference between task complexity and task difficulty. Complex tasks are difficult. However, certain tasks might be difficult, but may not necessarily be complex. The key difference is that complex tasks, in addition to being difficult, are typically ill-structured and ambiguous (Campbell, 1988). For example, solving an advanced mathematical problem might be difficult. However, it is not ambiguous since the math problem can be accurately solved if one
follows the correct mathematical procedure. In contrast, estimating future stock prices is a complex task due to the ambiguity and the complexity of the stock market.

Task Environment

Decision-making context influences the use and effectiveness of intuition (Sinclair & Ashkanasy, 2005). In dynamic and rapidly changing environments, when there are limited time and information to make a decision, and when there are conditions of ambiguity and uncertainty, individuals often have to rely on intuitive judgment (Denhardt & Dugan, 1978). According to Agor (1986), intuition may be useful under seven conditions; when there is a high level of uncertainty, there is no precedent to base the solution, variables are volatile, hard data is limited or does not provide clear direction, analytical data is insufficient, there is more than one reasonable solution, and time pressure is high. Supporting this argument, Burke and Miller (1999) noted five of their own conditions for when intuition may be helpful; when situations do not have predetermined guidelines, objective data are inaccurate, decisions need to be made quickly or unexpectedly, there is a high level of uncertainty, and clear cues are unavailable. When clear hard data are not available, one-way of dealing with the uncertainty is to rely on intuition (Sadler-Smith & Shefy, 2004).

Further insight into the impact of task environment on the effectiveness of intuition can be gleaned from the entrepreneurship literature. The cognitive style of the entrepreneur plays a pivotal role in the entrepreneurship process (Baldacchino, Ucbasaran, Cabantous, & Lockett, 2015). Compared to individuals with a preference for an analytical decision-making style, studies have found that entrepreneurs with a preference for an intuitive cognitive style are better suited for an environment where
there is greater level of uncertainty such as an entrepreneurial venture (Baldacchino et al., 2015; Kickul, Gundry, Barbosa, & Whitcanack, 2009). This difference is because, in an uncertain environment, there is often no explicit rational choice or logical step-by-step solution available. Therefore, individuals cannot rely on analytical methods alone to derive a solution and intuition may be the only viable way to make a decision. As such, some scholars recognize intuition as the core of entrepreneurial action (Dutta & Crossan, 2005).

As described above, even though there is some evidence that intuition can be effective under certain conditions (i.e., when the decision maker has domain expertise, when the task is complex, and when the task environment has certain characteristics that are conducive to intuition decision-making), there is still a scarcity of empirical research that explores the effect of intuition in complex organizational settings. Employee selection is one of those settings. Given the significance of employee selection to the success of an organization, it is important to identify if intuition can be useful in making successful hiring decisions.

Employee selection is a complex process that typically involves a high level of uncertainty, time pressure, insufficient data, and more than one reasonable solution, all of which are characteristics of an environment that may be conducive to intuitive decision-making (Agor, 1986; Burke & Miller, 1999). However, there is little applied research that examines the effect of intuition in employee selection (Highhouse & Kostek, 2013; Miles & Sadler-Smith, 2014). The following section reviews this literature.
Intuitive versus Analytical Approaches in Employee Selection

Both intuitive and analytical selection methods are used in employee selection. Intuitive hiring refers to the subjective, informal methods in which an interviewer makes a hiring decision typically derived through a traditional unstructured interview. In contrast, analytical hiring methods rely on objective techniques and decision aids such as structured interviews, standardized tests, cognitive ability tests, and personality tests. Existing research on recruitment has found analytical forms of employee selection to be more reliable and valid than unstructured interviews (Conway et al., 1995; Huffcutt & Arthur, 1994; Levashina et al., 2014; Wiesner & Cronshaw, 1988). Therefore, scholars argue that analytical employee selection methods are more effective than intuitive methods (Highhouse, 2008b; Highhouse & Kostek, 2013; Levashina et al., 2014).

The higher validity of analytical hiring methods, compared to intuitive methods, is credited to the objectivity of the analytical techniques as well as the insusceptibility of those techniques to rater biases. Highhouse (2008b) argued that intuitive hiring methods make the errors in selection ambiguous (e.g., it is difficult to judge rater biases when there are no objective tools to compare candidates). Analytical approaches, on the other hand, make those errors visible and detectable (e.g., rater biases may be more detectable when standardized procedures, such as cognitive ability tests, allow objective comparison of the candidates).

In a meta-analytic review, Grove, Zald, Lebow, Snitz, and Nelson (2000) found that, with regard to prediction of human behavior (e.g., academic performance, job success, criminal behavior), mechanical methods of combining data such as using a computer program to emulate expert judgment (i.e., an analytical method) are as good as
or better than subjective (i.e., intuitive) judgments. Therefore, since the goal of a job interview is to accurately predict human behavior, these findings provide further support for the use of analytical over intuitive hiring methods. However, it should be noted that only two out of 136 studies included in the analysis were in an employee selection context and involved predicting job success. As such, it is difficult to generalize the findings to employee selection due to the small sample size.

In spite of the academic arguments supporting the use of analytical hiring methods, most practitioners rely on intuition when making hiring decisions (Colarelli & Thompson, 2008; Diab et al., 2011; Highhouse & Kostek, 2013). Using in-depth interviews with hiring managers, Miles and Sadler-Smith (2014) attempted to understand why managers use intuition over analysis when making employee selection decisions. The authors found that some of the predominant reasons included personal preference, resource constraints, and recognition of the limitations of more structured approaches. Participants considered intuition to be derived from experience and consequently, their confidence in making an intuitive hiring decision increased with experience. Nonetheless, the participants also recognized the limitations of intuition, such as biased judgment based on stereotypes, and acknowledged that intuition may be more effective when combined with analytical methods (Miles & Sadler-Smith, 2014).

As further evidence of practitioner’s use of intuition over analysis, out of 166 line managers interviewed in a study conducted by Nowicki and Rosse (2002), most believed that their past successful hires were due to intuition and luck. Consequently, the authors concluded that although there is research in academia that links analytical recruiting practices to post-hire outcomes, there is very little interest among practitioners. To
illustrate, the authors provide data from the American Management Association (1997) that shows only 28 percent of employers used a cognitive ability test and only 19 percent used personality tests.

There are some academic arguments that support the practitioner’s preference for intuition over analysis in employee selection. Arguments supporting the use of intuition in employee selection generally fall under two categories: holism and thin slices.

Holism. Holism is a school of thought founded on the premise that assessment of future success requires considering the whole person, not just selective facets such as personality or cognitive ability (Highhouse & Kostek, 2013; Langhammer, 2013). Those with a holistic view consider analytical techniques to be secondary to expert judgment. Those who advocate holism believe that expert intuition is the only way to understand how different attributes interact to create a complex whole (Highhouse & Kostek, 2013). Moreover, expert intuition is not only useful to collect information but also to appropriately combine the various forms of data to make a holistic decision (Highhouse & Kostek, 2013). From a practitioner perspective, a holistic approach to integrating the interview process data has been found to be more favorable than analytical methods (Diab et al., 2011). However, the academic arguments supporting holism are mostly conceptual and lack empirical support (Highhouse & Kostek, 2013).

Thin slices. Thin slice research typically involves getting untrained raters to evaluate individuals by viewing short video recordings of their nonverbal behavior (Eisenkraft, 2013; Murphy et al., 2015). These video recordings are typically only a few seconds in length. Research has found that judgments based on thin slices can accurately predict various outcomes (Ambady, Krabbenhoff, & Hogan 2006; Ambady, Koo,

Eisenkraft (2013) argued that the collective intuitive judgments based on thin slices are stronger than a single interviewers' intuitive judgment. Thus, Eisenkraft (2013) concluded that an intuition based first impression will typically not be a valid predictor of job performance unless the intuitive judgments of multiple interviewers are combined. Miles and Sadler-Smith (2014), who conducted a qualitative study of hiring managers, concur by stating that collecting interview judgments of multiple interviewers will be more effective and will help to negate individual biases. In contrast, Huffcutt and Woehr (1999) who conducted a meta-analytic review of interview studies found that a panel of interviewers does not increase validity, and may, in fact, have a detrimental effect.

To summarize, even though there are some scholarly arguments supporting the use of intuition in recruitment, the general consensus among academics is that analytical forms of employee selection are superior to intuition (Highhouse, 2008b; Highhouse & Kostek, 2013; Levashina et al., 2014). Practitioners, however, still largely rely on intuition to make hiring decisions (Diab et al., 2011). From an academic perspective, is it possible that scholars were too quick to dismiss the potential use of intuition in employee selection without fully understanding the conditions in which intuition may, in fact, be helpful? Thus far, scholars have not thoroughly examined contextual factors that could impact the effectiveness of intuition in employee selection.
Impact of Context on the Effectiveness of Intuition

When studying why hiring managers tend to favor intuition over analysis, context is a critical factor to consider (Colarelli & Thompson, 2008). Perceived effectiveness of intuitive hiring decisions can vary based on context (Miles & Sadler-Smith, 2014). Klimoski and Jones (2008) suggested that the needs of the decision maker are often the result of context. Managers may rely on intuition, as opposed to analytical selection methods, due to the inability to sustain a complex selection program as well as the perceived benefits of using such a program. The level of accountability of the decision maker to other stakeholders in the organization may also have an impact on the decision-making approach. Furthermore, financial considerations may influence the decision maker to intuitively select a candidate rather than investing in an elaborate employee selection program (Klimoski & Jones, 2008).

Miles and Sadler-Smith (2014) found that intuition was perceived to be effective in situations where hard data was either not available or inadequate to make a hiring decision. In these circumstances, intuition allowed the interviewer to assess and obtain an overall impression of the candidate. On the other hand, intuition was perceived to be less effective when assessments were necessary to test an individual’s level of competence, when it caused stereotyping, and when it was used in an unstructured way. The authors noted that intuition becomes particularly important if a pool of candidates is identified as equally competent through analytical methods. In such a situation, an intuitive decision based on face-to-face interviews might be the only way to distinguish between the candidates (Miles & Sadler-Smith, 2014).
Therefore, context appears to have a significant impact on the use and effectiveness of intuition in employee selection. The context could include task-related factors such as task complexity. Recall that task complexity is an antecedent for effective intuitive decision-making. Thus, in order to draw a comparison between intuition and employee selection research, the following section discusses the extant research in employee selection that focuses on the role of job complexity on the effectiveness of intuitive decision-making.

Impact of Job Complexity on the Effectiveness of Intuition

Even though research, in general, has found analytical forms of employee selection to outperform intuitive judgments (Conway et al., 1995; Huffcutt & Arthur, 1994; Levashina et al., 2014; Wiesner & Cronshaw, 1988), when it comes to complex jobs, the findings are somewhat contradictory (Levashina et al., 2014). Complex jobs are positions that have higher information processing demands (Hunter, Schmidt, & Judiesch, 1990). For simple jobs, since there is a clear cause-effect relationship to job performance, it is easier to specify evaluation standards (Dipboye, 1994). However, for complex jobs, it is much more difficult to specify evaluation standards or to identify factors that contribute towards good job performance (Chen, Tsai, & Hu, 2008). This is because there is no clear connection between an individual’s skills, knowledge, and prior experience to subsequent job performance. Thus, it is problematic to create standardized selection metrics, such as standardized tests, for positions that are high in complexity (Chen et al., 2008).

In intuition research, scholars have found that an intuitive decision-making style is better suited for situations that are complex, uncertain, high in time pressure, have
insufficient data, and when there is more than one reasonable option (e.g., Agor, 1986; Burke & Miller, 1999). An employee selection environment typically consists of these characteristics. This is especially true for complex positions where there is a high level of uncertainty as there is no definite connection between a candidate’s qualifications and future job performance (e.g., managerial positions). As such, intuition is a way to assess candidates for positions where the antecedents for effective job performance are not easily identifiable or measurable (Miles & Sadler-Smith, 2014).

Highhouse and Kostek (2013) note that milder forms of holistic belief systems (i.e. an intuitive approach) are held by organizational psychologists who conduct assessments for managerial and executive level positions. Since these type of positions can be categorized as complex jobs, Highhouse and Kostek’s (2013) statement supports the argument that intuitive assessments may be useful for complex positions. As Highhouse (2008b) noted, the support for holistic assessment for a high-level job is based on the idea that the complex characteristics of a high-level job candidate can only be assessed by an equally complex individual (i.e., an individual who understands the idiosyncrasies of the position and the candidate, and is able to holistically combine the available data to make an effective hiring decision).

Through a review of employment interview literature, Levashina et al. (2014) note that there have been mixed findings regarding the validity of the structured interview (i.e., an analytical technique) for high complexity jobs. The authors noted that, in most studies, the validity of structured interviews decrease for high complexity jobs. These findings further support the argument that analytical employee selection methods alone may not be ideal for high-complexity jobs (Levashina et al., 2014).
Huffcutt, Conway, Roth, and Klehe (2004), who conducted a meta-analysis to determine the effects of job complexity on the validity of the structured interview, got a slightly different result. Even though these authors found increased job complexity to decrease the validity of the situational-interview, the validity of the patterned-behavior-description-interview was not affected. However, although both of these interview types are considered structured interviews, the patterned-behavior-description-interview can be considered less structured as it does not always require standardization (Conway & Peneno, 1999). For example, a patterned-behavior-description-interview allows asking probing questions whereas the situational-interview does not. As such, compared to the situational-interview, the patterned-behavior-description-interview provides an opportunity for intuitive assessment. Therefore, the finding that the patterned-behavior-description-interview is not affected by job complexity does not necessarily contradict the notion that intuitive judgment might be effective for complex jobs.

Huffcutt et al. (2004) discussed two potential reasons for the moderating effect of job complexity on the situational interview. First is the inadequacy of the scoring system. Although the standard situational scoring system may work well for low to medium complex jobs, for highly complex jobs, the scoring system may not be detailed enough to capture the more complex answers provided by the applicants. Second, because a complex job will have more complicated facets, it will be difficult to come up with hypothetical situational questions that accurately measure the applicant’s ability to perform complex tasks. Therefore, the quality of the situational questions may not be sufficient to accurately assess a candidate for a complex job (Huffcutt et al., 2004).
Overall, research findings seem to suggest that job complexity has an impact on the effectiveness of the hiring method. As job complexity increases, the effectiveness of analytical hiring methods decrease (Levashina et al., 2014) and the effectiveness of intuitive hiring may increase. In addition to job complexity, since the decision maker’s domain expertise has been found to increase the quality of intuitive judgment (e.g., Chase & Simon, 1973a; Dane et al., 2012; Dijkstra et al., 2013; Hammond et al., 1987), the following section focuses on the impact of the interviewer’s domain expertise on the effectiveness of intuitive hiring decisions.

