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Development and Validation of a Situational Judgment Test of Critical Social Thinking in the Workplace

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DEVELOPMENT AND VALIDATION OF A SITUATIONAL JUDGMENT TEST OF CRITICAL SOCIAL THINKING IN THE WORKPLACE

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ABSTRACT

Given the changing nature of today's workforce, it is becoming increasingly common, and at times even vital, for employees to be well-prepared for navigating complex social situations to fulfill everyday organizational demands (Grossman, Thayer, Shuffler, Burke, Salas, 2014). However, while effective interpersonal interactions are clearly required in many occupations, an ongoing deficiency of critical interpersonal knowledge, skills, and abilities (KSAOs) among employees has been widely recognized (Hays-Thomas, Bowen & Boudreaux, 2012). The current study seeks to answer a critical call in the literature for better methods of assessing and developing employee interpersonal KSAOs, especially in terms of how to assess employee effectiveness in the application of these KSAOs to socially complex situations. Specifically, the current study develops and provides initial validity evidence for a situational judgment test (SJT) of *critical social thinking* (CST), the underlying set of processes that put interpersonal KSAOs into practice. Using a two-fold approach, the development of SJT items and respective scoring keys (both SME and empirically computed) are first presented, followed by the results of an initial validation study conducted with the subsequent SJT measure, in order to confirm the structural fit and items via data collected from a sample of 191 MTurk participants. The internal consistency reliability of the SJT measure is sufficient ($\alpha = .87$) and evidence for construct, content, convergent and discriminant validity is presented. However, the factor structure of the model did not result as hypothesized, and it is likely that this measure is comprised of one large CST factor rather than three underlying factors that were predicted.

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CHAPTER ONE

OVERVIEW OF THE PRESENT STUDY

Introduction

Organizations have long acknowledged the critical value of training leaders'

interpersonal skills, as demonstrated by the overwhelming number of costly leadership

development programs in existence today. Ensuring program effectiveness becomes

increasingly important for leaders in very demanding environments, such as healthcare or

the military, given their limited time and resources to utilize more traditional

interpersonal skill development approaches such as offsite programs or multi-day

courses. The very nature of these demanding work environments suggests a need to be

effective at interpersonal interactions, both in terms of leaders' capabilities to assess and

respond to social interactions themselves as well as guiding their followers in doing the

same (Zaccaro, Green, Dubrow, & Kolze, 2017). Unfortunately, given the widespread

variability in even defining what is meant by leader "interpersonal skills," such

interventions are not always well developed, and often are unsuccessful at preparing

leaders for the demands of the job (Lacerenza, Reyes, Marlow, Joseph, & Salas, 2017).

Accordingly, being able to accurately assess critical knowledge, skills, and

abilities (KSAOs) and their effective application by leaders in managing emotionally

charged environments is crucial. Unfortunately, well-established metrics for accurately

assessing and developing leader interpersonal KSAOs are lacking. Furthermore, this is

especially problematic in terms of measuring not simply the levels of leaders'

interpersonal KSAOs, but how *effectively* leaders apply these KSAOs to actual socially

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complex situations in the workplace. To date, methods for measuring interpersonal skills are largely based on self-report scales (Gibb, 2014), such as asking a respondent to self-identify their level of agreement with a given statement. In such cases, respondents may be likely to inflate their true level of ability, rating themselves higher than they actually are. Accordingly, there are concerns for using this method as a means of assessing social skills in complex workplace environments. For example, there is the concern of social desirability, or the incentive for test takers to make themselves look favorable to the test administers (Gibb, 2014). There is also the concern that a multifaceted process, such as Critical Social Thinking, cannot be sufficiently assessed through self-report ratings of agreement levels.

Therefore, the present study seeks to develop and validate a more effective tool, namely a situational judgment test (SJT), capable of quickly and accurately assessing the underlying *critical social thinking (CST)* processes that demonstrate this application of interpersonal KSAOs in practice. As defined by Grossman and colleagues (2014), this CST framework integrates cognitive and behavioral processes to determine the primary knowledge, skills, abilities, and other characteristics (KSAOs) underlying effective social interactions, particularly within highly complex contexts. Formally, CST is defined as: "the process of identifying necessary information for understanding complex social situations and determining appropriate responses that promote desired outcomes" (Grossman Thayer, Shuffler, Burke, & Salas, 2014, p. 2; Hilton, Shuffler, Zaccaro, Salas, Chiara, & Ruark, 2009). Because this iterative process involves numerous distinct KSAOs at each phase, a valid assessment of CST requires the capability of accurately measuring multiple underlying constructs.

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In contrast to more traditional self-report tools, SJTs are uniquely advantageous for assessing the nuances of interpersonal processes and KSAOs. Leveraging a scenario-based approach to capture respondents' effectiveness in reacting to a socially complex situation, SJTs provide the unique capacity to measure complex processes of judgment, choice, or decision-making (Gessner & Klimoski, 2006). The SJT format requires the respondent to identify and integrate different types of information presented in a situation. Comprised of abstract procedural processes, CST can be very difficult to articulate given that it involves complex, multi-condition rules for how to behave under a variety of social conditions (Anderson, 1983). As such, an SJT may be the most appropriate method for measuring CST. Furthermore, there has been evidence supporting the argument that to be effective, methods for assessing soft skills must to be based in real situations, including the complexity of real work environments (Goodman, Wood, & Chen, 2011). An SJT approach to measuring CST is extremely fitting, because it can be developed to tap the clusters of interpersonally oriented KSAOs comprising CST. Additionally, the SJT method facilitates the ability to use rich contextual details when presenting complicated social situations (Christian et al., 2010).

In this regard, this is not the first interpersonal SJT; in fact, numerous SJTs have been developed to measure applied social skills (e.g., emotional intelligence, teamwork skills, and leadership skills; see Libbrecht & Lievens, 2012; Schlegel & Mortillaro, 2018). However, existing measures do not assess effectiveness within the entire *process* of applying social skills in job related contexts. Instead, current SJTs capture various aspects of the process independent of each other. Accordingly, the present study aims to address this critical gap in the literature by developing an SJT tool that should more

accurately capture capacities in implementing underlying CST processes, and therefore offer a more comprehensive and valid assessment approach for informing the development of leader interpersonal capabilities.

Contributions to Theory and Practice

There are several contributions for this research that help to advance both theory and practice regarding CST, measurement of interpersonal KSAOs and processes, and leader development. This study was the first to empirically test the overarching CST framework by proposing an accurate measurement tool for assessing the underlying process. A critical contribution of this study is a validated measure that captures the underlying KSAOs of CST. Second, this study demonstrates that using an SJT approach is most appropriate to capture a complex process as it presents test takers with job related scenarios and asked to choose their response according to predetermined options (Husbands, Rodgerson, Dowell, & Patterson, 2015). In general, SJTs tend to demonstrate strong psychometric value (Lievens, Peeters, Schollaert, 2008; McDaniel et al., 2007; Patterson, Ashworth, Zibbarra, Coan, Kerrin, & O'Neill, 2012) and are a popular alternative to other high-fidelity yet high cost test mediums, such as assessment centers (Husbands et al., 2015). As such, this study aids in further demonstrating that for CST processes, an SJT is an appropriate means of efficiently capturing how an individual *actually* would respond to a socially complex situation, as they should be more difficult for respondents to fake (Patterson et al., 2012). Relatedly, this study has shown that an SJT approach for CST is effective at measuring complex situations where an individual must make sense of the ongoing information presented to them, which is mirrored

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through the SJT scenarios where various aspects of the context need be considered before choosing an appropriate response.

Finally, the CST framework is one of the first approaches offering a holistic understanding for explaining how leaders may respond to complex social interactions at work (Grossman, et al., 2014). Therefore, the present study offers an initial empirical approach for validating this framework and the proposed underlying KSAOs for each of the CST phases, as presented in Figure 1. Many of the competencies characterized for the CST process have been measured and validated individually, but to date they have not been examined in combination. This study contributes a validated measure of the holistic process comprising CST to propel future research avenues to explore this phenomenon across various contexts.

CHAPTER TWO

THEORETICAL BACKGROUND: CRITICAL SOCIAL THINKING

Theoretical Background & Framework

The SJT measure of the CST process in the present study is based upon a modified version of the CST model proposed by Grossman and colleagues (2014). According to Grossman and colleagues (2014), CST is distinguished by four major phases: scanning, appraising/assessing, interpreting, and interacting (see Figure 1). As depicted in Figure 1, CST is not a singular skill in and of itself, but instead is the *process* enacted through a suite of social, emotional and perspective taking skills. When integrated effectively, these skills allow individuals to notice when they need to stop automatically processing a social situation, and instead thoroughly and accurately **scan** *for available social information*, **appraise** *the meaning behind the available social data/information*, **assess and interpret** *how their potential actions/communications could affect to social situation, and then actually* **interact** *in socially appropriate ways to that should support their desired goals or outcomes* (Hilton et al., 2009).

The conceptual foundation for CST was derived from the extensive research base of critical thinking and related concepts (e.g., Ennis, 1987; Halpern, 1998). Critical thinking involves cognitive skills that are purposeful, reasoned, and goal-directed, and increase the probability of a desirable outcome. It is applied most often in complex problem domains, which are often characterized by high task complexity as well as high social complexity. While CST and critical thinking are similar in nature, two factors make CST unique (Hilton et al., 2010). The first is in CST accounting for the dynamic

and iterative nature of social domains. Current models of critical thinking do not account for the role of unfolding real world events. However, complex social situations are characterized by real-time unfolding dynamics in which decision-makers play an iterative role. The second distinguishing factor relates to the process of critical thinking and how it unfolds in complex social situations versus in straightforward analytical problems.

The pattern of within-person "dialogue" (Cohen, 2000, p. 52) essential in CST relies on a distinct form of reasoning known as abduction. Abduction refers to working from available data to form the likeliest explanation that describes what is most likely occurring at that moment in time (Haig, 2005; Josephson and Tanner, 1996). Abductive reasoning appears to be more appropriate for social situations than inductive or deductive reasoning approaches, given the need to quickly yet effectively evaluate information that may not be complete (Hilton, et al., 2009). Abductive social reasoning has therefore been suggested as the central processing mechanism of CST, given the range of often-unfamiliar data that must be processed to develop the "most likely explanation" for what is going on in a complex social situation. It is important to note that the adapted model used for the present study does not include the interacting phase. It was determined that it would be redundant to include the interacting phase in this SJT, because the SJT items will inherently capture one's effectiveness of interacting within a situation based on how they respond to the SJT scenarios.

Overall, a foundational contribution of this more holistic approach is that it offers parsimony in determining where to focus development, through identifying the overarching processes that organize CST's suite of skills. Assessments organized around

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these core processes should offer a better structure to understanding how individuals manage the complexities of social situations in the workplace, by organizing when and how different interpersonal KSAOs may need to be applied. Accordingly, the first hypotheses of this study propose that the initial three CST phases will emerge and be confirmed as the overarching organizing factor structure for the CST SJT measure developed.

Hypothesis 1a: The EFA will produce a 3-factor structure with scanning, appraising, and interpreting as the factors.

Hypothesis 1b: The CFA will confirm the 3-factor structure of scanning, appraising, and interpreting as factors.

CST Phases and Underlying KSAOs

Each of the CST phases requires its own set of KSAOs to be effectively implemented, which must be considered when designing a measurement tool intended to capture these underlying CST processes. The underlying KSAOs are used to shape the SJT content for each phase, since this will tap into an individual's ability to effectively engage in the proposed phase. The four phases will be described next in more detail along with the KSAOs proposed by Grossman et al (2014) to predict success at each phase.

CST Phase 1: Scanning & Associated KSAOs. The first phase of CST is *scanning*: upon entering a novel situation, individuals gather information about their surroundings by scanning for important situational cues. In order to scan effectively, the individual must have a sense of what elements in the environment are important to attend

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to, and simultaneously filter out inner biases that would influence the information. The four KSAOs most likely to be needed for the scanning phase of CST include social attention skills, perception skills, metacognitive skills, and social data-gathering skills, discussed in detail below.

Social attention and perception skills. The ability to pick up on relevant interpersonal and environmental cues is a key aspect for CST (Grossman et al., 2014). Before generating a response within a social interaction, one must be able to delineate which cues in the environment are important to attend to and process. However, a critical piece of this skill is to go beyond rote memorization of what certain cues indicate. Rather, one must draw upon past experiences and their knowledge of relevant cues, by filtering out the irrelevant information (Grossman, 2014). Moreover, the relevant cues will likely vary by situation and culture, which makes it even more important for individuals to discriminate between significant and non-significant cues.

Metacognitive skills. The second KSA necessary for the scanning phase of CST are metacognitive skills. This set of skills involves the ability to consciously identify when one's biases are influencing their perception of social cues (Kuiper & Pesut, 2004). This ability is essential to accurately navigate complex social situations. Formally defined, metacognitive skills refer to one's inward reflection, conscious monitoring, and control over cognitive processes (Efklides, 2008). Factors that could inhibit one from effectively engaging in these skills include one's cultural background, various biases, and emotional state (Halpern, 2013). While an individual may not have conscious control over the formation of such biases or emotional states, it is imperative that they are able to

recognize when these states and thoughts are clouding their perception. Otherwise, when individuals are not able to recognize their own biases, they could misinterpret or entirely miss cues within a social situation (Grossman et al., 2014).

Social data-gathering skills. The last component of the CST scan phase involves making sense of social and contextual data within a given situation; the data can come from the environment itself or from the social actors influencing the environment. Gathering social data relies on picking up on cues such as social relationships, verbal and nonverbal language, political and religious affiliations, etc. (Grossman et al., 2014). The social data are gathered, stored, and organized into a mental model to provide an overarching framework of data to explain the social situation. Mental models are a mechanism through which data is structured and stored in order to make meaningful explanations and predictions from information available in a situation (Grossman et al., 2014; Rouse & Morris, 1986). Relating to the CST process, individuals need to develop mental models, or meaningful schemas about the social situation, that are flexible and dynamic (Endsley, 1995). Over time and as more information is gathered in a situation, the models or schemas are updated in real time.

Summary. Taken together, the suite of social attention & perception skills, metacognitive skills, and social data-gathering skills are needed to effectively scan one's environment. Ultimately, if the individuals are not paying attention to the cues in the environment, then important information will be missed or overlooked (Ashford & Tsui, 1991). Additionally, one must be cognizant of how their personal inner biases may be affecting how they perceive cues, or subconsciously block out certain cues. Being

unaware of cognitive filters (metacognition) inhibits an individual's ability to attend to the environment (social attention and perception) and consequently the individual will not be able to gather the relevant data needed to create a knowledge base (social data-gathering; Riggio, 1992). Important to note, performance in this study will be assessed based upon total score for the SJT. Thus, it is hypothesized:

Hypotheses 2a-2d: Individuals' performance on the "scanning" domain will be positively predicted by items indicative of four primary scanning KSAOs, including (a) social attention (b) perception skills; (c) metacognitive skills; and (d) social data gathering skills.

Hypothesis 3: Individual performance on "scanning" domain will be positively and significantly correlated with the total CST score.

CST Phase 2: Appraising/Assessing & Associated KSAOs. After the scanning phase is complete, an individual will have acquired raw data from the situation and can proceed to the second phase of CST: appraising/assessing. During this phase, the individual begins to process the raw data within their existing knowledge base and evaluates how this information fits in with their current mental model. The individual then must adjust his or her mental model as needed according to continuous incoming data. When appraising and assessing the acquired social information, to make sense of the data it is important that the individual is aware of how he or she is being perceived by other actors in the situation (Sonnenwald & Pierce, 2000). In order to do this, the individual must be able to adopt and understand the perspective of others (Grossman et al., 2014). Accordingly, the critical KSAOs identified as being necessary for

effectiveness during this phase include: elaborating knowledge structures; metaperceptual skills; and perspective taking.

Elaborated knowledge structures. During the appraising/assessing phase of CST, individuals must assess their current mental model, and be able to omit or add any data to adjust their knowledge structures accurately. The result is an elaborated knowledge structure, which is constantly evolving, as the individual gathers more information in the unfolding situation (Grossman et al., 2014). The adjusted knowledge structure is incorporated into the individual's mental model, defined in the previous section. Because CST occurs in complex social situations, it is imperative that individuals bridge the gap between the scan and assess phases by incorporating social data to update their knowledge structures (Roschelle, 1997). Moreover, during the assessing phase, the individual is still acquiring new information as they experience more, so it is also crucial that these elaborated knowledge structures are continuously adapted.