Impact of Domain Expertise on the Effectiveness of Intuition

Practitioners tend to believe that the ability to make good intuitive hiring decisions increase with experience (Miles & Sadler-Smith, 2014). Highhouse (2008b) referred to this phenomenon as the ‘myth of expertise’ and concluded that different types of rater bias limit the accuracy of intuitive judgments. Examples of such rater bias include; anchoring (i.e., tendency to rely on the first piece of information to judge subsequent data), halo bias (i.e., tendency to judge a candidate by the overall impression and not accurately evaluate the individual on relevant dimensions), and similar-to-me bias (i.e., tendency to gravitate towards candidates who are similar to oneself) (Dries, 2013). In addition, factors such as overconfidence, hindsight bias, personal political objectives, and the desire to look like an expert may impact the intuitive judgment of an interviewer (Highhouse, 2008a). Therefore, some academics argue that an interviewer’s intuitive ability to accurately predict the job performance of an applicant does not increase with experience (Highhouse, 2008b; Highhouse and Kostek, 2013).
Those who support intuitive hiring methods view expert intuition as the only way to identify how disparate elements interact to create a complex whole (Highhouse & Kostek, 2013). For one, experts have the capacity to identify idiosyncrasies in a candidate's profile. For another, compared to non-experts, experts are better able to interpret configurations of traits (Highhouse, 2008b). As such, not only is expert intuition important in collecting candidate information, it is also important to accurately combine the data collected from different sources (Highhouse & Kostek, 2013). Dipboye (1994) who compared the validity of the structured versus unstructured interview, observed that since experts generally have more complex, reliable, and accessible knowledge structures than non-experts, compared to non-experts, expert interviewers may be somewhat more effective in making intuitive hiring decisions. However, the author concluded that even an expert is unlikely to match the accuracy of analytical selection methods.

To summarize, although there are some arguments to the contrary, the general consensus among scholars in employee selection is that expertise does not increase the interviewer’s ability to make an effective intuitive hiring decision. In contrast, intuition research has repeatedly found expertise to impact the effectiveness of intuition (e.g., Chase & Simon, 1973a; Dane et al., 2012; Dijkstra et al., 2013; Hammond et al., 1987). The reason for the discrepancy might be the fact that employee selection research has not thoroughly considered factors, such as job complexity, that could impact an expert interviewer’s intuitive judgment.

In further exploring the impact of interviewer related factors on the effectiveness of intuition, another aspect to consider is the decision maker’s cognitive style. The
following section explains what cognitive style is and how it impacts decision-making, especially in relation to employee selection.

Impact of Cognitive Style on Decision Quality

Cognitive style refers to an individual’s inherent tendency to use either an analytical or intuitive style for information processing and decision-making (Brigham et al., 2007). Based on the premise of dual-process theory, which views intuition and analysis to be distinct, independent constructs (Evans, 2010), Hodgkinson and Clark (2007) argue that individuals fall into one of four cognitive categories in terms of their preference for intuitive or analytical information processing (see Figure 1).

Figure 1

Basic Typology of Contrasting Cognitive Strategies and Style

Adapted from Hodgkinson and Clark (2007)

As depicted in Hodgkinson and Clark’s (2007) conceptual framework, individuals in the detail conscious category are highly analytical and seldom rely on intuition. In contrast, those who are big picture conscious are highly intuitive and tend to ignore the details. The non-discerning are those who try to exert minimal cognitive resources either
for analytical or intuitive information processing. However, individuals categorized as *cognitively versatile* are high in both intuitive and analytical decision-making ability and have the skill to switch between the two modes depending on the situation.

Cognitive style does not change over time (Brigham et al., 2007) and individuals generally have a predisposition to either be more intuitive or analytical (Epstein, Pacini, Denes-Raj, & Heier, 1996; Norris & Epstein, 2011). Furthermore, cognitive style has been found to have an impact on how individuals make decisions (e.g., Dutta & Thornhill, 2008) as well as the outcomes of those decisions (e.g., Sadler-Smith, 2004). An individual’s inherent cognitive style is not always the same as the actual decision-making approach employed by that individual to make a decision (Blume & Covin, 2011). The actual decision-making approach used to solve a problem is termed cognitive strategy (Hodgkinson & Clarke, 2007). While cognitive style is the preference to use either an intuitive or an analytical approach to information processing and decision-making, cognitive strategy is the actual use of either an intuitive or analytical style in a given situation (Hodgkinson & Clarke, 2007). A mismatch between cognitive style and cognitive strategy may result in a negative outcome. For example, Brigham et al. (2007) found that, in highly structured work environments (i.e., an environment prone to analytical decision-making), owner-managers who have an intuitive cognitive style were less satisfied than those who have an analytical cognitive style.

In employee selection, research has found that the cognitive style of interviewers impacts the preference for intuitive or analytical hiring methods (e.g., Miles & Sadler-Smith, 2014). For example, interviewers who are analytical have a more favorable perception towards the structured interview (Levashina et al., 2014). Conversely,
managers who are inherently intuitive tend to use an intuitive style in employee selection (Miles & Sadler-Smith, 2014). Lodato, Highhouse, and Brooks (2011) found that professionals who prefer intuition in employee selection are typically experiential thinkers, are less experienced, are employed by a smaller firm, and do not have advanced professional certification. Overall, based on extant findings, it is apparent that the interviewer’s cognitive style has an impact on the preference to use either an intuitive or analytical selection approach. Moreover, it appears that individuals are more inclined to use their inherent cognitive style to make hiring decisions.

To summarize, factors such as job complexity, interviewer domain expertise, and the interviewer’s cognitive style may impact the effectiveness of intuition in employee selection. Since intuition has been found to be effective for domain experts when solving complex problems, it is possible that intuitive hiring can be effective for expert interviewers when recruiting for complex jobs. However, given conditions that may be conducive to intuitive decision-making (i.e., complex tasks), we have little knowledge of factors that could inhibit an expert’s intuitive judgment. One such potential factor is decision accountability. The following section discusses the role of decision accountability on expert intuition.

Role of Decision Accountability on Expert Intuition

Research on accountability has shown that, when individuals are required to justify their decisions, under certain conditions, they use more complex information processing strategies (Lerner & Tetlock, 1999; Tetlock, 1983). As such, decision accountability can prompt an individual to evaluate their cognitive processes in an analytical manner. More specifically, procedural accountability, which is a sub-
dimension of accountability, has been found to lead to a more extensive analysis of information (e.g., Doney & Armstrong, 1996).

As described in Chapter 1, procedural accountability is the extent to which an individual is held accountable to the quality of the procedure used in making a decision (Pitesa & Thau, 2013; Siegel-Jacobs & Yates, 1996). Brtek and Motowidlo (2002), who examined the effect of procedural and outcome accountability on interview validity, found attentiveness to mediate the positive relationship between procedural accountability and decision quality. Since attentiveness is a conscious, deliberate state of mind, the findings of Brtek and Motowidlo (2002) support the notion that procedural accountability may prompt analytical cognitive processing.

Analytical cognitive processing, in turn, may disrupt the effectiveness of intuition (Baumeister, 1984; Wilson & Schooler, 1991). Through multiple experiments, Wilson and Schooler (1991) found that introspection, a form of analytical reasoning, has a detrimental effect on decision quality. The authors concluded that too much thinking about an issue causes individuals to focus on non-optimal criteria, thereby resulting in a non-optimal decision. Similarly, metacognition (i.e., controlled thought process where one reflects on one’s actions) may have an unfavorable effect on intuition as the metacognitive process interrupts intuitive thinking (Baylor, 1997; Baylor, 2001).

The negative effect of analytical cognitive processing on intuition may be amplified in conditions that are conducive to intuitive decision-making (i.e., when the decision maker has domain expertise and when the task is complex). For example, Dane et al. (2012) found that, when solving non-decomposable tasks (i.e., tasks that cannot easily be solved using analytical procedures), experts perform worse using analysis than
intuition. Thus, given tasks that are conducive to intuitive decision-making, analytical cognitive processing seems to disrupt an expert’s ability to make an effective intuitive decision. Research relating to clinical decision-making (Wimmers et al., 2005), motor skills (e.g., Beilock et al., 2004; Beilock et al., 2002; Gray, 2004), and verbal overshadowing (e.g., Lane & Schooler, 2004; Meissner & Brigham, 2001; Melcher & Schooler, 2004) provides further evidence that analysis may effect intuition.

Contrary to the general finding that analysis may disrupt expert intuition, in a study that explored the effects of expertise and cognitive strategy on solving complex problems related to college life, Pretz (2008) found that more experienced individuals scored better when required to use an analytical strategy than an intuitive strategy. However, there are limitations of the study that could have caused the anomaly. For one, the majority of the items selected to represent complex problems in Pretz’s (2008) study were social and inter-personal problems such as living with a stealing roommate and maintaining friendships (see Figure 2 for an example). Since these problems were social in nature, they do not necessarily represent problems that would require extensive domain-specific experience.

Recall that expert intuition refers to highly complex, domain-relevant mental schemas that are a result of extensive experience in the focal domain (Chase & Simon, 1973b; Dane & Pratt, 2007). Examples of such domain experts include seasoned firefighters and chess grandmasters. In comparison, the social problems used for Pretz’s (2008) study lack the level of domain specificity that typically leads to expert intuition. In addition, Pretz (2008) measured domain expertise by college tenure. Given the social nature of the problems, it is not clear that college tenure would count as domain relevant
expertise. Therefore, although Pretz’s (2008) findings may generalize to social problem-solving behavior among undergraduates, the findings do not provide strong support to the argument that experts are better off using analysis than intuition.

Figure 2

Sample Problems – Pretz (2008)

<table>
<thead>
<tr>
<th>Sample Problem Across All Participants in Study 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>You have decided to apply for an internship during the upcoming break, and want to ask one of your professors for a letter of recommendation. The professor you have in mind is teaching a fairly large class, and he does not know you very well. One day you run into him in the coffee shop, where he is sitting with what you assume are his kids. Given the situation, rate the quality of the following options:</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Extremely Bad</td>
</tr>
<tr>
<td>a) You decide that this is a good time to talk to him about the letter.</td>
</tr>
<tr>
<td>b) You go up and greet him, reminding him of your name and what class you are in.</td>
</tr>
<tr>
<td>c) You greet him and then start chatting with his kids.</td>
</tr>
<tr>
<td>d) You nod but do not talk to him.</td>
</tr>
<tr>
<td>e) You pretend you have not seen him. He probably does not want to deal with students outside of his workplace.</td>
</tr>
<tr>
<td>f) You ask if you can sit down with him and his kids and talk about different things.</td>
</tr>
<tr>
<td>g) You greet him and ask for an appointment with him on the following day.</td>
</tr>
<tr>
<td>h) You greet him and offer to buy him and his kids coffee or sodas.</td>
</tr>
</tbody>
</table>

Adapted from Pretz (2008)

Purpose and Research Questions

As already noted, analytical employee selection methods have been repeatedly found to outperform intuitive methods when recruiting for low complexity jobs (e.g., Conway et al., 1995; Huffcutt & Arthur, 1994; Levashina et al., 2014; Wiener & Cronshaw, 1988). However, and as also previously discussed, when job complexity increase, the effectiveness of analytical techniques has been found to decrease (Huffcutt et al., 2001; Levashina et al., 2014). Consequently, for complex jobs, intuition may be a better way to make an effective hiring decision. Therefore, and as discussed in chapter 1,
the current study seeks to answer the following research questions: can intuition lead to accurate hiring decisions for complex jobs; and if so, under what conditions is this more likely to occur?

Since the decision maker’s domain expertise has been found to impact the effectiveness of intuitive judgment for complex tasks (e.g., Dane et al., 2012), the present study investigated if these findings hold true in a specific context – that of employee selection. In addition, an individual’s cognitive style has an impact on the decision-making process (Hodgkinson & Clark, 2007). Hence, this study attempted to answer the aforementioned research questions by examining the impact of the interviewer’s domain expertise and cognitive style on the effectiveness of an intuitive hiring decision when recruiting for a complex job.

This paper also attempted to investigate common organizational factors that could disrupt an expert’s ability to make an effective intuitive decision. More specifically, the paper explored how introducing procedural accountability impacts expert intuition, and as described earlier, considered the research question: how does procedural accountability impact the accuracy of an expert’s intuitive judgment?

In order to answer the research questions of this study, the following section details the hypotheses for factors that influence the effectiveness of intuition when recruiting for complex jobs.

Hypotheses Development

The effectiveness of intuition can be influenced by individual factors such as the decision maker’s domain expertise and cognitive style as well as contextual factors such as task complexity. When attempting to examine the conditions in which intuition can be
an effective mode of decision-making, it is important to consider the impact of such factors. Accordingly, this paper examined the impact of interviewer’s domain expertise (i.e., prior experience in recruiting for a complex job) and cognitive style on the accuracy of an intuitive hiring decision when recruiting for a complex job. Hypotheses 1-3 explored these factors.

Given conditions that are conducive to intuitive decision-making, it is also important to consider what organizational factors could disrupt an expert’s ability to make an effective intuitive decision. Specifically, hypothesis 4 focused on the impact of procedural accountability on expert intuition. However, since job complexity is a necessary condition for each hypothesis, it is important to first clarify job complexity within the context of this study.

Job Complexity

Consistent with Campbell’s (1984) definition of complexity (and as defined in chapter 1), a complex job is a position that has many tacit elements that leads to successful job performance. Similar to expert intuition, tacit knowledge involves the development of mental models that shape an individual’s perspective and their understanding of how best to proceed in a given situation and is a result of extensive experience in a specific domain (Nonaka, 1994). Unlike explicit knowledge, which involves codifiable facts and theories, tacit knowledge involves knowing “how” (Grant, 1996), in such a way that the knowledge cannot easily be codified (Nonaka, 1994).

Since there are only a few tacit elements that lead to job success when job complexity is low, it is relatively easier to ascertain the knowledge, skills, and abilities that are required for successful job performance. This is because the job requirements for
a low complexity job are fairly straightforward. For example, the qualifications of stenographers can be adequately assessed by testing their short handwriting skills, typing speed and accuracy, and transcription skills. Thus, the lower the job complexity, the clearer the prescriptive causes of good performance, and the easier it is to standardize selection criteria (Dipboye, 1994). Consequently, since the objective data clearly establishes the qualifications of the candidate, the interviewer does not need to use their intuitive judgment to make a hiring decision. This argument is reinforced in employee selection research as analytical selection methods have typically been found to be more reliable than intuitive methods for low complexity jobs (e.g., Conway et al., 1995; Huffcutt & Arthur, 1994; Levashina et al., 2014; Wiener & Cronshaw, 1988).

In contrast, when job complexity is high, it is much more difficult to specify evaluation standards or to identify factors that contribute to good job performance due to the ambiguity surrounding the correct formula for successful job performance (Chen et al., 2008). For example, studies have found that the validity of the structured interview (an analytical method) is lower for complex jobs (Huffcutt et al., 2001; Levashina et al., 2014; Pulakos & Schmitt, 1995) such as federal investigative agents, managers, physicians, and engineers. This is likely due to the inadequacy of the structured questions to capture the complex performance outcomes as well as the inability of the standardized scoring system to adequately rate the answers given by candidates for complex positions (Huffcutt et al., 2004).

Based on the aforementioned findings, the argument that task complexity is a necessary condition for effective intuition appears to hold true in an employee selection context. Intuition may be more effective for complex jobs and not so effective for low
complexity jobs. Given that analytical methods have been repeatedly found to outperform intuition for low complexity jobs, it seems a futile exercise to measure the impact of intuition for low complexity jobs. Therefore, the present study solely focused on complex jobs.

Having clarified job complexity within the context of this study, and laying the foundation that intuition may be an effective method of decision-making for complex jobs, the next section presents the hypothesis that compares the effectiveness of intuitive versus analytical hiring decisions for complex jobs.

As depicted in Figure 3, I argue that for complex jobs, the accuracy of a hiring decision is greater when the interviewers use intuitive rather than analytical selection processes. This is also the main effect as depicted in Figure 4, cells I versus A.

Figure 3
Conceptual Model for Hypotheses 1-3
Building on the previous argument, I also propose that when the decision maker is an expert, the accuracy of an intuitive decision over analysis is amplified (cells EI versus EA in Figure 4). Furthermore, I expect that those who are experts to be able to make more accurate intuitive hiring decisions than those who are non-experts (cells EI versus NI in Figure 4).

Figure 4

*Accuracy of Intuition versus Analysis for Complex Jobs*
Accuracy of Intuition versus Analysis for Complex Jobs

Although the debate continues, there is some evidence that intuition may be more effective than analytical decision-making for complex and ill-structured tasks. When the task is complex (Dijksterhuis, 2004), and the decision-making environment is uncertain, complex, and/or subject to time pressures (Agor, 1986; Burke & Miller, 1999), intuition may be a more appropriate way to make a decision. In support, Dijksterhuis (2004) used a series of experiments to investigate the role of conscious (i.e., analytical) and unconscious (i.e., intuitive) thought in solving complex tasks. The tasks in his study were choosing an apartment and choosing a roommate, both of which were ill-structured and ambiguous tasks. Throughout the experiments, intuition was found to be more effective than analysis in making quality decisions.

The ability of intuition to outperform analysis for complex tasks can be attributed to the limitations of the conscious mind to process a large number of disparate pieces of information (Dijksterhuis, 2004; Dane & Pratt, 2007, Simon, 1957). Due to this limited capacity, the conscious mind tends to focus on a restricted number of problem attributes. These attributes may even be non-optimal criteria, which in turn produce non-optimal results (Hogarth, 2002). The unconscious mind, on the other hand, is able to holistically combine disparate pieces of information to provide an effective solution. Therefore, compared to intuitive thought, analytical thought is more likely to lead to extreme errors (Hammond et al., 1987).

In an employee selection context, recruiting for a complex job is equivalent to a complex task. Recall that a complex job is a position that has numerous tacit elements that lead to successful job performance. Since tacit elements cannot be explicitly stated,
an accurate prototype of an ideal employee cannot be developed. It is subsequently
difficult to explicitly state the selection criteria for complex jobs. Therefore, a purely
analytical selection process may not be effective for candidate selection. Supporting this
argument, research has found that as job complexity increases, the effectiveness of
analytical selection methods decreases (Huffcutt et al., 2001; Levashina et al., 2014;
Pulakos & Schmitt, 1995).

Considering the inadequacy of analytical hiring methods for complex jobs, and
since intuition has been found to be more effective than analysis for complex tasks, I
argue that, for a complex job, an intuitive hiring decision will be more accurate than an
analytical hiring decision. Therefore, I hypothesize:

**Hypothesis 1:** For complex jobs, the accuracy of a hiring decision is greater when
decision makers use an intuitive (I) rather than analytical (A) decision-making
process.

Impact of Domain Expertise on the Accuracy of Intuition over Analysis

Building on hypothesis above, it is important to consider the conditions in which
the effectiveness of intuition over analysis is amplified. As such, the purpose of this
section is to explore the impact of interviewer expertise on the effectiveness of intuition
over analysis when recruiting for a complex job (i.e., comparison of cell EI and EA in
Figure 3). An expert interviewer is one that has experience in recruiting for a particularly
complex job category such as healthcare professionals.

Given a complex task, the effectiveness of intuition has been found to be greater
when the decision maker has domain expertise (e.g., Chase & Simon, 1973a; Dijkstra et
al, 2013; Hammond et al., 1987). Individuals gain domain expertise when they have an
extensive domain related knowledge and experience. As a result of this knowledge and experience, domain experts develop highly complex, domain-relevant mental schemas (Dane & Pratt, 2007). Using these mental schemas, domain experts are often able to make highly accurate intuitive decisions (Kahneman & Klein, 2009). For example, Chase and Simon (1973b) found that chess grandmasters were able to instantaneously recognize 50,000 to 100,000 chess patterns and make the best move without much reflection.

In comparison, expertise may not increase the effectiveness of an analytical decision for a complex task. For example, Dane et al. (2012) found that, among participants who used analysis to solve a complex task, there was no significant difference in task performance between those with high expertise and those with low expertise. In fact, other studies have found that prompting an expert to use analysis may negatively impact decision quality (e.g., Wimmers et al., 2005, Melcher & Schooler, 2004). This may be especially true for complex tasks that, because they are ill-structured and ambiguous in nature, may not have clear objective criteria for making an accurate decision. Therefore, if experts are prompted to use analysis to solve a complex task, they may focus on non-optimal criteria that may limit the effectiveness of their decision.

Based on the preceding discussion, although expertise has a positive impact on the effectiveness of intuition, it may not have a significant impact on the effectiveness of analysis. In fact, expertise may limit the effectiveness of analytical decision-making for complex tasks. Therefore, I argue that domain experts who use intuition to solve a domain relevant complex task will be more effective than those who use analysis. In line with this argument, when recruiting for a complex job, if the interviewer is an expert with prior experience in recruiting for a similar complex job, intuition may be more useful
than analysis to make an accurate hiring decision. This is because, due to highly
developed and domain-relevant mental schemas, an expert interviewer may be better able
to holistically combine the disparate pieces of available information about the candidate.
Since a complex job has many tacit elements that lead to successful job performance, the
elaborate mental schemas allow the expert interviewer to unconsciously and
automatically consider these tacit elements and determine the compatibility of the
candidate.

Conversely, if the expert interviewer is required to make an analytical hiring
decision, since it is difficult to set accurate selection standards for a complex job, the
interviewer will be forced to focus on non-optimal criteria. A decision based on non-
optimal criteria will lead to a non-optimal decision. Thus, compared to an intuitive
decision that holistically combines the explicit as well as the implicit elements for job
success, an expert interviewer’s analytical decision will be less accurate. Therefore, I
hypothesize:

*Hypothesis 2a: For complex jobs, the accuracy of a hiring decision is greater
when the interviewer is an expert and the interviewer uses intuitive (EI) rather
than analytical (EA) decision processes.*

Impact of Expert versus Non-Expert on the Accuracy of Intuition

As discussed in the development of hypothesis one, for a complex job, intuition is
a more effective mode of decision-making than analysis. In addition, as argued in the
development of hypothesis 2a, for a complex job, the accuracy of intuition over analysis
is amplified when the decision maker has domain expertise. This section will focus on the
impact of interviewer domain expertise in increasing the accuracy of intuition. For this
purpose, the accuracy of an intuitive decision between experts and non-experts will be compared (i.e., cell EI and NI in Figure 3).

The effectiveness of an intuitive decision depends on the nature of the domain relevant mental schemas established in the mind of the decision maker. These mental schemas can either be (1) simple heuristics with minimal domain-relevant knowledge, or (2) complex cognitive maps with a high level of domain-specific information (Dane & Pratt, 2007). Those with simple heuristics are individuals who have little to no knowledge and experience in the focal domain. Due to this reason, the non-expert’s mental schemas lack the domain sensitivity and the capacity to process the information presented in a complex problem. Thus, an intuitive decision of a non-expert may not be optimal.

However, as previously noted, due to extensive domain-relevant knowledge and experience, an expert possesses highly complex, domain-relevant mental schemas. These complex mental schemas allow the expert to quickly and automatically process a large amount of disparate information and make an effective intuitive decision. Thus, compared to a non-expert, and expert’s intuitive judgment is much more effective.

Consistent with the argument above, Chase and Simon (1973a) found that, compared to novice chess players, master chess players are able to extract more information from a brief exposure to a chess position. As a result, they were better able to re-construct those positions than novice chess players. The authors concluded that the superior performance of the master chess players is due to their ability to encode the chess positions to perceptual chunks, each of which contains familiar configurations of chess pieces.
Similarly, Dane et al. (2012), who conducted two experimental studies to examine the impact of domain expertise on the effectiveness of intuition, found that there was a significant difference in the task performance between participants with high expertise and participants with low expertise. In the first study, which asked participants to assess the difficulty of a basketball shot, domain expertise was determined by the number of years of experience playing competitive basketball. In the second study, which asked participants to identify real and fake designer handbags, domain expertise was determined by the total number of designer handbags owned by each participant. In both studies, those with high domain expertise outperformed those with low domain expertise thus supporting the argument that domain expertise can increase the effectiveness of an intuitive decision.

Contrary to the findings of research related to intuition, in employee selection, some scholars argue that the effectiveness of intuition does not increase with experience (Highhouse, 2008b). Much of this argument is based on the success of analytical techniques over interviewer’s intuition in selecting candidates for low complexity jobs. However, since the effectiveness of analytical methods has been found to diminish as job complexity increases, interviewer expertise may have a critical role in making an effective hiring decision. As noted by Dipboye (1994), since experts generally have more complex, reliable, and accessible knowledge structures than non-experts, compared to non-experts, expert interviewers may be more effective in making intuitive hiring decisions. This is because, compared to non-experts, experts have a higher capacity to identify idiosyncrasies of a candidate and to interpret configurations of traits that lead to
job success. In addition, experts may be better able to holistically combine the candidate data collected from different sources to make an effective intuitive decision.

Based on the foregoing discussion, I argue that interviewer expertise increases the accuracy of a hiring decision if the position being recruited for is a complex job. This argument is, in fact, consistent with the research in intuition that has found expertise to increase the effectiveness of intuitive decisions when solving complex tasks. Therefore, I hypothesize:

*Hypothesis 2b: For complex jobs, the accuracy of a hiring decision is greater when the decision maker using intuitive selection processes is an expert (EI) rather than a non-expert (NI)*

Impact of Cognitive Style on the Accuracy of a Hiring Decision

The hypotheses so far only considered one interviewer related factor that impacts the accuracy of intuitive and analytical hiring decisions, namely interviewer’s domain expertise. As discussed earlier, another aspect to consider is the interviewer’s cognitive style. As such, the next hypothesis focuses on the impact of the interviewer’s cognitive style on the accuracy of intuitive and analytical hiring decisions (i.e., comparison of cell II and AA with IA and AI in Figure 5)
Figure 5

Impact of Cognitive Style on the Accuracy of a Hiring Decision

<table>
<thead>
<tr>
<th></th>
<th>Intuitive (I)</th>
<th>Analytical (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intuitive</td>
<td>II</td>
<td>IA</td>
</tr>
<tr>
<td>Style (I)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analytical</td>
<td>AI</td>
<td>AA</td>
</tr>
<tr>
<td>Style (A)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>(Main Effect)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dependent variable: accuracy of a hiring decision for a complex job

Hypothesis 3: II and AA > IA and AI

Most individuals are predisposed to prefer one cognitive style over the other (Epstein et al., 1996; Norris & Epstein, 2011). This preference then influences the individual’s approach to solving a problem (Hodgkinson & Clark, 2007). Those with an analytical style prefer a deliberate, logical approach whereas those with an intuitive style prefer a more ‘gut feeling’ approach.

As it relates to employee selection, the cognitive style of interviewers impacts the preference for intuitive or analytical hiring methods (e.g., Miles & Sadler-Smith, 2014). Interviewers who are analytical have a more favorable perception towards analytical selection methods (Levashina et al., 2014). For example, Chen et al. (2008) found that those who have an analytical cognitive style (versus those that have an intuitive cognitive style) had positive reactions towards the highly structured interview, which is an analytical style interview. These authors also found that interviewers with an analytical
cognitive style reacted more positively towards the highly structured interview for high complexity jobs. On the other hand, managers with an intuitive cognitive style prefer to use their intuition in employee selection (Lodato et al., 2011; Miles & Sadler-Smith, 2014).

A mismatch between an individual’s inherent cognitive style and the cognitive strategy (i.e., the actual decision-making approach) used to solve a particular problem may result in a negative outcome (Hodgkinson & Clark, 2007). However, congruence between an individual’s cognitive style and the mode induced by task properties will result in better outcomes (Friedman et al., 1985). For example, Brigham et al. (2007) found that owner-managers whose cognitive style matched the decision-making structure of their organization were more satisfied and had fewer intentions to exit the business. Although the authors did not attempt to measure the success of the organization, it can be inferred that those who did not want to exit the business was likely more successful.