Metaperceptual skills. The next skill set, metaperceptual skills, involves one being aware of and understanding how others perceive him or her (Kenny & DePaulo, 1993; King, Kaplan, & Zaccaro, 2008). This can also be explained as a two-fold process. The first part of metaperception involves an individual being aware of what social information they are giving to others based on their overt behavior. Secondly, the individual must infer how other social actors understand and use this information to form judgments about the actors involved and the situation itself (Albright & Malloy, 1999). More importantly, research has shown that individual's perceptions of how others judge them, in fact, correlate with how others judge them (Kenny, 1994). The key for

individuals to develop strong metaperception is to be aware of how others are judging the behavior and emotional states that they are outwardly displaying by looking at the scenario objectively. Once one understands how they are perceived, they can adjust their behavior accordingly, and in turn satisfy a critical component involved in effectively implementing the appraising/assessing phase of CST.

      Perspective taking. The last skill critical for the appraising/assessing phase is perspective taking, or the ability to accurately understand the frame of reference of the other social actors in a situation (Davis, 1983; Kenny & DePaulo, 1993). Formally defined, perspective taking is "accurately perceiving and understanding the cognitive, affective, and behavioral components and meanings of another's internal frame of reference" (Grossman et al., 2014, p.10). This skill is critical to the CST process, because often individuals interpret situations very differently based on their frame of reference. Thus, it is important for individual to understand the contextual cues that other social actors may be interpreting differently. From this, one can make more accurate interpretations about the intentions of others, which can assist when updating mental models about the social situation (Galinsky & Wang, 2005). This is related to metaperception skills, but is much more broad in nature. Understanding another's internal frame of reference requires consideration of various cognitive and affective factors that may affect how someone interprets the interpersonal or contextual happenings in a scenario. By engaging in perspective taking, individuals are then more effective at critical thinking in terms of how to behave and assess social cues appropriately (Parker & Atell, 2001).

Summary. The second phase of CST involves the individual assessing the data based on their existing knowledge structure in addition to how other social actors are assessing the data (Grossman et al., 2014). The process of doing this involves assessing the data in terms of one's existing knowledge structure, while isolating any non-fitting data, and adapting the knowledge structures accordingly. Simultaneously, the individual must assess perceptions of other social actors to understand how they are interpreting the same social data. Assessing the social data should take this two-pronged approach, since social situations are complex and social actors will interpret the data may differently. Taking these aspects together, it is hypothesized that:

Hypotheses 4a-4c: Individuals' performance on the "appraising" domain will be positively predicted by items indicative of three primary appraising KSAOs, including (a) elaborated knowledge structure, (b) metaperceptual skills and (c) perspective taking skills.

Hypothesis 5: Individuals' performance on "appraising" domain items will be positively and significantly correlated with their total CST score.

CST phase 3: Interpreting & Associated KSAOs. The first two phases of CST involve scanning the environment for relevant cues and appraising the situation to update existing knowledge structures, based upon previous cues. The third phase of CST requires interpreting the social data that is gathered. To complete this phase, the individual must identify any additional information that he or she is missing in order to holistically comprehend the situation (Grossman et al., 2014). Next, the individual must infer meaning from the additional contextual data in order to predict future events that

may ensue (Grossman et al., 2014). The two KSAOs involved with this phase are social inference skills and social forecasting skills, described below.

   Social inference skills. In the previous assessing phase, individuals developed and adapted their knowledge structures in real time; however, there are still potential gaps where information may be missing or needs further clarification. To fill these gaps in the knowledge structures, individuals apply contextual information and use deductive reasoning to interpret the social data (Gallagher, 2008). With deductive reasoning, the individual can draw inference or create stories about the social situation (Grossman et al., 2014). Formally, deductive reasoning involves utilizing social cues to infer hypotheses and evaluate the derived explanations against what is occurring (Haig, 2005). In sum, the individual utilizes the data gathered to compare with their existing knowledge to explain the situation (Grossman et al., 2014).

   Social forecasting skills. After the individual draws inferences about the new data, he or she then must forecast likely events that will occur in the situation based on their interpretation of the data (Grossman et al., 2014). Forecasting is defined as what could happen in the future, as opposed to a prediction of what will happen in the future (Saffo, 2007). The significance of forecasting events is that the individual mentally thinks through many potential outcomes to evaluate which is most likely to occur given their inference from the data. Good forecasting occurs when one forms a forecast and then seeks to discredit it with new data (Saffo, 2007). Research has recognized the importance of developing these mental simulations for potential outcomes in order to forecast courses of events (Klein, 1993). Especially in complex social situations, it is essential for the

individual to forecast and consider all potential outcomes as new data comes in and inferences are made (Grossman et al., 2014).

Summary. Interpreting is a critical piece of the CST process, and will ultimately determine how the individual responds to the situation. To reiterate, interpreting involves making inferences about the social dynamics and forecasting future outcomes (Grossman et al., 2014). If an individual fails to make accurate inferences about the social data, then in turn, they will fail to forecast potential outcomes appropriately. In essence, the accuracy of the predictions is dependent upon the individual's ability to infer the social dynamics correctly. Thus:

Hypotheses 6a-6b: Individuals' performance on the "interpreting" domain will be positively predicted by items indicative of two primary interpreting KSAOs, including (a) social inference skills and (b) social forecasting skills.

Hypothesis 7: Individuals' performance on "interpreting" domain will be positively and significantly correlated with their total CST score.

CST Phase 4: Interacting. As discussed previously, for the purpose of this study, the last CST phase of interacting will not be included in the SJT measure. Because the measure development project is a *situational* judgment test, inherently, the interaction phase is already captured when measuring the first three phases of CST. The participants' response to SJTs requiring the use of interpreting skills will essentially measure interacting. Their behavioral response to interpreting a situation will be the reaction of the actor in the social situation, or the interaction, though they won't be physically engaging in the response. The nature of the stems and the response options will be explained

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further in the methods chapter, but for the purposes of this section, it is important to note that the interaction phase of CST will be summarized even though it is not included in the final SJT measure. Formally defined, the last phase of CST involves the actor generating a response based upon what he or she deems as being appropriate from their scanning, appraisal, and interpretation of the situation (Grossman et al., 2014).

Summary. During the last phase of CST, the individual produces a response to the situation based upon the scanning, assessment, and interpretation of the data. Moreover, the individual regulates their self-based on other social actors responses to their action (Grossman et al., 2014). The actor's response behavior and evaluation of such is an important influence on the social interactions. In a sense, it is a continuous feedback loop where the individual gathers social data from the dynamics to infer whether or not the other actors deem their actions appropriate. Since CST is an iterative process, the cycle begins again with the new social data being presented that must be scanned, assessed, interpreted, and ultimately enacted upon once more (Grossman et al., 2014).

CST and Related Constructs

As previously mentioned, CST is based upon the concept of critical thinking, (Ennis, 1987; Halpern, 1998) which is defined as the purposeful use of cognitive skills directed at producing a desirable outcome (Grossman et al., 2014; Halpern, 1998). Given this definition, it is not surprising that CST may be perceived as overlapping with critical thinking as well as other related variables. Thus, Grossman and colleagues (2014) produced a review distinguishing CST from related constructs. The following section will

be a summarized version of their literature review and identification of constructs related to CST.

      Critical Thinking. Critical thinking when applied to social domains involves unique components that differ from the original critical thinking conceptualization (Hilton et al., 2009). First, social situations are inherently dynamic, thus this requires the actor to make decisions in real time, as events unfold in the situation. Current frameworks of critical thinking do not account for temporal aspects and events unfolding in real time (Grossman et al., 2014). While some models of critical thinking do acknowledge the dynamism of situations, they do not consider the actor as having a direct influence on the events unfolding (Hilton et al., 2009). Secondly, CST unfolds as a process compared to traditional conceptualizations of critical thinking as a straightforward solution to an analytical problem (Grossman et al., 2014). Namely, this process of CST involves within-person dialogue that is not present in critical thinking theories (Grossman et al., 2014; Cohen, 2000). This within-person dialogue comes from a form of argumentation referenced as 'abductive' (e.g., deductive) reasoning, or the process of working with information given to reach the best explanation to fit the data (Haig, 2005; Josephson & Tanner 1996). In contrast, inductive reasoning is typical in critical thinking, whereas deductive reasoning better reflects the iterative nature of the CST process.

      Naturalistic decision-making. CST inherently overlaps with other related constructs that are deemed necessary for navigating high-risk or socially complex settings (Grossman et al., 2014). Naturalistic decision-making (NDM) is a decision-making framework where individuals use past experiences to make decisions in real time (Klein, Orasanu, Calderwood, & Zsambok, 1993). The situational factors that comprise NDM are

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generally seen with CST, however there are some distinguishing factors. For instance, NDM oftentimes occurs in complex social situations, but this is not a defining feature as it is with CST (Grossman et al., 2014). Moreover, CST is applied to environments where there are multiple actors that have divergent goals, whereas this is not always the case with the NDM framework. Stated another way, NDM occurs in situation with task complexity while CST occurs in situations with both task complexity and social complexity (Grossman et al., 2014).

Another major difference between NDM and CST is the reliance of past experience to solve the problem at hand. Expertise is fundamental to the NDM framework, such that the underlying idea is that individuals use past experiences or expertise when faced with a complex problem (Lipshitz, Klein, Orasanu, & Salas, 2001; Zsambok, 1997). The first phase of CST, scanning, is present in the NDM framework. In both processes, the actor actively scans the environment to pick up on relevant cues to attend to. In NDM, the actor matches these cues to past experiences in order to make sense of the situation (Grossman et al., 2014). In contrast, the CST takes this process further by then interpreting and reacting to these relevant cues. In sum, CST occurs in novel situations (Hilton et al., 2009) and is not necessarily rooted in existing experiences or expertise (Grossman et al., 2014).

Situational and social awareness. Situational and social awareness are, by definition, critical to the CST process, but are not sufficient in isolation to engage fully in CST. Situational awareness is defined as perceiving relevant cues in a situation and ascribing meaning to those cues in order to holistically understand the context and make predictions about future events in the situation (Endsley, 1995). Social awareness is the

process of accurately perceiving, analyzing, and evaluating social stimuli (Mueller-Hanson et al., 2007). CST does incorporate situational awareness and social awareness, but it also takes it a step further. CST involves the individual's influence on the situation in the sense that the actor can intervene in order to achieve the desired outcome (Hilton et al., 2009). Ultimately, the CST framework used components of situational and social awareness, but is distinguishable from these established constructs because the process goes beyond static awareness.

Social, emotional, and cultural intelligences/competencies. Social, emotional, and cultural intelligence/competencies all relate specifically to complex social situations in dynamic environments (Grossman et al., 2014). Social intelligence refers to one's' intrapersonal ability to be attuned to one's emotions as well as the emotions of others, to manage mutually satisfying relationships based on the feelings and needs of all parties involved, and to flexibly cope with social environmental changes by using means of introspection to solve problems and make realistic decisions (Bar-On, 2006). Emotional intelligence (EQ) is the ability to monitor and manage emotions of the self and others by discriminating among them and using this information to guide one's cognitive and behavioral processes (Bar-On, 2006, p.189). Further, the authors suggest empirical evidence to demonstrate aspects of EQ to be measured in terms of mental abilities (Mayer, Dipaolo, & Salovey, 1990). Emotional intelligence has exploded in the psychology literature; for instance models of EQ are prominent in areas of cognition and affect psychological research. Overall, EQ models strive to understand how cognitive and emotional processes interact to enhance thinking and in relation, impact the individual's subsequent behavior (Brackett, Rivers, & Salovey, 2011). Lastly, cultural intelligence is

made up of the knowledge, skills, and motivation that allows an individual to adapt in environments that are culturally different from theirs (Abbe, Gulick, & Herman, 2007; Earley & Ang, 2003).

As with the previous related constructs discussed, emotional, social, and cultural intelligences are a piece of CST, yet do not amount to the entire CST process. CST, by definition, goes beyond automatic processing of information because the situation is novel; thus existing competencies of social, emotional, and cultural intelligence are not sufficient to provide an appropriate response (Grossman et al., 2014). CST builds upon these intelligences, but is a more process-oriented construct that can be applied in the highest complexity of social situations. As a result, individuals with higher social, emotional, and cultural intelligence will be better prepared for situations where CST is needed, but as previously discussed, the repertoire of these competencies are not enough on their own.

The trait emotional intelligence model. The trait emotional intelligence model (TEIQue; Petrides, 2009) successfully integrates and extends EI-related concepts in a general framework comprised of four factors: emotionality, sociability, self-control, and well-being. Individuals with high scores on emotionality have a wide range of emotion-related skills. Specifically relating to CST, individuals high on emotionality can perceive and express emotions and use these abilities to develop and sustain close relationships with others. However, individuals low on emotionality have difficulty recognizing their internal emotional states (Petrides, 2009). Next, the sociability factor emphasizes social influence, such that the individual is an agent in different social contexts. Individuals scoring high on the sociability factor are better at social interaction, meaning they can

effectively interact with people from diverse backgrounds (Petrides, 2009). Those scoring low on this factor are unsure how to behave in social situations. The self-control factor, according to the TEIQue, deals with control over urges and desires. This is indirectly related to aspects of CST, but does not share a high degree of overlap. Lastly, the well-being factor is not believed to relate significantly to CST. According to the TEIQue, high scores on this factor feel positive, happy, and fulfilled, which is not an explicit prerequisite to engage successfully in the CST process. Therefore, it is expected that emotionality and sociability dimensions of the TEIQue will offer convergent validity evidence of a measure of CST, as represented by significant, moderate (r= .42-.65; Dinger et al., 2004) positive correlations with CST SJT scores. Relatedly, the self-control and well-being dimensions of TEIQue will serve as discriminatory validation of the CST measure, as it is not expected that these dimensions will be related to SJT scores. As such, it is hypothesized that:

Hypotheses 8a-8b: Individuals' overall CST SJT scores will demonstrate significant, moderately positive correlations with TEIQue scores for (a) emotionality and (b) sociability.

Hypothesis 9a-9b: Individuals' overall CST SJT scores will not be significantly correlated with (a) self-control or (b) well-being.

CHAPTER THREE

SITUATIONAL JUDGMENT TESTS

Defining SJTs

As workplace settings are becoming increasingly social and highly complex, a measurement capturing complexities of both the person and the situation adds value in understanding, modeling, and predicting job performance (Hattrup & Jackson, 1996). The SJT approach has grown from the study of critical incidents (Flanagan, 1954) based upon the notion that prediction was improved when the situational factors were taken into consideration. Formally defined, a SJT is a moderate-fidelity simulation or work sample designed to assess an individual's tendency to engage in appropriate behaviors in a work situation, and are most often used to measure a constellation of job-related skills and abilities (Weekley & Jones, 1997; Weekley & Ployart, 2013). The information presented in an SJT stem gives context surrounding a specific problem or unforeseen event that arises on the job; potential responses to these scenarios are pre-determined by the test developer and span a range of reasonable responses. Regarding response alternative to SJTs, two different approaches are often are used, and consist of (a) multiple solutions to the problem and instructions for the test taker to choose the best option (or worst option; or both) and (b) provide solutions to problems and instruct respondents to rate their agreement *for each alternative* (Weekley & Ployart, 2013).

The Situational Element of SJTs. Heider's (1958) theory of attribution dynamics explains how people make sense out of situations they find themselves in. The individual examines actors in the situation and considers him or herself an observer, and

then proceeds to investigate what is driving the behavior of the actors and how this behavior will influence the situation. Acquiring such knowledge offers a tactical approach that allows for predictability in a given situation. Modern day research refines this notion and suggests that people only expend such effort in situations that are important, novel, or dangerous (Gessner & Klimoski, 2006). In everyday occurrences, we typically use automatic processes to respond to events. However, when the situation is novel or important, an individual will use more mental effort to develop strategies and awareness of the situation (Fiske & Taylor, 1991). Over time, one's perceptions, memory, and past experiences, will result in filters and heuristics that guide one to act accordingly based on their interpretation for the situation.

The Judgment in SJTs. Judgment is defined as the human ability to infer, estimate, and predict the character of events (Hastie & Dawes, 2001). The SJT measure provides context for a given situation and instructs participants to make a judgment using their ability to choose a suitable answer in the likelihood of event based upon available information. Hammond (1955) furthered the theory of judgment and decision making to develop the idea of 'quasi-rationality' that considers decision making to involve both logical, analytical thought in addition to thoughts without methodological explanations. Many scholars have proposed that SJTs are measuring this quasi-rationality method (Guion, 2011; Brooks & Highhouse, 2006). The use of good judgment is, essentially, the ability to go beyond the information presented at face value and to use broader knowledge to deduce a plausible course of actions (Funder, 1987).

Features of SJTs. Empirical data has shown that SJTs enhance the prediction of job performance over and above what is obtained from a general ability or skills measure (Weekley & Jones, 1997). The most widely accepted explanation is that SJTs assess intentions to respond in a certain way, and these intentions predict future behavior. The development of SJT begins with the generation of critical incidents to form the stem of the SJT item, and the resolution of such incidents requires multiple KSAOs. SJT performance is a combination of expertise problem solving skills in addition to application of contextual knowledge based on prior experience (Schmitt & Chan, 2006). The inherent nature underlying a typical SJT is multidimensional, and good judgment in such situations is likely to be a function of multiple defined traits and abilities, or some broader judgment construct (Ployhart & Weekley, 2006).