Based on the aforementioned findings, I propose that there is a difference between the individuals whose inherent cognitive style match the employee selection method compared to those whose cognitive style does not match the employee selection method. Furthermore, since a match between the cognitive style and the cognitive strategy may produce better outcomes, I propose that those whose cognitive style match the employee selection method will perform better than those whose cognitive style does not match the employee selection method. Thus, I hypothesize:

*Hypothesis 3: For complex jobs, the accuracy of a hiring decision is greater when the selection method is aligned with the interviewer’s cognitive style.*
Effect of Procedural Accountability on Expert Intuition

The secondary research question of this paper is: how does procedural accountability impact the accuracy of an expert’s intuitive judgment? Consequently, as illustrated in Figure 6, the next hypothesis focuses on the impact of procedural accountability on expert intuition.

Figure 6

*Conceptual Model for Hypothesis 4*

Individuals gain expert intuition when they have extensive domain-relevant knowledge and experience (Dane & Pratt, 2007). Expert intuition can lead to effective decisions when (1) the task is complex (Dane et al., 2012; Dijksterhuis, 2004), and when (2) the task environment has a high level of uncertainty, complexity, ambiguity, time pressure, lack of data, and/or more than one reasonable solution (Agor, 1986; Burke & Miller, 1999). While such conditions are often conducive to expert intuition, we have little knowledge of organizational factors that could potentially disrupt expert intuition.

Phrases such as “paralysis by analysis” (Langley, 1995) suggest that over-analyzing and searching for structure might adversely affect intuitive judgment (Shapiro
Spence, 1997). Given that intuition is an unconscious (Sinclair & Ashkanasy, 2005) and automatic process (Kahneman, 2003), I suggest that when individuals consciously and deliberately evaluate their decisions, their intuitive process may be obstructed. In fact, increased analysis of one’s own decision-making process has been found to disrupt task execution and lead to decreased performance (Baumeister, 1984; Wilson & Schooler, 1991). This is especially true for domain experts as studies in clinical decision-making (Wimmers et al., 2005), motor skills (e.g., Beilock et al., 2004; Beilock et al., 2002; Gray, 2004), and verbal overshadowing (e.g., Melcher & Schooler, 2004) have found deliberate, analytical cognitive processing to inhibit expert intuition.

What could cause an expert to forgo their intuition and rely on deliberate, analytical cognitive processing? One such potential organizational factor is the requirement to account for the decision. Specifically, procedural accountability may induce analytical thinking. In support, research has found procedural accountability to increase the attentiveness of the decision maker to the decision-making process (e.g., Brtek & Motowidlo, 2002) leading to a more extensive analysis of information (e.g., Doney & Armstrong, 1996). Therefore, I argue that when decision makers are aware they will have to account for the process used to make their decision, they will use more deliberate, analytical thought processes.

As noted, these deliberate, analytical thought processes may disrupt intuitive thinking (Baumeister, 1984; Wilson & Schooler, 1991). This disruption of the intuitive process may have a positive effect on an individual with limited expertise who does not have the necessary domain-relevant knowledge and experience to have developed expert intuition. Therefore, a beginner’s intuitive decision is likely based on non-relevant
criteria and will typically result in a sub-optimal decision. For example, through an experimental study, Brtek and Motowidlo (2002) found procedural accountability to increase decision quality in employee selection by driving the decision maker to be more attentive (i.e., deliberate and analytical) to the process. The participants of the experiment were undergraduate students who simulated employment interviews by watching videotapes of managers answering an interview question and then rated the managers on their leadership potential. The students had very little, if any, domain-relevant experience to judge the leadership potential of a manager. These findings support the arguments that (1) procedural accountability leads to deliberate and analytical thinking, and (2) deliberate, analytical thinking allows a novice to increase decision quality.

Unlike novices, in a context conducive to intuitive decision-making, experts have the ability to make effective intuitive decisions (e.g., Chase & Simon, 1973a; Dane et al., 2012; Dijkstra et al, 2013; Hammond et al., 1987). Contrary to the effects on novices, disrupting an expert’s intuitive thinking process by inducing them to use more deliberate, analytical thinking can negatively affect decision quality. For example, Dane et al. (2012) found that experts who were asked to analytically solve a task performed worse than those who used intuition. Furthermore, Wimmers et al. (2005) found that experts’ recall diminished when they were required to use a more analytical thought process.

Given the above, it is expected that procedural accountability induces deliberate, analytical thought processes that disrupt intuitive thinking and, as a result, can adversely affect an expert’s decision quality. Likewise, I argue that in a context conducive to intuitive decision-making, procedural accountability will negatively impact the effectiveness of expert intuition. Thus, I hypothesize:
Hypothesis 4: For complex jobs, procedural accountability will moderate the positive relationship between an expert’s intuitive processes and the accuracy of a hiring decision such that the relationship is weaker (less positive) when decision-makers are required to account for the quality of the procedure used in making their decisions.
CHAPTER 3: RESEARCH METHODOLOGY

This chapter includes a discussion of the research methodology used to examine the hypotheses listed in Chapter 2. The hypotheses were tested via a two-part experimental study. The first part addressed hypotheses 1-3 while the second part addressed hypothesis 4. In both, participants assumed the role of an interviewer charged with the task of employee selection for a complex job. Participants in this role reviewed 10 pairs of candidate interviews, and for each pair, decided which one of the two candidate responses was a better choice. This process of a forced choice is a similar methodological approach as that used by Kausel et al., (2016). Following completion of the task, participants completed a questionnaire that assessed their cognitive style, the success of experimental manipulations, and collected demographic information such as age and gender. Both the experiment and the ensuing questionnaire were administered electronically via Qualtrics.

Participants and Setting

The healthcare staffing industry was selected as the job setting as it amply demonstrates the previously described criteria for job complexity. Healthcare staffing companies recruit and place healthcare professionals (e.g., nurses, physicians, pharmacists, speech and language pathologists, and other types of therapists) at various healthcare facilities (e.g., hospitals). Due to the complex nature of healthcare, the role of a healthcare professional typically involves a high level of ambiguity and complexity.
The participants for the expert sample were those with healthcare recruiting experience within the United States (N = 79, 47 females, average age = 33 years, average healthcare recruiting experience was between 1 and 3 years). These recruiters are responsible for recruiting healthcare professionals and typically go through extensive training on recruiting in this field. Not only do the recruiters have to ensure that the candidates sufficiently meet the job requirements, but they also have to evaluate other factors such as the candidate’s past job performance as well as their current availability, flexibility, cultural fit, seriousness about taking a new position, and monetary expectations. Through this complex recruiting process, recruiters are expected to identify any irregularities in the candidate’s profile. In addition to these experts, a group of non-experts without recruiting experience were also sampled. The non-expert sample consisted of undergraduate students from several universities in the southeast United States (N = 83, 41 females, average age = 20 years). This method of using an expert and non-expert sample is consistent with prior studies that explore the effect of interviewer expertise on decision accuracy (e.g., Maurer, 2002). All participants were offered the opportunity to participate in a raffle for four $50 Starbucks gift cards.

Development of Interview Questions and Responses

The preliminary step of the experimental design was to create the interview questions that were used for the study. Interview questions were developed following methods similar to prior employment interview related studies (e.g., Campion, Campion, & Hudson, 1994; Campion, Pursell, & Brown 1988; Day & Carroll, 2003; DeGroot & Kluemper, 2007; Maurer, 2002; Maurer & Lee, 2000; Pulakos et al., 1995; Weekley & Gier, 1987). First, the critical incident technique was used to identify behaviors that
affect job performance. The critical incident technique involves the systematic process of collecting direct observations of behavior to assist in solving practical problems and developing broad psychological principals (Flanagan, 1954). Specifically, 210 behaviors of healthcare professionals that lead to a successful hire were identified by interviewing another sample of healthcare recruiters. Once the critical incidents were gathered, the author, who has over 11 years of experience in healthcare recruiting, reviewed and sorted the incidents into groups of similar incidents to form underlying job dimensions. Through this process, 12 job dimensions were identified (see Table 2). To assess the accuracy of the categorization, an expert sample of three healthcare recruiters (average healthcare recruiting experience = seven years) were asked to review and match a sample of the critical incidents to its corresponding job dimension. There was 100 percent agreement among the expert sample that the behaviors were appropriately categorized into job dimensions.

Table 2

*Job Dimensions*

| 1) | Attention to Detail |
| 2) | Attitude |
| 3) | Dependability |
| 4) | Communication |
| 5) | Client Focus |
| 6) | Flexibility |
| 7) | Honesty |
| 8) | Planning and Organization |
| 9) | Professionalism |
| 10) | Responsiveness |
| 11) | Skill and Experience |
| 12) | Interpersonal Skills |
Next, situational interview questions were written for 11 of the 12 identified job dimensions. The “skill and experience” dimension was excluded because an interview question that measures skill and experience will need to be specific to a particular healthcare profession (e.g., a nurse would need to be asked a different question than a speech therapist). Since the goal was to create general interview questions that apply to a range of healthcare professionals, this dimension was eliminated. The expert sample was asked to match the interview questions to job dimensions in order to assess how well the interview questions reflect the job dimensions. Agreement that the interview questions accurately represent the job dimensions ranged from 66.67 percent to 100 percent with the average being 90 percent.

Then, for each question, three responses were scripted: 1) a good response, 2) an average response, and 3) a poor response. In order to assess the accuracy of the ranking order of the scripted responses, the expert sample was given the three responses for each question in random order and was asked to rank them based on the quality of the response to the interview question. The experts were also asked to determine how well the responses represent realistic candidate responses. Consistent with Maurer and Lee (2000) and Maurer (2002), a minimum acceptable level of agreement for sorting decisions is 66 percent. Thus, adjustments to the interview questions and responses were made until a minimum of 66 percent agreement was achieved (the agreement for some questions were as low as 33 percent on the initial ranking exercise). The final agreement of the ranking of the candidate responses to each interview question ranged from 66.67 percent to 100 percent with the average being 80 percent. Figure 7 illustrates the interview questions and responses development process.
Overall, out of the 11 interview questions, 10 were selected for the experiment along with the “good” and the “average” candidate response for each question (See Appendix A). The question that was eliminated was the one that reflected “interpersonal skills”. This is because, compared to the other questions, this question measured a more generic trait that may not be specific to healthcare staffing.

With regard to the interview question and answer scripts, even though there was acceptable agreement among the expert sample on which candidate response is the best in each interview scenario, similar levels of agreement were not obtained from a different sample of healthcare recruiting experts (N = 5, average healthcare recruiting experience = 13 years) who later reviewed the audio recordings of the candidate responses in the same format as the study participants. Thus, the interview questions and answers were further edited and re-tested using a sample of four healthcare recruiting experts (average healthcare recruiting experience = nine years). The candidate responses were adjusted until a minimum of three out of the four experts agreed on which was the better candidate response for every interview scenario.
Development of Interview Recordings

As previously described, the target setting for the present study is the healthcare staffing industry. Since most staffing companies in this specific industry work on a national scale, it is neither geographically nor economically feasible to conduct in-person interviews with every candidate. As a result, candidate interviews are typically conducted by phone. Therefore, in order to create a realistic interview environment, all the scripted candidate responses were audio recordings. Phone interviews apply to other industries as well since many professional organizations will conduct a phone interview at some point.
during the interview process, so ultimately, the results of this study should be
generalizable to a broader population than just healthcare.

Using the previously developed interview questions and responses, 10 candidate
interview scenarios were developed. For each scenario, two candidate responses (i.e.,
good and an average response) were recorded for a total of 20 audio recordings. Only one
question per interview scenario, as opposed to several questions, was used for two
reasons. The first reason was to control experiment length. Since the target participants
include working professionals, a lengthy experiment may result in decreased participation
and task completion. The second reason was to offer a reasonable number of decision
scenarios so that the participants’ decision accuracy score was based on multiple hiring
decisions (i.e., 10) and not based on a single decision. Prior interview related studies have
also used a single interview question (e.g., Brtek & Motowidlo, 2002).

As noted, each interview scenario was developed where, for the same interview
question, one candidate response was good and the other was average. The good-average
response format was used because, if a pair of interviews consists of a good-poor
response, the difference between the candidates may be easily recognizable and
consequently, selecting the better choice may be relatively easy. In contrast, the
difference between a good and an average response is less recognizable, which then
makes the choice more complex. Therefore, the good-average response format was used
to reduce the contrast effect.

Five different actors were used for the 20 voice recordings. Care was taken to
ensure that each actor had an equal number of recordings (i.e., four recordings each) and
an equal number of good and average responses (i.e., two good responses and two
average responses). In addition, the same pair of actors did not appear in more than one interview scenario (i.e., the 10 interview scenarios had different combinations of actors).

To check for potential cueing effects due to the voice differences of the actors and technical aspects of the audio recordings, a sample of 11 doctoral students at a southeastern university were asked to rate each of the 20 voice recordings on three aspects – clarity, volume, and understandability. Similar to Maurer and Lee (2000) and Maurer (2002), the raters used a five-point Likert scale to note their level of agreement for each aspect (1 = strongly disagree to 5 = strongly agree). One-way analysis of variance found significant differences between the five actors for each of the three aspects [clarity: $F(4, 215) = 8.92, p < .01$; volume: $F(4, 215) = 4.37, p < .01$; understandability: $F(4, 215) = 21.08, p < .01$]. Post hoc analysis revealed one actor’s voice to be problematic. Thus, the candidate responses initially recorded using the problematic voice was re-recorded with a new voice.

An updated survey of the 20 voice recordings with the changed voice was sent to another sample of current and former doctoral students at a southeastern university. The survey was completed by 11 respondents. For those voice actors that remained the same, the data from the first sample was combined with the data from the second sample. One-way analysis of variance revealed significant differences among the voice actors for two of the three measured aspects [clarity: $F(4, 391) = 3.24, p < .01$; volume: $F(4, 391) = 1.57, p = .18$; understandability: $F(4, 391) = 4.697, p < .01$]. Based on these results, it was determined that the best way to control for voice differences is to use a single voice for all 20 recordings. Thus, the candidate responses were re-recorded using a single female voice.
Study: Part One

Participants and Setting

As previously noted, the setting was the healthcare staffing industry. The participants for the expert sample were recruiters employed by healthcare staffing companies that have operations within the United States. For the expert sample, the online experiment was distributed using email and LinkedIn messages. The non-expert sample was undergraduate students from several southeastern universities. For the non-experts, the online experiment was distributed by their class instructor via a link in an email.