Indeed, it can be argued that the wide variation in behaviors embedded in the response options ensures the multidimensional nature of the final measure. However, an examination of SJT items reveals that there is typically no right or wrong answer, per say (Krokos, Meade, Cantwell, Pond, Wilson, 2004). At first this, may seem undesirable, but in actuality it gives strength to SJT approaches. For instance, items that are too transparent would lead to ceiling effects rapidly and fail to differentiate high and low performers (Krokos et al., 2004). Based upon this notion, it is believed that response options for an SJT item vary along a continuum of best to worse, and the exact location of an option will vary by item. For instance, some SJT items may have one clear appropriate answer that is the best, while other items may have multiple items that are acceptable at varying degrees.

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The Value & Validity of SJTs for Capturing Critical Social Thinking Processes

SJTs have been centered around the notion of measuring human judgment for many years, however more recently social and cognitive psychologists have begun to leverage them as a more sophisticated approach to understand social sense-making (Fiske & Taylor, 1991). Fiske and Taylor (1991) characterized actors as invoking either automatic or controlled mental processes when faced with a judgment or decision-making event. The mental processes that are elicited in response to a stimulus will determine the perceptions and actions of the individual in a social setting. Another governing principle of behavior in such situations is an individual's past experiences and learned information, which builds mental schemas or heuristics that guide behavior and performance in a future situation (Kunda, 1999). In routine situations, individuals often use automatic processing to respond because surface level sense making is efficient, and evidently used in familiar cases. However when the situation exhibits complex cues, and especially those that are unexpected, most individuals will tend to make a more effortful and tactical approach to understanding the situation in order to act appropriately (Guion, 2011). In relation to CST, actors must used controlled processes when making a decision to elicit a socially appropriate response. Additionally, mental schemas are explained through this judgment and decision-making lens, similar to the schemas used in CST.

The Design, Development, & Validation Process for SJT Measures. Over the past several decades, numerous studies have provided multiple forms of validity to support SJT assessments. The following sections provide an overview of well-established literature on content-related, criterion-related, incremental, and construct-related validity of SJTs.

Content-Related Validity. Countless domain-specific SJT's have been developed

for assessment across a wide array of occupations including: retail (O'Connell et al.,

2001;Weekley & Ployhart, 2013; Weekley, Ployhart, & Harold, 2004), medical (Lievens,

Buyse, & Sackett, 2005; Lievens & Sackett, 2006), insurance (Dalessio, 1994), hotel

service (Jones & DeCotiis, 1986; Weekley & Jones, 1999), call center (Ployhart,

Weekley, Holtz, & Kemp, 2003), military leaders (Hedlund, Forsythe, Horvath,

Williams, Snook, & Sternberg, 2003), aviation pilots (Hunter, 2003), and many others.

The process necessary to developing SJT has likely facilitated the explosion of using

such inventories across diverse work environments. The domain-sampling process is used

such that SMEs are used to generate situational stems, response alternatives, and scoring

keys. Some approaches conduct a detailed job analysis and critical incident techniques to

guide the content of SJTs provided by SMEs (Motowidlo, Dunnette, & Carter, 1990),

while others use a hybrid approach between SMEs and job analysis. Such approach is

geared toward generating behavioral examples and interpersonal interactions that occur

on the job, via interviews or observations, rather than observing the specific day-to-day

tasks of an incumbent. After gathering rich examples from SMEs, the researchers will

generate hypothetical workplace scenarios in need of resolution. A second group of

SMEs are typically used to review and refine the stems to ensure domain-specific

appropriateness (Muros, 2008). The researchers and SMEs work in tandem to create

multiple, plausible alternatives to each situation.

The responses are then rated in terms of effectiveness by a panel of SMEs to

compute a scoring key for the SJT items (Weekley, Ployhart, & Holtz, 2006). The studies

referenced above sample domains related to interpersonal and social facets of the job

(Muros, 2008). The major strength of Motowidlo and colleagues' (1990) method for SJT development is the feasibility to develop situations and responses representing a given role in the focal context. This strategy is advantageous such that it may facilitate criterion-related validity, given the inherent matching of the predictor-criterion (Lievens, Buyse, & Sackett, 2005), in addition to producing greater face validity (Bauer & Truxillo, 2006; Muros, 2008). The nature of rich contextual details included in most items should be reflective of the domain of interest, and periodically adapted to omit jargon or outdated references (Hough & Paullin, 1994; Muros, 2008). In this study, content validity will be assessed based on the above methods. Rich, contextual examples were derived from interviewing 20 SMEs. Forty SJT items were developed and later refined by a separate panel of 4 SMEs, to produce a final measure of 27 SJT items. This process will be explained in greater detail in the methods sections.

Criterion Related Validity. Research using the SJT approach most frequently correlate measures with job performance criteria, using both indicators of task and/or contextual performance (Weekley & Ployhart, 2005). To demonstrate, McDaniel and colleagues (2007) conducted a meta-analysis, which analyzed the relationship of written SJTs to job performance. Inclusion of both published and unpublished studies, 118 correlations from over 25,000 participant data, produced a relationship of $\rho = .26$, with 80% credibility intervals of $\rho = .13$ to .38 (results produced *after* correcting for sampling error in original studies and measurement error in the criterion). Note that the credibility intervals do not include zero, indicating the validity of SJTs for predicting job performance are generalizable across most contexts (McDaniel et al., 2007; Muros, 2008).

A related criterion measure that has received considerable investigation is student (i.e., training) performance. Student performance as the criterion was omitted from the meta-analysis referenced above by McDaniel and colleagues (2007), thus there is reason to demonstrate the unique validity provided from student samples. Most noteworthy, Oswald and colleagues (2004) developed a multifaceted SJT to examine student performance on intellectual, interpersonal, and intrapersonal facets. Results from their study show significant correlations with multidimensional student performance and GPA (r= .16), absenteeism (r= -.27), self-reported performance (r= .53) and peer-rated performance and (r= .16). Additional results from Peeters & Lievens (2005) support a significant correlation between SJT measures of student related issues and GPA (r= .33). More specifically, the SJT captured domains including teamwork, studying, organization, and interpersonal skills, reflecting student-related issues (Muros, 2008). A noteworthy study, pertaining to the underlying motive for developing this thesis, investigates the interpersonal situations between doctor-patient roles. Lievens, Buyse, and Sackett (2005) found that an SJT developed for assessing doctor-patient interactions was predictive of medical students' GPAs for courses, which are interpersonally oriented. Even more interesting, the predictive validity of their SJT increased over the student's four year curriculum for which data was collected, such that the coefficient grew exponentially from r= .07 in the student's first year to r= .38 in the student's fourth year.

In sum, there is a multitude of evidence to demonstrate SJTs as valid predictors of job performance and student performance (Muros, 2008). There is a variety of other variables that have been assessed to show criterion-validity of SJTs, including turnover (r= -.19; Dalessio, 1994), customer service ratings (r= .38; Jones & DeCotis, 1986), and

accident involvement (r= -.22, Legree et al., 2003), just to give supporting evidence for a few. SJTs demonstrate significant predictive validity for numerous outcomes of interest. There is evidence to show SJTs can be designed as valid predictors of criteria ranging broadly from job and student performance to pinpointing survival rates of turnover and driver-crash ratios for aviation accidents (Muros, 2008). Criterion validity is not assessed in the present study, but will be described in greater detail for future directions in the conclusion of this paper.

Construct-Related Validity. Recent agendas have expanded many efforts to uncover what SJTs were *actually* measuring by looking into the constructs assessed from these measures (Motowidlo, 1990; Muros 2008). This notion considers SJTs as a method, opposed to a construct itself, which has sparked much debate over recent years in the selection literature (Guion, 2011). The conclusions from this investigation reveals that the majority of SJT measures are inherently multidimensional. The literature is abundant of primary studies resulting in significant correlations between SJTs and both cognitive and personality variables (Schmitt & Chan, 2006).

Convergent Validity Evidence. The CST test may have a large mental ability component because it is a knowledge test and uses paper-and-pencil format (Stevens & Campion, 1994). As such, a high degree of convergence would be expected with traditional aptitude tests in employment settings, based on positive correlations reported among mental ability tests (math, verbal, mechanical ability; Jensen, 1986; Stevens & Campion, 1994). In the present study, a cognitive reflection test by Albaity, Rahman, and Shahidul (2014) is administered to show convergent validity evidence, such that:

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Hypothesis 10: The SJT measure will correlate positively, though not be redundant with scores on the cognitive reflection task.

Reliability Concerns. Insight provided from empirical efforts has resulted in concerning results for the reliability of SJTs. SJTs has frequently resulted in low internal consistency reliabilities (Schmitt & Chan, 2006), which can likely be attributed to the multidimensional nature of SJTs (Muros, 2008). Indeed, this finding has stalled efforts to design SJTs for a specific construct (McDaniel et al., 2007; Schmitt & Chan, 2006). Analyses of factor structures in SJT measures have produced inconclusive results and suggest incoherent structures, leading to the overall SJT score being the only viable indicator, rather than scores on a priori dimension scales. Typically, SJT analyses reveal low coefficient alpha levels on sub dimension scales (α= .20s to .40s); inter-correlations between the scales near unity; and item loadings onto a single, large general factor (Kasten & Freund, 2015). Ideally, a high degree of internal consistency (for within-dimension items) is desired for an SJT designed to measure specific dimensions of a construct (Muros, 2008). Yet, a different perspective from psychometric theory suggests that lower alphas are expected for SJTs designed to measure a multidimensional domain, such that independent items will correlate erratically with the differing test dimensions (Muros, 2008). The solution to this issue offers evidence that increased number of items developed for an SJT may result in clearer dimensions (Schmitt & Chan, 2006).

Fortunately, even though SJTs have produced poor internal consistency due to the measure's multidimensional nature, evidence still remains in favor of SJTs to be predictive, given that criterion performance is also multidimensional. SJT's typically

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measure complex constructs that map on to an equally complex criterion measure (Muros, 2008). Additionally, results consistently support significant but non-redundant associations of SJT measures with cognitive ability and with personality, indicating a broader construct that SJTs capture. This discussion has sought to clear up the murky debate regarding whether SJTs represent a construct or method; evidently SJTs are not a construct itself, but a method for measuring such (Muros, 2008). Given the aforementioned findings, I expect that my initial validation study will show strong overall consistency of the CST SJT. However, given the underlying complexities of the sub processes, I am unsure how the consistencies of each factor will fare. Therefore, it is hypothesized that:

Hypothesis 11: The overall internal consistency of the CST SJT items will produce an alpha greater than .70.

CHAPTER FOUR

METHODOLOGY

Overarching Research Design

To develop the initial CST SJT and assess the aforementioned hypotheses around the structure, validity, and consistency of the resulting measure, two research phases were undertaken. The first phase consisted of measure development, whereby leader interviews were conducted to aid in drafting SJT items. Current organizational leaders in a healthcare setting from a range of levels and roles were selected to serve as the SMEs for developing behaviorally based item stems; these participants were selected as experts possessing the emotional and social skills necessary for effective leadership (Riggio & Reichard, 2008). After an initial pool of items were developed for the SJT, a separate panel of SMEs then helped to refine and revise the stem and response options. The second phase was subsequently focused on measure validation, using a convenience sample of 191 MTurk participants. These participants were required to be employed outside of MTurk, making it more likely these individuals would have some social interaction experience at work. The resulting data was then analyzed to examine the structure, consistency, and reliability of the SJT items. Both phases of the measure development and testing process are next described in more detail.

Phase One: SJT Item Development with Subject Matter Experts

Phase one of the project involved the development of SJT item stems and response options. An SJT item requires development of a situation description, response

options, and a scoring method (Guion, 2011). Situations are derived from either job analysis, theory, or informed imagination, though the critical incident method is most advocated (Weekley & Ployhart, 2006). The present study uses a hybrid approach to stem development. A critical incident technique was used in addition to writing items that reflected the underlying model of CST. The items for this test were based on an extensive review of literature regarding the types of KSAOs necessary for effective critical social thinking (Grossman et al., 2014).

Real-life workplace scenarios were collected via 20 interviews that asked participants to describe behavioral situations that reflected particular KSAOs underlying the CST model. Participants were leaders at a large healthcare organization in the southeast United States. This sample of individuals was chosen due to the relational context of their job, including interactions with their subordinates/supervisors as well as interactions with patients. Thus, these leaders are well versed in social competencies and interpersonal skills (Gross, 2007). As such, interviews were used to guide generation of critical incidents related to the dimensions identified for CST (Jackson, LoPilato, Hughes, Guenole, & Shalfooshan, 2017). Moreover, the items and response options underwent rigorous review and modifications by a panel of SMEs and graduate students well versed in this study. The SME panel is representative of the organization where the final validation of the measure will take place, and was able to provide input for language and scenarios that will best be understood by the sample.

SJT item drafting. The above method was utilized to draft an initial set of 40 items, which were refined through a different SME panel composed of researchers

trained on the CST framework. This involved SMEs to classify the SJTs based on the appropriate CST phase (e.g., scanning, appraising, or interpreting) as well as the corresponding target KSAO. Inter-rater agreement (IRA) was then calculated for each item following the recommendations by LeBreton and Senter (2008) . SJT items that result in IRA estimates between .00 and .50 were eliminated, since these values indicate lack of agreement (.00 to .30) and weak agreement (.31 to .50) (LeBreton & Senter, 2008). Items were kept for IRA scores indicating strong agreement (.71 to .90) and very strong agreement (.91 to 1.00) (LeBreton & Senter, 2008). SJT items that result in an IRA of moderate agreement (.51 to .70) were discussed among SMEs. Only the moderate items which are unanimously agreed upon as belonging to a single, identified construct was kept for the second phase of validation; any SJT items with remaining discrepancy and IRA values of moderate agreement were eliminated. Further, the SJT items were designed to tap into information such as how effective the individual is in a given domain by assessing the underlying KSAO involved (See Appendix C).

Each SJT item contained six response options that were also generated from the interviews of SMEs. The leaders were first asked to walk through a situation in which a problem typically arose and they needed to mitigate what was occurring through effective social interacting. The interviewees were also asked a variety of questions pertaining to how their self-awareness influenced the situation. An example question from the interview is (in regards to a specific situation) "When was the first moment during this event that you found yourself becoming self-aware of your thoughts and reactions to the situation?". Participants were then asked to describe an individual *not* effective in self-awareness and related skills might have handled the same situation. From participant

responses, I generated a best and worst reaction to a scenario. Then, using these two extreme anchors as a guide, I generated four additional intermediate responses to each SJT. The response options were reviewed and with a leadership and development SME and a CST SME to ensure clarity and appropriateness of the options.

The final measure consisted of a total of 27 SJT items, (e.g., see Appendix A) with three items pertaining to each KSAO for the first three phases of CST. The phases included are scanning, assessing/appraising, and interpreting. The interaction phase was discussed as being used as a potential piece of this SJT measure, however through a discussion with both measurement and CST experts, it was decided to omit this category. Since the final phase of CST involves the individual interacting with the situation based on what they determined to be an appropriate course of action (Grossman et al., 2014), this is inherently captured in the overall measure of the three phases. For instance, the SJTs that measure the individual's ability to interpret a situation by choosing an appropriate response will consequently capture the interacting component. After careful consideration of these facts, it was decided to omit the interacting factor.

Development of the SJT Scoring Method. It is recommended that SJTs aiming to assess intentions, as is the case for the current CST SJT, should ask the test taker to indicate what they "would do" or are "most likely" to perform. Stating the instructions this way require respondents to predict their own future behavior (Weekley & Ployhart, 2013). Accordingly, for the present SJT, respondents were instructed to indicate which of six possible response options they perceived to the best option, but also to select the worst option in which to engage. Responses were then scored using a traditional SME

scoring approach; SMEs were administered the SJT and the mode was computed for the best and worst answers (Krokos et al., 2004).

      SME Rating Collection & Analysis for Scoring. When SJT scores are based on a scoring key that was developed by SMEs, an SJT score represents the extent to which each respondent agrees with the judgment of the SMEs. Therefore the extent to which the scores demonstrate construct validity depends on the validity of the SMEs' conceptualization of the construct and the validity of the SMEs assessment between the response options and construct (Krokos et al., 2004). To compute SME scoring keys, twelve SMEs were invited to partake in this survey and their scores were used in calculating the final SJT scoring key. The SMEs were administered the 27-item SJT via an online survey link that was emailed directly to each individual SME's email address. SMEs were not required to participate in the survey and had the option to stop or omit answers at any point throughout the survey. An overview of the study's purpose was provided to participants via the introductory segment of the online survey as well as a personalized email. Participants invited to serve on the scoring panel were selected based on their expertise and/or research in CST-relevant areas. All were formally trained in psychometric and assessment principles and currently employed in a related field.