Both the experts and non-experts were randomly assigned to either an intuitive or an analysis condition, thereby creating four experimental groups [i.e., expert-intuition (N = 32); expert-analysis (N = 24); non-expert-intuition (N = 42); non-expert-analysis (N = 41)]. The number of participants in the expert groups in the present study exceeds the samples used in some prior studies that use a similar methodological approach (e.g., Dane et al., 2012).

For example, Dane et al. (2012) conducted two studies to test the effect of expertise in making intuitive versus analytical decisions when solving a complex task. The task in study one involved determining the difficulty of basketball shots and in study two, identifying authentic versus fake designer handbags. All participants in both studies were undergraduate business students. The total expert sample in study one was 30 (between both the intuition and analysis conditions) and the total expert sample in study two was 25 (between both the intuition and analysis conditions). Authors do not specify the breakdown of experts in the intuition versus analysis conditions in both studies. Given
the total number of experts across both conditions (i.e., 30 in study one and 25 in study two) it can be inferred that each condition (i.e., intuition and analysis) had less than 20 participants in each of the two studies. Comparatively, each of the experimental conditions in the present study has a higher number of experts (i.e., \( N = 32 \) in expert-intuition and \( N = 24 \) in expert-analysis). In addition, each of the expert and non-experts groups exceeds the minimum number of 20 participants per experimental condition suggested by Hair, Black, Babin, and Anderson (2010).

Task and Procedure

Participants were asked to assume the role of an interviewer charged with the task of employee selection for a complex job (i.e., healthcare professionals). They were exposed to the 10 interview scenarios, and in each scenario, were asked to select the best response out of two candidate responses to the same interview question. While an alternate method could have been to ask the participants to rate the candidate responses to the interview questions without having to make a selection, in a typical employment selection context, interviewers are required to make a selection. Therefore, a forced choice between the candidates represented a more realistic employment selection situation. As a decision aid, for all interview questions, the participants were given the job dimension that was being assessed along with the definition of that job dimension (see Appendix B for a sample interview scenario as presented to the participants).

The experiment was administered electronically using Qualtrics survey software. The participants completed the task on their computers, and in the case of most of the expert sample, at their work desks. This method induced a natural work environment as the phone interviews are generally conducted at the recruiters’ desks. After the 10
interview scenarios, all participants completed a questionnaire that assessed the quality of the experimental manipulation, participants’ cognitive style, gender, age, and healthcare recruiting experience.

Experimental Conditions

Similar to prior studies that explored the effect of intuition in decision-making (e.g., Dane et al., 2012; Pretz, 2008), both the expert and non-expert samples were randomly assigned to one of four experimental conditions (see Figure 8).

Figure 8

*Experimental Conditions*

<table>
<thead>
<tr>
<th>Participants</th>
<th>Intuition</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experts</td>
<td>Expert-Intuition ($N = 32$)</td>
<td>Expert-Analysis ($N = 24$)</td>
</tr>
<tr>
<td>Non-experts</td>
<td>Non-Expert-Intuition ($N = 42$)</td>
<td>Non-Expert-Analysis ($N = 41$)</td>
</tr>
</tbody>
</table>

*Intuition Condition.* Participants in the intuition condition were asked to make their decision solely based on their intuition, first impression, and gut feeling. Similar to Dane et al., (2011) and Dane et al., (2012), they were asked not to think too hard and were encouraged to select the first decision that came to their mind (see Appendix C for specific instructions).
**Analysis Condition.** In order to induce analytical reasoning, the participants in the analytical condition were given explicit instructions to use deliberation, logic, and analysis. This method of inducing analytical cognitive processing is similar to the methods used in the studies cited above as well as Pretz (2008). Participants were encouraged to ignore any first impressions and gut feelings and instead to carefully consider all available information prior to making a decision (see Appendix D for specific instructions).

**Manipulation Check**

The manipulation check evaluated whether participants in each condition complied with expected cognitive manipulations. For this purpose, a four-item measure adapted from Dane et al. (2011) was used (see Table 3).

**Table 3**

*Manipulation Check – Intuition and Analysis Conditions*

<table>
<thead>
<tr>
<th>Response</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>strongly disagree</td>
</tr>
<tr>
<td>7</td>
<td>strongly agree</td>
</tr>
</tbody>
</table>

*Adapted from Dane et al. (2011)*

**Study: Part Two**

The purpose of the second part of the study was to answer the last research question (i.e., how does procedural accountability impact the accuracy of an expert’s intuitive judgment?) and correspondingly, to test hypothesis 4, which predicted that procedural accountability will negatively impact expert intuition. An additional sample
of experts placed in an intuition-procedural accountability condition was gathered and their decision accuracy was compared to that of individuals in the expert-intuition (no accountability) condition from the first part of the study.

Participants and Setting

Individuals in the procedural accountability condition included experienced healthcare recruiters ($N = 23$). All participants were assigned to an intuition condition. However, to induce procedural accountability, they were also told that they may be asked to explain the process they followed in making their decisions.

Task and Procedure

The task was consistent with the online process described earlier (i.e., they assumed to the role of a healthcare recruiter, reviewed the 10 interview scenarios, and for each scenario, selected the best candidate response).

Experimental Condition

All participants in the intuition-procedural accountability condition were given directions similar to those given to the individuals in the intuition condition in the first part of the study (see Appendix A). However, unlike those in the intuition condition, they were told that, at the end of the experiment, they will be required to justify the procedure they followed in making their decisions (see Appendix E for instructions). As depicted in Figure 9, the intuition-procedural accountability sample was then compared to the expert-intuition sample in study one.
Figure 9

Accountability Experimental Conditions

| Expert-Intuition-Procedural Accountability (N = 23) | Expert-Intuition (N = 32) |

Manipulation Check

At the end of the task, participants were asked to complete a manipulation check to evaluate if they complied with the manipulations. To assess this, the study adapted measures used by Dane et al. (2011) and Brtek and Motowidlo (2002). Table 4 details this five-item measure.

Table 4

Manipulation Check – Procedural Accountability and Intuition Conditions

<table>
<thead>
<tr>
<th>Response</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1=strongly disagree</td>
<td>Did you think you would have to explain the process you followed in selecting the best candidate response?</td>
</tr>
<tr>
<td>I selected the first choice that came to my mind</td>
<td></td>
</tr>
<tr>
<td>I made my decisions in the logical and systematic way</td>
<td></td>
</tr>
<tr>
<td>I relied on my gut instinct</td>
<td></td>
</tr>
<tr>
<td>I analyzed all available information in detail</td>
<td></td>
</tr>
<tr>
<td>Response range: 1=strongly disagree, 7=strongly agree</td>
<td></td>
</tr>
</tbody>
</table>

Adapted from Dane et al. (2011) and Brtek and Motowidlo (2002)
Measures

Decision Accuracy

As previously noted, the dependent variable is the accuracy of a hiring decision for a complex job. Accuracy was measured by calculating the number of times each participant selected the best candidate response in each of the 10 interview scenarios. Thus, the accuracy score could range from 0 (i.e., did not select the best candidate response in any of the interview scenarios) to 10 (selected the best candidate response in all of the interview scenarios).

In order to ensure the dependent variable was a valid measure of decision accuracy, three steps were followed. First, the candidate responses were intentionally written to have one candidate response stronger than the other. Second, the interview scenario scripts were given to four healthcare recruiting experts (average healthcare recruiting experience = nine years) to determine if there is a high level of agreement among the experts on which candidate response is better in each of the 10 interview scenarios. The candidate responses were adjusted until a minimum of three out of the four experts agreed on which was the better candidate response for every scenario.

Third, after the audio recordings were completed, five healthcare recruiting experts (average healthcare recruiting experience = 12 years) viewed the interview scenarios and listened to the candidate responses in the same online format as the participants would be expected to do in the subsequent study. This sample of expert raters did not include any of the experts that previously reviewed the interview scenario scripts. In addition to providing a definition of each job dimension, the expert raters were given the characteristics of a good response for every interview question. They were then
tasked to select the best candidate response in each of the 10 interview scenarios. As illustrated in Table 5, there was a high level of agreement among experts. Therefore, it was determined that in the full study, a participant’s accuracy score would be calculated as the number of times they selected the candidate response that was consistent with the best response identified by the experts in the pre-test.

Table 5

*Expert Agreement on Best Candidate Response*

<table>
<thead>
<tr>
<th>Interview Scenario</th>
<th>Percentage of agreement on the best candidate response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Attention to Detail</td>
<td>100</td>
</tr>
<tr>
<td>2) Attitude</td>
<td>100</td>
</tr>
<tr>
<td>3) Dependability</td>
<td>100</td>
</tr>
<tr>
<td>4) Communication</td>
<td>80</td>
</tr>
<tr>
<td>5) Client Focus</td>
<td>100</td>
</tr>
<tr>
<td>6) Flexibility</td>
<td>100</td>
</tr>
<tr>
<td>7) Honesty</td>
<td>80</td>
</tr>
<tr>
<td>8) Planning and Organization</td>
<td>80</td>
</tr>
<tr>
<td>9) Professionalism</td>
<td>100</td>
</tr>
<tr>
<td>10) Responsiveness</td>
<td>100</td>
</tr>
</tbody>
</table>

*N = 5*

Cognitive Style

Consistent with the dual process view of information processing, and following Dane et al. (2011), Pretz (2008), and Pretz and Totz (2007), cognitive style was measured using the rational-experiential-inventory (Pacini & Epstein, 1999). The instrument includes a 10-item measure of rational engagement (i.e., preference for analysis) and a 10-item measure of experiential engagement (i.e., preference for intuition). Each item had
responses ranging from 1 (definitely not true of myself) to 5 (definitely true of myself).

Each item is provided in Table 6 below.

Table 6

*Rational-Experiential-Inventory*

<table>
<thead>
<tr>
<th>Rational Engagement Scale</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I try to avoid situations that require thinking in depth about something (-)</td>
<td></td>
</tr>
<tr>
<td>I enjoy intellectual challenges</td>
<td></td>
</tr>
<tr>
<td>I don’t like to have to do a lot of thinking (-)</td>
<td></td>
</tr>
<tr>
<td>I enjoy solving problems that require hard thinking</td>
<td></td>
</tr>
<tr>
<td>Thinking is not my idea of an enjoyable activity (-)</td>
<td></td>
</tr>
<tr>
<td>I prefer complex problems to simple problems</td>
<td></td>
</tr>
<tr>
<td>Thinking hard and for a long time about something gives me little satisfaction (-)</td>
<td></td>
</tr>
<tr>
<td>I enjoy thinking in abstract terms</td>
<td></td>
</tr>
<tr>
<td>Knowing the answer without having to understand the reasoning behind it is good enough for me (-)</td>
<td></td>
</tr>
<tr>
<td>Learning new ways to think will be very appealing to me</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experiential Engagement Scale</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I like to rely on my intuitive impressions</td>
<td></td>
</tr>
<tr>
<td>Intuition can be a very useful way to solve problems</td>
<td></td>
</tr>
<tr>
<td>I often go by my instincts when deciding on a course of action</td>
<td></td>
</tr>
<tr>
<td>I don’t like situations in which I have to rely on intuition (-)</td>
<td></td>
</tr>
<tr>
<td>I think there are times when one should rely on one’s intuition</td>
<td></td>
</tr>
<tr>
<td>I think it is foolish to make important decisions based on feelings (-)</td>
<td></td>
</tr>
<tr>
<td>I don’t think it is a good idea to rely on one’s intuition for important decisions (-)</td>
<td></td>
</tr>
<tr>
<td>I generally don’t depend on my feelings to help me make decisions (-)</td>
<td></td>
</tr>
<tr>
<td>I would not want to depend on anyone who described himself or herself as intuitive (-)</td>
<td></td>
</tr>
<tr>
<td>I tend to use my heart as a guide for my actions</td>
<td></td>
</tr>
</tbody>
</table>

*Response range: 1 = definitely not true of myself, 5 = definitely true of myself*

*(-) = reverse scored item*

*Adapted from Pacini and Epstein (1999)*
Domain Expertise

As previously noted, the selection of an expert and non-expert sample was deliberate. The expert sample included those who have prior experience in healthcare recruiting. Compared to an individual with no formal training and experience in the field, a healthcare recruiter who has at least completed the new-hire training process would already possess a reasonable amount of knowledge on how to accurately qualify a healthcare professional. For the non-expert sample, the participants were individuals with no healthcare recruiting experience.

Gender

Prior studies have found gender affected how individuals process information (e.g., Allinson & Hayes, 1996; Epstein et al., 1996). Therefore, consistent with Dane et al. (2011), Dane et al. (2012), and Norris and Epstein (2011), this study controlled for gender.
CHAPTER FOUR: RESULTS

This chapter provides a comprehensive review of the data and the analysis pertaining to testing the hypotheses. First, preliminary analysis such as outliers, the normality of dependent variable, manipulation checks, cognitive style, and group differences due to the control variable (i.e., gender) is discussed. The results of the hypotheses testing are then presented.

Outliers

As an initial step in examining the data, outlier analysis was conducted in order to eliminate any effects due to observations that are distinctly different from the general sample. An evaluation of the data set revealed six participants who displayed inconsistencies in how they responded to survey questions. These respondents were deemed problematic and were removed. After eliminating those participants, as depicted in Figure 10, two other potential outliers were recognized. Upon further review, it was identified that both of the potential outliers were in the non-expert group and scored 2 out of 10. Since non-experts do not have healthcare recruiting experience, these scores were not surprising and cannot be considered outliers per se. Therefore, no further outliers were removed.
Normality of the Dependent Variable

Next, the normality of the dependent variable was assessed. The skewness (-.730) and kurtosis (.457) were within acceptable levels of + or – 1.96 at the .05 error level (Hair et al., 2010). Therefore, the dependent measure sufficiently meets the assumption of normality which is a requisite for the analytical methods used in the present study.

Manipulations

As previously detailed, participants were exposed to three experimental conditions: 1) intuition, 2) analysis, and 3) intuition-procedural-accountability. Experts and non-experts were assigned to both intuition and analysis conditions, which resulted in four groups: 1) expert-intuition, 2) non-expert-intuition, 3) expert-analysis, and 4) non-expert-analysis. In addition, for the second part of the study, a sample of experts was
assigned to the intuition-procedural-accountability condition resulting in an expert-intuition-procedural accountability group.

In order to induce the desired condition, participants in each experimental condition were given specific instructions on how to make their decisions (see Appendix C, D, and E). An analysis of the manipulation check questions was conducted to determine if the participants complied with these manipulations. Previous experimental studies have shown that some participants may fail to comply with instructions (e.g., Pretz, 2008). Therefore, to increase the accuracy of the final results, it is important to examine the data to ensure that only the participants that satisfactorily complied with the manipulation are included in hypotheses testing. To this end, in the present study, participants in each of the experimental groups were analyzed in order to eliminate those that did not adhere to the manipulations.

Specifically, participants were given a four-item questionnaire to check if they complied with the instructions. Two of those statements measured intuitive strategy (i.e., “I selected the first choice that came to my mind”, “I relied on my gut instinct”) while two measured analytical strategy (i.e., “I made my decisions in a logical and systematic way”, “I analyzed all available information in detail”). In addition to the four aforementioned statements, individuals in the expert-intuition-procedural-accountability group were given an additional question to measure if they felt accountable for the decision-making procedure (i.e., “Did you think you would have to explain the process you followed in selecting the best candidate response?”). All items were measured using a 7-point Likert scale that ranged from strongly disagree to strongly agree.
In the expert-intuition group, two participants were eliminated that selected “neither disagree nor agree” to both intuition manipulation check statements. One participant was deleted who selected “somewhat disagree” to the “I relied on my gut instinct” statement. Seven participants who didn’t agree with the “I selected the first choice that came to my mind” statement but agreed with “I relied on my gut instinct” statement was retained. This is because, although intuition is generally considered fast, there is some debate as to whether intuition is always fast (Dane & Pratt, 2007). Thus, although those seven participants did not select the first choice, they agreed that they used their intuition by using “gut instinct” to make decisions. The final number of participants in the expert-intuition group was 32.

In the non-expert-intuition group, one participant was eliminated who selected “neither disagree nor agree” to both intuition manipulation check statements. Three participants were eliminated who did not agree with the “I relied on my gut instinct” statement. Six participants who did not agree with the “I selected the first choice that came to my mind” statement but agreed with the “I relied on my gut instinct” statement was retained due to the reasons previously stated. The final number of participants in the non-expert-intuition condition was 42.

In the expert-analysis group, with the exception of one, all participants who completed the experiment agreed with the manipulation check statements. The one exception selected “neither disagree nor agree” to “I analyzed all available information in detail” and agreed with the “I made my decisions in a logical and systematic way” statement. Since the participant agreed with at least one statement and was neutral to the other, there is sufficient evidence that the analytical condition was induced. Thus, the
response was retained. The final number of participants in the expert-analysis condition was 24.

In the non-expert-analysis group, six participants were eliminated because they did not agree with either one or both analysis manipulation check statements. Three were retained who were neutral (i.e., selected “neither disagree nor agree”) to “I analyzed all available information in detail” but agreed with the “I made my decisions in a logical and systematic way” statement. All other participants agreed with both statements. As a result, 41 participants in the non-expert-analysis condition were used in the final analysis.

In the expert-intuition-procedural-accountability group, 14 participants were eliminated as they did not agree that they felt accountable for the procedure used in making their decisions. Thus, 23 participants were used in the final analysis.

To further evaluate if the intuition and analysis manipulations were successful, univariate analysis of variance was used on the four manipulation check statements. As depicted in Table 7, the tests revealed a significant difference between the conditions on how they responded to each of the four manipulation check statements. For the two statements that measured if the intuition condition was induced, ratings of the participants in the intuition condition (\(M = 5.66, SD = 1.30\) and \(M = 6.00, SD = .79\) respectively) were significantly higher than the participants in the analysis condition \([M = 2.89, SD = 1.48, F(1,137) = 138.40, p < .01, \eta^2 = .50\) and \(M = 3.40, SD = 1.58, F(1,137) = 233.93, p < .01, \eta^2 = .53\) respectively]. Similarly, For the two statements that measured if the analysis condition was induced, ratings of the participants in the analysis condition (\(M = 6.14, SD = .77\) and \(M = 6.12, SD = .86\) respectively) were significantly higher than the participants in the intuition condition \([M = 5.66, SD = 1.37, F(1,137) = 7.85, p < .05, \eta^2 =\)
.04 and $M = 5.41$, $SD = 1.57$, $F(1,137) = 10.76$, $p < .01$, $\eta^2 = .07$ respectively]. Based on these results, it was concluded that the manipulations were successful.

Table 7

ANOVA Results for Manipulation Check Statements

<table>
<thead>
<tr>
<th>I selected the first choice that came to my mind</th>
<th>Mean Intuition Condition $N = 74$</th>
<th>Mean Analysis Condition $N = 65$</th>
<th>$F (1, 137)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>I relied on my gut instinct</td>
<td>6.00</td>
<td>3.40</td>
<td>233.93**</td>
</tr>
<tr>
<td>I made my decisions in a logical and systematic way</td>
<td>5.66</td>
<td>6.14</td>
<td>7.85*</td>
</tr>
<tr>
<td>I analyzed all available information in detail</td>
<td>5.41</td>
<td>6.12</td>
<td>10.76**</td>
</tr>
</tbody>
</table>

** $p < .01$, * $p < .05$

Cognitive Style

Confirmatory factor analysis (CFA) was used to determine if the Rational-Experiential-Inventory items fit a two-factor model [i.e., rational (analytical) and experiential (intuitive)] as posited by the dual-process theory. An image of the initial measurement model ($\chi^2 = 421.91$) is provided in Figure 11. After the model was specified and estimated, multiple indices were examined to determine model fit. As reported in Table 8, the initial model did not meet acceptable fit per guidelines provided by Hair et al. (2010).
Figure 11

Initial Measurement Model
Table 8

*Initial Measurement Model Fit Results*

<table>
<thead>
<tr>
<th>Fit Index</th>
<th>Desired</th>
<th>Initial Model</th>
<th>Final Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square/Degrees of Freedom (CMIN/DF)</td>
<td>Below 2 preferred; 2-5 acceptable</td>
<td>2.50</td>
<td>1.58</td>
</tr>
<tr>
<td>Comparative Fit Index (CFI)</td>
<td>&gt; .90</td>
<td>.70</td>
<td>.96</td>
</tr>
<tr>
<td>Root Mean Square Error of Approximation (RMSEA)</td>
<td>&lt; .08</td>
<td>.10</td>
<td>.07</td>
</tr>
</tbody>
</table>

*Note: N = 139; Desired guidelines based on Hair et al. (2010)*

Thus, following recommended guidelines by Hair et al. (2010) items were eliminated one at a time until the model met acceptable fit ($\chi^2 = 53.87$, CMIN/DF = 1.58, CFI = .96, RMSEA = .07). In total, ten items with factor loadings less than .5 were eliminated. The final model had six items for the rational scale and four items for the experiential scale (see Table 9). Past research has found some evidence that the experiential scale may not be entirely unidimensional, but rather measure different aspects of intuition such as affective and automatic intuition (Pretz & Totz, 2007). This may account for the low factor loadings of many experiential scale items. However, even though the experiential scale was reduced to four items, based on a review of the wordings (i.e., face validity), it was determined that the items that were left captured the preference for intuitive decision-making sufficiently well.

All factor loadings of the final model were above the .5 standard noted by Hair et al. (2010) (see Table 9). Although the average variance extracted (AVE) for the two
constructs were slightly lower than .5 (rational = .48 and experiential .45), the composite reliabilities were greater than the .7 recommended standard (rational = .84, experiential = .76) by Hair et al. (2010). Per Fornell and Larcker (1981), a researcher may conclude adequate convergent validity based on reliability even though the average variance extracted is less than 50 percent. Thus, considering that composite reliability meets acceptable standards and all factor loading were above .5, it was determined that the model meets acceptable convergent validity.

To assess discriminant validity, the AVE was compared to the squared interconstruct correlation (SIC = .03) between the two factors. Since the AVEs for both constructs was greater than the SIC, discriminant validity was achieved. The Cronbach’s alphas for the final rational (.84) and experiential (.74) engagement scales were above the minimum acceptable level of .7 noted by Hair et al. (2010). Consequently, the items for each scale on the final model were averaged to form two indices (i.e., intuitive and analytical) for cognitive style.

Table 9

Final Items: Rational-Experiential Inventory

<table>
<thead>
<tr>
<th>Rational Engagement Scale</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>I try to avoid situations that require thinking in depth about something (-)</td>
<td>.72</td>
</tr>
<tr>
<td>I enjoy intellectual challenges</td>
<td>.57</td>
</tr>
<tr>
<td>I don’t like to have to do a lot of thinking (-)</td>
<td>.86</td>
</tr>
<tr>
<td>I enjoy solving problems that require hard thinking</td>
<td>.62</td>
</tr>
<tr>
<td>Thinking is not my idea of an enjoyable activity (-)</td>
<td>.74</td>
</tr>
<tr>
<td>Knowing the answer without having to understand the reasoning behind it is good enough for me (-)</td>
<td>.58</td>
</tr>
<tr>
<td>Experiential Engagement Scale</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>I like to rely on my intuitive impressions</td>
<td>.59</td>
</tr>
<tr>
<td>Intuition can be a very useful way to solve problems</td>
<td>.63</td>
</tr>
<tr>
<td>I often go by my instincts when deciding on a course of action</td>
<td>.89</td>
</tr>
<tr>
<td>I tend to use my heart as a guide for my actions</td>
<td>.51</td>
</tr>
</tbody>
</table>

*Response range: 1 = definitely not true of myself, 5 = definitely true of myself*

*(-) = reverse scored item*

**Differences Due to Gender**

Since prior studies have found gender to affect how individuals process information (e.g., Allinson & Hayes, 1996; Epstein et al., 1996), gender was used as a control variable. Univariate analysis of variance was used to measure differences in the decision accuracy score (i.e. dependent variable) based on gender. The test revealed a marginally significant difference between the groups due to gender \[F(1, 160) = 3.11, p = .08\]. Although some prior studies that controlled for gender have found a significant difference between gender and task performance (e.g., Dane et al., 2012, study 1), some have not (e.g., Dane et al., 2012, study 2). Thus, gender was controlled in the analysis of the present study.

Building on these results, the next section discusses the analysis and the findings of the hypothesis testing. Descriptive statistics and correlations among variables are provided in Table 10.
Table 10

Descriptive Statistics and Correlations

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Experiential Engagement (Intuitive)</td>
<td>3.56</td>
<td>0.68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Rational Engagement (Analytical)</td>
<td>4.21</td>
<td>0.71</td>
<td>-0.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Decision Accuracy Score</td>
<td>7.17</td>
<td>1.62</td>
<td>-0.14</td>
<td>0.32**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Expertise</td>
<td>0.49</td>
<td>0.50</td>
<td>0.08</td>
<td>0.30**</td>
<td>0.24**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Gender</td>
<td>0.52</td>
<td>0.50</td>
<td>0.06</td>
<td>0.13</td>
<td>0.14</td>
<td>0.15</td>
<td></td>
</tr>
</tbody>
</table>

Note: N = 162; Expertise (0 = Non-expert, 1 = Expert); Gender (0 = Male, 1 = Female); ** p < .01 (two-tailed)

Hypotheses Testing

Hypothesis 1 proposed that for complex jobs, the accuracy of a hiring decision is greater when the decision makers use an intuitive rather than an analytical decision-making process. Thus, to test this hypothesis, the decision accuracy score of those who were in the intuition condition (N = 74, M = 6.91, SD = 1.75) was compared to those who were in the analysis condition (N = 65, M = 7.25, SD = 1.47). Contrary to the hypothesis, at an absolute level, the mean of those in the analysis condition was, in fact, higher than those in the intuition condition. However, univariate analysis of variance showed no significant difference between the conditions [F(1, 135) = 1.568, p = .21]. Therefore, hypothesis 1 was not supported.

Hypothesis 2a proposed that for complex jobs, the accuracy of a hiring decision is greater when the interviewer is an expert and the interviewer uses intuitive rather than analytical decision processes. This hypothesis was tested by comparing the expert-
Hypothesis 2a proposed that for complex jobs, the accuracy of a hiring decision is greater when the decision maker using intuitive selection processes is an expert rather than a non-expert. To test this hypothesis, the expert-intuition group \((N = 32, M = 7.56, SD = 1.22)\) was compared to the non-expert-intuition group \((N = 42, M = 6.40, SD = 1.93)\). Univariate analysis of variance showed a significant difference between the groups \([F(1, 70) = 6.98, p < .01, \eta^2 = .09]\), thus confirming the hypothesis that experts perform better using intuition than non-experts. In contrast, when the expert-analysis \((N = 24, M = 7.37, SD = 1.56)\) and the non-expert analysis \((N = 41, M = 7.17, SD = 1.43)\) groups were compared, there was no significant difference in decision accuracy \([F(1, 61) = .25, p = .62]\). These findings suggest that even through expertise may increase the effectiveness of intuitive decision-making, expertise may not make a difference when it comes to analytical decision-making. The findings are consistent with Dane et al. (2012) who found expertise to amplify the effectiveness of intuitive decisions and not analytical decisions.

Hypothesis 3 proposed that for complex jobs, the accuracy of a hiring decision is greater when the selection method (i.e., intuitive versus analytical) is aligned with the interviewer’s cognitive style. In order to test this hypothesis, it was imperative to identify those whose cognitive style matched and those whose cognitive style did not match the employee selection method. This was accomplished using the following method. First,
the items of the corrected model for each of the rational and experiential measures were averaged to form two indices [i.e., 1) mean score for each participant on the rational scale and 2) mean score of each participant on the experiential scale]. Then, similar to Pretz (2008), those above the median for each index was categorized as high in intuitive (median = 3.75) or analytical (median = 4.33) style, and those at or below the median were categorized as low in intuitive or analytical style (high was coded 1 and low was coded 0). This resulted in two additional indices (i.e., one with high and low in intuitive style and the other with high and low in analytical style). Using these indices, those whose cognitive style matched the selection method (e.g., those in the intuition condition who were also high in intuitive style) were coded 1 and those whose cognitive style did not match the selection method (e.g., those in the intuition condition who were low in intuitive style) were coded 0. Univariate analysis of variance showed no significant difference [$F(1, 135) = .08, p = .78$] between those whose cognitive style matched the selection method ($N = 66, M = 7.12, SD = 1.79$) and those whose cognitive style did not match the selection method ($N = 73, M = 7.01, SD = 1.48$). Thus, hypothesis 3 was not supported.