      SME results were anonymous, and no demographic data was collected; they were strictly given the 27 SJTs following the study's overview and a brief instruction section. For each SJT item, there are six possible responses that reflect how someone could react to the situation. The SMEs were asked to rank order the items from *best* to *worst.* From the SME responses, a scoring key was created. The key is an instrument used to code

participant's response as correct or incorrect, and what score value, if any, is associated with a specific SJT item (Whelpley, 2014). The type of approach used here is a *consensus-based* keying method (Mcdaniel et al., 2011), where there needed to be more than 50% agreement on the answer that was chosen as the mode.

Consensus-Based Keys. Consensus scoring builds a key based on the opinions of one or more people; the participants in key building are SMEs as were used in this study. The mode of the test responses was keyed as correct (Whelpley, 2014). This means that each SJT had *two* correct answers, the correct **best answer** and the correct **worst answer.** Participants were awarded +1 point for selecting a correct answer, -1 point for selecting the worst answer as the best answer (or the best answer as the worst answer), and 0 points if they selected any other answer, considered neutral. The difficulty with this scoring method is that because it was based upon consensus, there were sixteen SJT items that had multiple correct "best answers" or multiple correct "worst answers". In other words, there were numerous SJT items that had multiple responses that could receive +1 or -1 points and every item had multiple responses that would receive a score of 0 points.

Phase Two: Initial CST SJT Measure Validation

Participants & Procedure. Phase 2 involved the administration of and data analysis for the final SJT measure, and took place in February 2019. Participants were recruited via posting a "hit" on Amazon's Mechanical Turk advertising the SJT as a 30-minute task that compensated $4.00 upon successful completion. Participation conditions were required for participants to complete the task, such as the need for the individual to be currently employed outside of MTurk. This condition assumes that if the individual

works outside of the online outsourcing platform, then they (more often than not) experience some degree of social interaction at work. Additionally, participants were required to be at "master" level, which denotes an experienced MTurk worker and deters robot or fraudulent accounts. The benefit of using this MTurk sample is the resulting maximized data set to test with factor analysis, since the minimum sample size is suggested at ~200 participants given 27 items (Hoelter, 1983).

Although a sample of 200 participants was originally collected via mTurk, incomplete responses resulted in 191 individuals' responses being included in the final data analysis. On average, participants were 36.94 years of age (*SD*=8.84). Approximately 68.07 % of the participants were male (31.93% female). The ethnic composition of participants was 64.4% Caucasian, 26.2% Asian or Pacific Islander, 5.2% Hispanic, 3.1% African American, .50% Native American and .50% other.

Measures.

CST, trait emotional intelligence, critical thinking, and cognitive reflection were assessed with 191 MTurk participants. All assessment measures are included in Appendix A-E.

CST. CST was measured using the SJT assessment developed for this study. The measure consisted of 27 items asking participants to choose the best and worst option for each item. A sample item is "You are in the middle of a presentation to your department and it is going really well. However, during the presentation, David makes an off topic comment that everyone else laughs at. You are worried that his sarcastic comment is

undermining your authority. What would you do?" The internal consistency reliability in the present study was α= .87.

TEIQue-SF. The TEIQue (Petrides, 2001) was administered to assess factors comprising trait emotional intelligence. The measure consisted of 30 items asking participants to report how closely they agree with each statement, ultimately determining four factors; emotionality, sociability, self-control, and wellbeing. The measure utilized a 7-point response scale ranging from (1) completely disagree to (7) completely agree. A sample item is "I'm normally able to get into someone's shoes and experience their emotions". Internal consistency reliabilities for the original subscales were: emotionality, α= .75, sociability, α= .78, self-control, α= .72, and wellbeing, α= .83. In the present study, the internal consistency reliability was .78, .87, .79, and .86 for emotionality, sociability, self-control, and wellbeing respectively.

Critical Thinking. Critical thinking was measured via the Graduate Skills and Attributes Scale (Melinde, 2014). The measure consisted of 7 items asking participants to report how closely they agree with each statement. The measure utilized a 7-point response scale ranging from (1) completely disagree to (7) completely agree. A sample item is "I consider the complexities of the larger cultural, business and economic reality when approaching a problem or situation". Internal consistency reliability for the original scales was α= .89. In the present study, the internal consistency reliability was α= .83.

Cognitive Reflection Task. Cognitive ability was measured via the Cognitive Reflection Test- Adapted Version (Albaity, Rahman, & Shahidul, 2014). The measure consisted of 3 word problems (see Appendix F) that involve both simple math and critical

thinking skills. The participants were asked to type their numerical response to each item. A sample item is "A bat and a ball together cost 110 cents. The bat costs 100 cents more than the ball. How much (in cents) does the ball cost?" The internal consistency reliability in the present study was α= .74.

CHAPTER FIVE

RESULTS

All statistical analyses were conducted in SPSS 25 and Mplus 8. In order to assess the factor structure of the measure, an EFA was analyzed in SPSS (H1a). Then, a CFA was conducted in Mplus 8 to verify the factor structure that the EFA produced. In order to assess the relationship between factors and the overall SJT score, correlations between scanning, appraising, and interpreting were each conducting separately in relation to the overall CST score.

Descriptive and Correlational Statistics

Table 1 presents the means, standard deviations, bivariate correlations, and Cronbach's Alphas for the measures assessed. Individual's performance on the scanning domain was positively and significantly correlated with the four primary scanning KASOs, including (a) social attention (r= .53), (b) perception skills (r= .77), (c) metacognitive skills (r= .76), and (d) social data gathering skills (r= .83).

Exploratory Factor Analysis

I conducted an exploratory factor analysis (EFA) in SPSS 25. The purpose of conducting an EFA is to determine which variables from a large group form their own cohort. In order to identify how many factors are in this subset, there are a few tests that can be employed. I first ran a parallel analysis to compare my data to a computed random data set, where I could compare eigenvalues of my data set to the values in the random data set. When examining a parallel analysis test, I compared the observed eigenvalues to

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those expected from random data and retain the factors that have observed values larger than random eigenvalues. From this, I concluded that there was one factor. Next, I analyzed a scree plot of the data (See Figure 2). The purpose of this test is to look at a graphical representation of the eigenvalues and determine where there is a substantial drop between components. According to the scree plot, there were three components. This previous analysis was based on principal components analysis, which analyzes all the variance (common and error) associated with a factor.

Next, I ran the data again with a different type of extraction method, maximum likelihood that conducts the analysis based on only common variance. When running this, I specified three factors, as that is the number of factors the scree plot suggested. Additionally, I choose the promax method as the rotation; it is difficult to interpret the "unrotated" version of the factor analysis, so I rotated the solution to increase interpretability. The promax method allows the factor to correlate with each other, or be "oblique". The EFA produced a 2-factor structure, thus not providing support for Hypothesis 1a. The pattern matrix for the 2-factor solution can be seen in Table 4.

Confirmatory Factor Analysis

The 2-factor solution resulting from EFA was further examined and resolved through applying a confirmatory factor analysis, or CFA (Bar-On, 1997). The hypothesized factor structure is shown in Figure 2. Several models were tested to see what the best fitting structure was for the data. The results of these models can be seen in Table 5. The hypothesized structure called for 3 factors, representing scanning, appraising, and interpreting. Unfortunately, the 27 item 3-factor solution did not produce

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a good fitting model. The chi-square for the 27 item, 3 factor solution was x^2= 13273.37 (p= 0.00). Based upon this, not only were different factor solutions tested, but also items were eliminated based on an item analysis to try and produce a better fitting model. The results of the item analysis, including values for item difficulty and item discrimination can be seen in Table 3.

The second alternative model that was tested was a 3-factor, 23 item structure. This produced a slightly better fit, x^2= 10514.52 (p= 0.00), however this is still a poor fit. Then, a 3-factor structure for 16 items was tested, x^2= 1656.67, (p=0.00) which seems to be a better fit. Finally, various factor solutions of the 23-item model were tested (See Table 5). The 2-factor solution of the 23-item model tested seems to be the best fit, x^2= 11679.55, (p=0.00). While this is still not an ideal fit, it was the best out of all of the models tested. Implications of these model results are discussed in the subsequent section. However, based on the EFA and CFA, Hypotheses 1a and 1b are not supported.