Hypothesis 4 proposed that for complex jobs, procedural accountability will decrease an expert’s ability to make an effective intuitive decision. To test this hypothesis, the expert-intuition group ($N = 32, M = 7.56, SD = 1.22$) was compared to the expert-intuition-procedural-accountability group ($N = 23, M = 7.78, SD = 1.45$). Univariate analysis of variance showed that there was no significant difference [$F(1, 51) = .46, p = .50$] between the groups based on their decision accuracy score. Therefore, hypothesis 4 was not supported.
In summary, the results of the analysis indicated that hypothesis 2b, which proposed that expertise will increase the accuracy of an intuitive hiring decision, was supported. The remaining hypotheses were not supported.

Post-Hoc Analysis

The findings of Dane et al. (2012) suggest that non-experts perform better using analysis than intuition. Therefore, a post-hoc analysis was conducted to examine if these findings hold true in the present study. The analysis revealed a significant difference \( F(1, 79) = 4.15, p < .05, \eta^2 = .05 \) in task performance between the non-experts in the analysis and intuition conditions. Univariate analysis of variance showed that the non-experts in the analysis condition \( (N = 41, M = 7.17, SD = 1.43) \) performed better than the non-experts in the intuition condition \( (N = 42, M = 6.40, SD = 1.93) \). This finding suggests that, when the interviewers are non-experts, they are better off using an analytical approach as oppose to an intuitive approach to make selection decisions. The implications of the results are discussed in the following section.
CHAPTER FIVE: DISCUSSION, LIMITATIONS, AND FUTURE RESEARCH

The purpose of this study was to examine factors that impact the effectiveness of intuition in employee selection. First, the study attempted to understand if the findings of intuition research, that intuition can be an effective way to make decisions for complex tasks when the decision maker is a domain expert, hold true in an employee selection context. To this end, the study explored the impact of interviewer expertise on the accuracy of an intuitive versus analytical hiring decision when recruiting for a complex job. In addition, there is some evidence that individuals will make better decisions when their decision-making approach is aligned with their cognitive style (e.g., Brigham et al., Friedman et al., 1985). The present study tested if these findings extend to employee selection. Finally, the study examined the impact of procedural accountability on an expert’s ability to make an effective intuitive decision. To explore these relationships, a two-part experimental study was conducted using a sample of 79 expert interviewers and 83 non-expert interviewers. The hypotheses were tested by examining group differences via the analysis of variance statistical method.

Discussion

The present study contributes to our understanding of intuition. Although scholars have been attempting to delineate what intuition is and when it can be used effectively, there has been a scarcity of research that explores the role of intuition in making real-world organizational decisions. Specifically relating to employee selection, although
many managers use intuition to make hiring decisions (Nowicki & Rosse, 2002), scholars generally scorn upon the use of intuition by highlighting the biases of the intuitive process (e.g., Highhouse, 2008b). However, to the author’s knowledge, there are no studies that empirically examine contextual factors that could impact the actual use of intuition in employee selection. Through a rigorous experimental design that attempted to capture intuitive and analytical decision-making at the point of action, this study addressed this limitation by examining the role of job complexity, interviewer expertise, cognitive style, and procedural accountability on the effectiveness of intuitive hiring decisions.

This study found that, for the type of complex jobs considered in the present study (i.e. health care professionals), there is no significant difference between those who used intuition versus those who used analysis to make hiring decisions. Contrary to the hypothesis, those who used analysis ($M = 7.25$) scored a little better than those who used intuition ($M = 6.91$), albeit at an insignificant level. Upon further examination, the cause for this finding is the difference in task performance between experts and non-experts in each condition. Although experts scored marginally higher using intuition ($M = 7.56$) than analysis ($M = 7.37$), the non-experts scored significantly better using analysis ($M = 7.17$) than intuition ($M = 6.40$). Thus, the combined effect of experts and non-experts in each condition caused those who used analysis to have a higher score than those who used intuition.

The finding that there is no significant difference between using intuition or analysis to make hiring decisions indicates that, perhaps, for complex jobs, intuition may be as good as analytical judgment to make hiring decisions. Most arguments against the
use of intuition in employee selection are based on hiring decisions made for low complexity jobs (e.g., e.g., Conway et al., 1995; Huffcutt & Arthur, 1994; Levashina et al., 2014; Wiener & Cronshaw, 1988). Recall that a complex job was defined as a position that has many tacit elements that lead to successful job performance. As such, a low complexity job is one that has only a few tacit elements that lead to job success which makes it relatively easier to determine and measure the criteria for successful job performance. Therefore, intuition may not be effective for low complexity jobs.

However, as job complexity increases, studies have found the effectiveness of analytical techniques to diminish (Huffcutt et al., 2001; Levashina et al., 2014; Pulakos & Schmitt, 1995). This is because, as job complexity increases, it becomes increasingly difficult to determine the criteria for job success, which makes it problematic to develop objective measures to assess a candidate’s ability to be successful on the job. Therefore, analytical hiring methods may not provide a significant advantage over intuition in making hiring decisions for complex jobs. In fact, in the general intuition research, there is some evidence that intuitive decisions are better than analytical decisions when solving complex tasks (e.g., Dijksterhuis, 2004).

In the present study, even though there was no support to indicate that intuition would be better than analysis, the findings do strengthen the argument that intuition may at least be as good as analysis to make decisions for complex jobs. Further, on a broader level of decision-making beyond an employee selection context, given the fast-paced nature of work environments, if there is no difference between intuitive and analytical decision-making for complex tasks, the relative speed of intuition may make it a more appealing option. For example, organizational managers often find themselves in
situations where perfect information relating to a particular business decision is not available or takes too much time and money to obtain. In such situations, an intuitive decision may be the most practical option.

When experts are considered, the present study found that those in the analysis condition did not perform any better than those in the intuition condition. This finding is relevant to research that explores the effect of analysis on expert judgment. When information relevant to the decision is provided, one would expect an expert to be able to identify the most pertinent set of information and use that data to make a good decision. However, in the present study, the experts who were asked to analyze all the information before making a decision did not do any better than those who were asked to ignore that information and only use their intuition. It might be because, due to the complex cognitive maps that are developed through years of training, experts are able to quickly capture the information they need with a mere glance of the data (Chase & Simon, 1973a). Therefore, increased focus on analyzing the data may not necessarily provide additional insight for experts.

Related to the above, it should be noted that the amount of information provided to the participants of this study was not extensive. Accordingly, in an organizational decision-making environment where more information is available to the decision maker, it is yet to be empirically tested if experts are similarly able to quickly capture the relevant information to make an effective intuitive decision. This would be an interesting area for future research.

The most impactful finding of the present study is that experts made better intuitive hiring decisions than non-experts. This finding is significant for two main
reasons. First, it extends the prevalent argument in intuition research (i.e., that intuition is an effective form of decision-making only when the decision maker is a domain expert) to the arena of employee selection, and in a broader context, to the prediction of human behavior. Thus far, most studies that empirically examine the impact of intuition has focused on its effect on aspects such as solving practical problems (Pretz, 2008), creativity (Dane et al., 2011), rating the difficulty of basketball shots, and authenticating designer handbags (Dane et al., 2012). In the aforementioned studies, the focus is on an individual’s intuitive ability to be successful in a particular task. But, the present study takes this a step further by examining an individual’s intuitive ability to judge another person’s capacity to be successful in a particular task (i.e., a job). Consequently, the findings suggest that not only does expertise increase one’s intuitive ability to solve a given task; expertise may also increase an individual’s intuitive ability to judge another person’s capacity to be successful in a particular task.

Second, the result challenges the existing notion among scholars that the ability to make good intuitive hiring decisions does not increase with experience [referred to as the “myth of expertise” (Highouse, 2008b)]. As previously noted, an employee selection environment typically has many characteristics that are considered to be conducive to intuitive decision-making [i.e., uncertainty, complexity, time pressure, insufficient data, and multiple solution possibilities (Agor, 1986; Baldacchino et al., 2015; Burke & Miller, 1999)]. This is especially true when recruiting for a complex job as intuition has been found to be effective for complex tasks (e.g., Dijksterhuis, 2004). Given such an environment that is prone to effective intuitive decision-making, the general intuition research has shown that expertise does increase one’s ability to make effective intuitive
decisions (e.g., Dane et al., 2012). Therefore, the findings of the present study suggest that perhaps scholars were too premature in discounting the impact of expertise on intuitive hiring without fully understanding when it might be useful (e.g., for a complex job). The “myth of expertise” in employee selection may not be a myth after all.

It is important to note that the argument here is not that we should abandon analytical hiring methods in favor of intuition. In fact, the experimental design of the present study included elements that are consistent with analytical hiring techniques: 1) the interview questions were developed through a laborious process following the critical incident technique, 2) the interview questions were situational questions which are part of a highly structured interview format, 3) the interviews were standardized where both candidate responses were for the same interview question, and 4) decision aids were provided in the form of the job dimension and its definition. Therefore, the argument is that, when the interviewer is an expert and the job is complex, perhaps we should not merely rely on analytical techniques but give some weight to the interviewer’s intuitive judgment.

As previously noted, Dane et al. (2012) found that non-experts performed better using analysis than intuition. Although the authors did not specify if the differences were statistically significant, their results suggest that an analytical approach may be better for non-experts than an intuitive approach. Through a post-hoc analysis, the present study explored whether non-experts performed significantly better when they used an analytical approach compared to an intuitive approach. While not originally hypothesized, this result may provide useful insight as to what type of decision-making approach may be better suited for non-experts (e.g., owners of a small family business). Because non-
experts do not have the complex cognitive schemas that enable experts to make effective intuitive decisions, their intuitive judgments are often nothing more than a guess with an equal probability of being correct or incorrect. However, when non-experts use an analytical approach, even though they may not know precisely what information is critical to solving the problem (Pretz, 2008), the deliberate thinking process may unearth elements that lead them towards, or at least increase their chances of, making the correct decision. Therefore, when the decision maker is a non-expert, an analytical decision-making approach may be more effective than relying on their intuition.

With regard to the cognitive style of the decision maker, this study found that those whose cognitive style matched the employee selection method did not perform significantly better than those whose cognitive style did not match the employee selection method. Prior research has found that individuals prefer to use a decision-making strategy that is in line with their cognitive style (e.g., Chen et al., 2008, Miles & Sadler-Smith, 2014). Although congruence between cognitive style and strategy has, in some cases, led to better outcomes (e.g., Brigham et al., Friedman et al., 1985), there is some evidence that individuals may perform better when they use a decision strategy that is opposite to their cognitive style (e.g., Dane et al., 2011). Further, as found in the present study, the association between cognitive style and decision strategy may not impact decision quality at all. Given these results, it seems that there may be other factors (e.g., task characteristics) which influence the relationship between cognitive style, decision strategy, and decision quality. Therefore, further exploration into contextual factors may be required to fully understand these relationships.
The second part of this study examined the impact of procedural accountability on expert intuition. It was hypothesized that procedural accountability will have a negative impact on an expert’s ability to make effective intuitive decisions. Contrary to the hypothesis, the experts in the procedural accountability condition \((M = 7.78)\) did slightly better than those in the intuition condition \((M = 7.56)\). However, it should be noted that the difference between the groups was not significant. The finding that there is no significant difference between the experts who were held accountable and those who were not held accountable suggests that, within the context of this study, there is no dark side to accountability. That is, within a complex organizational decision-making situation such as employee selection, procedural accountability does not appear to have a negative effect on expert intuition.

**Academic Contributions and Practical Implications**

This study makes several important contributions to academic research. First, this study extends our understanding of intuition. Thus far, the conceptual development of intuition has been limited due to the difficulty in directly examining the intuitive process (Baylor, 2001). Since intuition is an unconscious, automatic, and rapid process, it is challenging to assess the actual use of intuition. Due to the complications in measuring the actual use of intuition, most studies measure one’s preference for intuitive decision-making (Blume & Covin, 2011) or use self-reported measures that rely on retroactive accounts (e.g., Busenitz & Barney, 1997; Miles & Sadler-Smith, 2014; Nowicki & Rosse, 2002, Pretz & Totz, 2007).

There are two issues with this methodology. One is that self-reported measures are susceptible to recollection bias and the other is that people tend to glorify their
successes while minimizing failures (Dimov, 2007). Especially because intuition is a nonconscious and automatic process, it is difficult to assume that people will be able to accurately recollect the cognitive process they used during a past event. In response, scholars have called for the use of experimental methods to better capture the cognitive process during the point of action (Baldacchino et al., 2015; Fisher, 2008; Hodgkinson & Clark, 2007). As detailed in the research methodology section, through a rigorous experimental design, this study adhered to this call by attempting to capture the actual use of intuition at the point of action.

Second, there is a scarcity of applied research relating to intuition in general (Khatri & Ng, 2000) and intuitive prediction of behavior in particular (Highhouse & Kostek, 2013). More specifically, there is a lack of empirical work examining the role of intuition in employee selection (Highhouse & Kostek, 2013; Miles & Sadler-Smith, 2014). Scholars have studied aspects such as the reasons an interviewer uses a particular cognitive strategy (Miles & Sadler-Smith, 2014) and the interviewer’s reaction to intuitive or analytical selection methods (Chen et al., 2008). However, we had little empirical evidence of how intuition, especially expert intuition, impacts the effectiveness of a hiring decision. Through the findings of the present study, we now have a better understanding of when intuition might be useful in employee selection (i.e., when the job is complex and the interviewer is an expert).

Third, this study highlights the importance of context in employee selection (Colarelli & Thompson, 2008). Scholars who argue that expert intuition is ineffective in employee selection tend to generalize this notion without paying close attention to contextual factors such as job complexity. In addition, not much is known about factors
that affect the validity of analytical selection methods (Huffcutt et al., 2004). As a result, we had limited knowledge of how contextual factors such as job complexity impact the effectiveness of intuitive and analytical hiring processes. The present study attempted to address this specific limitation by examining the impact of intuition when recruiting for complex jobs. Further research is required to identify other possible contextual factors that may impact intuitive hiring decisions.

Finally, scholars have called for future research to study cognition through the lens of dual-process theory as opposed to the unitary view (Baldacchino et al., 2015). As described earlier, the unitary view considers intuition and analysis to be opposite ends of a single continuum (e.g., Allinson & Hayes, 1996; Baylor, 1997; Simon, 1992). Due to issues with measurement, it has been argued that the unitary view should be abandoned (Hodgkinson et al, 2009b). In contrast, the dual-process theory of cognition views intuition and analysis as two separate independent systems (Sadler-Smith & Burke-Smalley, 2015). Although some of the intuitive and analytical style measurement items of the Rational-Experiential-Inventory were eliminated during confirmatory factor analysis, the scale still fit a two-factor model and there was no significant correlation between the two factors. Accordingly, the results of the present study are consistent with the two-factor solution for intuition and analysis and therefore, support the dual process theory.

From a practitioner perspective, the findings of the present study provide some insight as to when it may be acceptable to give some consideration to the role of intuition when making hiring decisions. This study found that when recruiting for a complex job, interviewer expertise has a positive impact on intuition. Furthermore, when the interviewer is an expert, their intuitive decisions were as good as their analytical
decisions. Therefore, perhaps it might be prudent to give some weight to an expert interviewer’s intuitive judgment when hiring for complex jobs.

On the other hand, this study also found that non-expert interviewers perform significantly better when using analysis than intuition. Accordingly, in situations where the interviewers are non-experts (e.g., a new manager with no prior hiring experience), it seems imperative that they are provided with the necessary training, tools, and processes that will allow them to make analytical hiring decisions.

Limitations

As with any research, this study has a number of limitations. First, since intuition is a nonconscious process, it is difficult to determine if the participants actually used intuition in making their decisions. Although the method and instructions to prompt intuitive decision-making was consistent with prior research (Dane et al., 2012; Pretz, 2008), and the final analysis only included the participants who successfully passed the manipulation checks, it is still possible that some participants may not have entirely relied on their intuition to make decisions. For instance, based on their responses to the manipulation check questions, approximately 1/3 of the participants in the intuition condition used analysis more than intuition. Even though they were asked to use intuition alone, perhaps the participants were inclined to use their natural (or trained) predisposition to be analytical.

Second, recall that in each interview scenario, one candidate response was good and the other was average. The good-average response format, as opposed to a good-poor response format, was used to reduce the contrast between the two candidate responses and thereby make the decision to select the best response more complex. However, it is
likely that the good-average response format made the decision to select the best response too difficult which, in turn, may have affected the results.

Third, the dependent variable, accuracy of a hiring decision, was not a predictive measure of job performance (i.e., a measure that assesses the actual job performance of the interviewees). Recall that the candidate responses were scripted and validated through a two-step process using expert samples. Although similar techniques have been used in prior research (Maurer, 2002; Maurer & Lee, 2000), this type of validation may not be as accurate as using actual interviewees and measuring their success through a subsequent evaluation of their job performance.

Fourth, participants completed the experiment remotely (i.e., on their computers at their desks) rather than in a more controlled lab environment. This method was used as it induced a natural work environment since the candidate interviews are generally conducted at the recruiters’ desks. Furthermore, the method adheres to the call from scholars to conduct intuition research related to organizational decision-making in field settings (Dane et al., 2012). However, compared to a lab environment, the method used in this study does make the participants more susceptible to environmental factors that may disrupt their task performance and/or their attention to study details. For example, there were notable differences in task completion times among the participants.

Fifth, with regard to the manipulation to induce procedural accountability, about 38 percent of the participants failed the manipulation check. This result does bring up a concern that participants may not have felt accountable. Since the participants completed the experiment remotely with no direct contact with the researcher, perhaps they felt it unlikely that would have to justify their decision-making approach to anyone. However,
it should be noted that those who failed the manipulation check were not used in the final analysis.

Sixth, half of the items in the Rational-Experiential-Inventory were removed during confirmatory factor analysis in order to obtain acceptable model fit. In the final model, the items that measured rational (i.e., analytical) and experiential (i.e., intuitive) cognitive style were reduced to six and four respectively. There is some evidence that the experiential scale may not be entirely unidimensional (Pretz and Totz, 2007) which might explain the low factor loadings of many experiential scale items. In addition, having a large number of reverse coded items may also have contributed to the issue.

Finally, the sample size was relatively small which limited statistical power. Furthermore, although this study used a sample of real-world decision makers in their natural work setting, it is still susceptible to a drawback of most experimental research, which is limited generalizability (McGrath, 1981).

Directions for Future Research

The present study was an attempt to advance our knowledge of when intuition can be useful to make hiring decisions. In doing so, it also extended our understanding of the role of intuition in the broader decision-making arena. The insights gained from this study provide numerous opportunities for future research.

For instance, this study explored the effect of intuition in an organizational decision-making context, specifically employee selection. Due to the difficulties in obtaining samples of organizational decision makers, most studies that empirically examine the role of intuition has focused on tasks that are not closely related to organizational decision-making situations (e.g., Dane et al., 2012; Dijksterhuis, 2004;
Pretz, 2008). Therefore, for us to fully understand the effects of intuition for organizational problems, more research needs to be conducted in real-world settings. With regard to employee selection, this study found intuition to be helpful when the interviewer is an expert and the candidate being recruited is a healthcare professional. To support the generalizability of this result, it will be insightful to test if these findings hold true for expert interviewers in other types of complex job settings such as executive level positions.

In addition, advances in neuroscience provide an opportunity for intuition to be measured through brain activity (Akinci & Sadler-Smith, 2012; Lieberman, 2000). As previously noted, the self-reported evidence of the use of intuition has its limitations in being able to truly identify if an unconscious cognitive process such as intuition was used. Thus, using neurological techniques to determine the role of intuition, especially in organizational decision-making situations, may provide significant insights into the impact of intuitive decision-making.

With regard to the relationship between cognitive style and its effect on decision quality, this study did not find conclusive evidence to support an association. While some prior research has found a match between cognitive style and decision strategy to produce better outcomes (e.g., Friedman et al., 1985), there is some evidence that a mismatch may be more desirable especially when it comes to increasing creativity (Dane et al., 2011). Therefore, further research is required to understand when an individual’s cognitive style impacts decision quality and when it does not.

Finally, even though a negative relationship between procedural accountability and expert intuition was hypothesized, it was not supported in the present study. This
result might be because the manipulation was not strong enough to induce the level of accountability that may make an expert forego their intuition in favor of a decision-making approach that they could more easily justify. It will be interesting to see if a controlled laboratory experiment with a stronger prompt for accountability provides a different result. Furthermore, future research should also consider other contextual factors that inhibit an expert’s ability to make effective decisions.

Conclusion

Although scholars have been studying intuition for decades, we still have a limited understanding of what intuition is, how it works, and when it can be useful. The purpose of the present study was to address the latter, which is, to expand our knowledge of when intuition may be beneficial in an organizational decision-making environment such as employee selection. By using a sample of real-world decision makers in their natural setting, the study found that when the interviewer is an expert and the position being hired for is complex; intuition is an effective way to make decisions. This finding is significant to academic research as it extends our understanding of when intuition can be useful to a domain (i.e., employee selection) where scholars have often discounted the use of intuition. For practitioners, these findings suggest that, when conditions for effective intuitive decision-making are sufficiently met, it may be prudent to give some consideration to intuitive judgment.
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APPENDIX A

10 Interview Questions and Answers
## Table 11: Interview Questions and Answers

<table>
<thead>
<tr>
<th>Job Dimension</th>
<th>Interview Question</th>
<th>Good Answer</th>
<th>Average Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention to Detail</td>
<td>In most of our positions, you often have a large patient load and you’re in a fast-paced environment. What would you do to avoid medical errors?</td>
<td>With each patient, I would spend time before seeing the patient to go through their medical history. Then, I will thoroughly evaluate the patient and make detailed notes of the session. And after each session, I will review the file to make sure I got everything right before I move on to the next patient.</td>
<td>No matter how fast paced the environment is, it is important to give each patient the time and attention that is required to give them proper care. I would thoroughly evaluate their condition and follow the correct protocol in treating the patient.</td>
</tr>
<tr>
<td>Attitude</td>
<td>A parent of one of your underage patients comes to your office angry and falsely accusing you of not taking proper care of her son. How would you respond?</td>
<td>I would remain calm and ask her politely what is bothering her. I will try to empathize with her situation as much as I can and will avoid arguing with her. I will explain the steps I have taken with her son to show her that I have followed the correct protocol in taking care of her son. After she leaves, I will write a record of her visit and the conversation.</td>
<td>I will invite her into my office and ask her to have a seat. I won’t argue with her but I will be clear that I have done my best for her son and assure her that I will continue to give him the best care possible. I will give her my supervisor’s contact information and tell her that she is welcome to talk to my supervisor if she has further concerns.</td>
</tr>
<tr>
<td>Dependability</td>
<td>Let's say you accept a position with us and two days before your start date, one</td>
<td>I will get another family member or a friend to help out with my sick family</td>
<td>I will call my supervisor and explain the situation to her. I will let her...</td>
</tr>
</tbody>
</table>

Appendix A
<table>
<thead>
<tr>
<th>of your family members come down with a cold. What will you do?</th>
<th>member so that I could report to work on my start date. know that I will do everything I can to report to work on time. But, in case my family member's sickness doesn't get better, I might have to delay my start date a little. I will take care of my family member and get to work as soon as possible.</th>
</tr>
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<tbody>
<tr>
<td>Communication</td>
<td>Let's say you are phone interviewing for a position with one of our client facilities and the manager says to you &quot;so, tell me why you would be a good fit for this position?&quot; How would you respond? I usually prepare for an interview by writing down key points about my background that I think will be most applicable to the job. When I'm asked that question, I will present those points so that the manager can see how my experience meets the specific requirements of the position. I always have my resume in front of me when I'm on a phone interview. If I'm asked that question, I will present my experience in reverse chronological order so that I can provide the manager with a thorough understanding of my skills and experience.</td>
</tr>
<tr>
<td>Client Focus</td>
<td>While working at one of our client facilities, a need may arise where you are asked to take on additional responsibilities beyond your busy patient schedule. Let’s say your supervisor at the client facility calls you and asks if you will be willing to train one of their new employees. I will say yes to my supervisor and work out my schedule to accommodate training the new employee. I have previous experience training new employees while managing a large patient load. Since I have a busy patient schedule, taking on this responsibility may have a negative impact on attending to my patients. So, I will tell my supervisor that I will be happy to train the new employee if my schedule can be adjusted so that I have time to do the training.</td>
</tr>
<tr>
<td>Flexibility</td>
<td>If the position meets everything else that I am looking for and if the pay is competitive for the job location and the job responsibilities, I will take the position even if it’s a little less than what I’m making now.</td>
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<tr>
<td>Assume we made you an offer for one of our positions. How would you respond if the position meets everything you're looking for with the exception that the pay is slightly below what you're making now?</td>
<td></td>
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<tr>
<td><strong>Honesty</strong></td>
<td>I will let the manager know the extent of my knowledge and experience relating to the task. I will let him know that I am willing to do the task but will need training.</td>
</tr>
<tr>
<td>Let's say you're interviewing at one of our client facilities and the hiring manager asks you if you're able to do a critical task. This task, if done incorrectly, may have disastrous consequences. While you have a basic understanding of the task and little experience with it, you do have extensive experience with similar tasks. How would you respond?</td>
<td></td>
</tr>
<tr>
<td><strong>Planning and Organization</strong></td>
<td>On every appointment, I allocate a few minutes after the meeting to review the session and make notes. Then, on Friday afternoons, I normally block out a few hours to complete paperwork.</td>
</tr>
<tr>
<td>You have a large patient load so your schedule is hectic. As you know, it is critical that appropriate forms, such as Medicaid reimbursement forms, are completed promptly and thoroughly.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How would you manage that?</td>
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<tr>
<td><strong>Professionalism</strong></td>
<td>You discovered an error you made in treating a patient. It was a minor error and there is no noticeable harm to the patient. What will you do?</td>
</tr>
<tr>
<td><strong>Responsiveness</strong></td>
<td>During the recruiting process with our company, I may need to contact you urgently with regard to a placement at one of our clients. In case you're on vacation, how will I be able to reach you?</td>
</tr>
</tbody>
</table>
APPENDIX B

Sample Interview Scenario as seen by Participants
Appendix B

Figure 12

Sample Interview Scenario as seen by Participants

The interview question below is designed to assess a candidate's "Attention to Detail". Attention to detail is defined as:

"being detailed and thorough in completing work tasks."

Complete the following steps:

- Read the interview question
- Listen to each of the two candidate responses
- Select the best response

For instructions on how to make your decision, please click on the link below:
Link to instructions

Interview Question: In most of our positions, you often have a large patient load and you’re in a fast-paced environment. What would you do to avoid medical errors?

Candidate Responses: Use the "►" icon to play each response.

Response X:

Response Y:

Select the Best Response: Click on the shaded box below that represents your choice.

Response X

Response Y
APPENDIX C

Instructions for the Intuition Condition
Appendix C

Figure 13

Instructions for the Intuition Condition

Please follow the instructions below when selecting the best response:

- Select the **first choice** that comes to your mind
- Avoid thinking very hard about what the “right” answer is
- Let your **intuition** and **gut instinct** guide you and make the decision that feels right to you
- Your decision should be based on your **first impression** about the candidates
- Do **not** try to analyze information or apply additional logic beyond your intuitive response
APPENDIX D

Instructions for the Analysis Condition
Appendix D

Figure 14

Instructions for the Analysis Condition

Please follow the instructions below when selecting the best response:

- **Do not** select the first choice that comes to your mind
- Carefully consider **all** available information before making a decision
- You should **analyze** the options and make your decision in a **logical** and **systematic** way
- **Ignore** any first impression or gut instinct based choices
APPENDIX E

Instructions for the Intuition-Procedural Accountability Condition
Appendix E

Figure 15

Instructions for the Intuition-Procedural Accountability Condition

Please note that at the end of the exercise you may be asked to write a brief explanation of the process you followed when selecting the best response.

Please follow the instructions below when selecting the best response:

- Select the first choice that comes to your mind
- Avoid thinking very hard about what the “right” answer is
- Let your intuition and gut instinct guide you and make the decision that feels right to you
- Your decision should be based on your first impression about the candidates
- Do not try to analyze information or apply additional logic beyond your intuitive response