Content-Related Validity Assessment

The factor structure does not support Hypotheses 2a-2d since the EFA and CFA do not provide evidence of these four KSAOs loading only on the scanning domain. Individual performance on the "scanning" domain is positively and significantly correlated with total CST score (r= .906), thus supporting Hypothesis 3. Individual's performance on the appraising domain was positively and significantly correlated with the three primary appraising KSAOs, including (a) elaborated knowledge structures (r= .84), (b) metacognitive skills (r= .79), and (c) perspective taking skills (r= .80). However, the factor structure does not support Hypotheses 4a-4c since the EFA and CFA

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do not provide evidence of these three KSAOs loading only on the appraising domain. Individual performance on the "appraising" domain is positively and significantly correlated with total CST score ($r= .91$), thus supporting Hypothesis 5.

Individual's performance on the interpreting domain was positively and significantly correlated with the two primary interpreting KSAOs, specifically (a) social inference skills ($r= .85$) and (b) social forecasting skills ($r= .83$). However, the factor structure does not support Hypotheses 6a-6b since the EFA and CFA do not provide evidence of these two KSAOs loading only on the interpreting domain. Individual performance on the "interpreting" domain was positively and significantly correlated with total CST score ($r= .87$), thus supporting Hypothesis 7.

Assessment of Discriminant and Convergent Validity

To demonstrate evidence of discriminant and convergent validity for the SJT, it must be shown that the measure correlates with, yet contributes additional value (i.e., incremental validity) above existing measures of related constructs. In order to demonstrate value for a new measure of interpersonally based skills, I compared a self-report measure that reflects the underlying domains of the SJT. I administered the *Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF)* (See Appendix B) to MTurk participants along with the SJT measure. Table 2 presents the means, standard deviations, bivariate correlations, and Cronbach's Alphas for the measures assessed. Hypotheses 8a-8b were supported, as the correlation between total SJT score and (a) emotionality ($r= .484$) and (b) sociability ($r= .246$) were both significant. Hypotheses 9a-

9b were not supported, however, as those correlations were significant as well, (a) self control (r= .324) and (b) well-being (r= .213), thus do not provide discriminant validity.

Additionally, a cognitive reflection measure (see Appendix D) was administered along with the final SJT measure. Individual scores on the cognitive reflection test were moderately and significantly correlated with overall CST scores (r= .329), providing support for Hypothesis 10. Scores on the cognitive reflection test were also a significant predictor of SJT scores (p= .00).

Reliability Assessment

To estimate the internal consistency of the reliability for each subdomain score, I used Mosier's (1943) formula for computing the reliability of weighted composites. Using this approach, I based reliability estimates of the domain-level scores on the reliability of the scores that made up each category (as well as their variances, standard deviations, and intercorrelations). Similarly, the reliability estimate of overall CST scores was based on the reliability of the three domain scores that made up the overall CST score. The resulting reliability estimates for domain-level sub scores for scanning, appraising, and interpreting were .72, .75, .58, respectively. The reliability of the CST measure will need to be tested by multiple researchers in various contexts in order to reveal a consensus of findings regarding whether the model is consistent, stable, and reliable (Bar-On, 2006). The overall internal consistency coefficient was found to be α= .87, thus supporting Hypothesis 11.

CHAPTER SIX

DISCUSSION

The nature of work is ever changing, such that *whom* employees interact with and *how* they interact is evolving (Grossman et al., 2014). Increased globalization has introduced an increasingly diverse workforce while technological advances has changed the inherent structure of work. CST provides a framework that individuals can engage in to successfully navigate complex social situations. CST is a higher order process intended to demonstrate how interpersonal KSAOs may be required to interact with each other. Consequently, it is not enough to possess only one or two social competencies alone, but rather the integration of many KSAOs in a continuous process is necessary. The purpose of this study is to provide initial findings for an assessment of CST. I present preliminary validation evidence for a SJT measure of the CST process, with the hopes of pushing the literature further to explore similar avenues.

Findings of this study can be categorized by phase. To summarize, phase one of this study initially developed a set of 40 SJT items based on interviews with SMEs. The content validity of the SJTs was subsequently established by using a separate panel of SMEs to categorize the SJTs based on the KSAO that was needed to answer it. From this, 27 items were kept with 3 items that map onto each KSAO. Additionally, during this phase, the scoring guide for the SJTs was developed through yet another set of SMEs. Overall, phase one resulted in the 27 SJT items along with the SME derived key to score each item.

Phase two of this study involved data collection and analysis of the final SJT measure. Three other assessments were given to participants in conjunction with the SJT (see Appendices B-D). First, I will discuss the findings from the SJT measure alone. The reliability of the overall SJT measure is acceptable and shows moderately high internal consistency. The three domains of this test; scanning, appraising, and interpreting, were each positively and significantly correlated with the overall SJT, as hypothesized. The KSAOs are also positively and significantly correlated to their respective domains. However, it cannot be concluded whether or not the factor structure stands as hypothesized based upon the current results.

Furthermore, in examining CST SJT scores from the perspective of convergence and divergence with other measures, it can be concluded that there is a component of cognitive reflection that is necessary to successfully answer the SJT items. Convergent validity is present for the SJT measure, by correlating significantly with emotionality and sociability components of the TEIQue-SF. However, no discriminant validity was found between the hypothesized measures and should be evaluated again in a future study. Next, I will discuss the implications of these findings and future research propositions.

Implications of Findings

According to the findings described above, the most appropriate CST SJT measure appears to be the 23-item, two-factor scale. Based upon this structure, there would be 9 items measuring scanning (SJT2, SJT3, SJT5, SJT7, SJT8, SJT9, SJT10, SJT11, & SJT12) and 14 items measuring an appraising/interpreting factor (SJT13, SJT14, SJT15, SJT16, SJT17, SJT18, SJT19, SJT20, SJT21, SJT22, SJT23, SJT24,

SJT25, SJT26). The SJT items that are not listed were omitted due to inadequate item difficulty and discrimination values. The omission of the problematic items allowed for a better fitting model altogether. However, future data collection seeks to further refine this model.

The present study contributes to the literature by offering initial validation of a measure of the CST processes, as derived from the original theoretical model. While previous research has made advances in understanding the necessary KSAOs and competencies for employees in todays changing workforce, the CST process integrates these disparate findings to provide a holistic framework. This is the first study to empirically assess this more holistic theoretical approach. The current study also seeks to answer a critical call in the literature for better methods of assessing and developing employee interpersonal KSAOs, especially in terms of how to assess employee effectiveness in the application of these KSAOs to socially complex situations. The SJT approach provides a method that seeks to accurately measure the type of complex situations that employees face on the job, above and beyond what a self-report measure can. This approach also provides insight to training, as real-life SJT scenarios, or role-play training, may be a way to better prepare employees for socially complex situations.

Limitations

There are several limitations in the present study that highlight potential avenues for future research to explore. First, all measures in the present study were assessed via self-report. Although self-report measures have the ability to capture information as perceived by individuals, there is concern regarding biases such as social desirability and

accuracy of the variables measured (Del Boca & Nol, 2000). While the SJT method sought to overcome this self-report bias, many of the remaining measures in the assessment were self-report. Note, participants were assured of anonymity when responding to the measures, which is a method for minimizing concerns with social desirability.

Second, the sample size of the present study may not have been large enough to determine the factor structure accurately. For the purpose of this study, a convenience sample was used, administering the assessment to 200 participants. While this is a sufficient sample size, it may not be enough to determine the difference between the various factors hypothesized for this SJT (Schreiber, Nora, Stage, 2006). This may explain why the EFA and CFA were not able to pick up on the three distinct factors as hypothesized. Related to this, another major limitation is the same sample was used for both the EFA and CFA (Tabachnik & Fidell, 2001). Future directions of this study will strive to overcome this limitation by collecting data from a separate healthcare sample to run a CFA.

Finally, since this is a unique type of test for participants, there could have been a degree of uncertainty/unfamiliarity in the beginning of the test. In other words, there may have been a degree of learning that took place as the participants became more familiar with the format of the test itself. This may explain why the item difficulty increased substantially (i.e. more people answered correctly) the later the item number (see Table 3). Future studies using this SJT measure should randomize the items to avoid any potential learning effects. Additional future research directions are discussed below.

Future Research Directions

An important next step for this research is to test the CST SJT with a sample of working adults in an organizational context where socioemotional demands are experienced regularly. For example, a sample of healthcare leaders across a variety of tenure, positions, and demographics would provide an ideal opportunity to further assess the structure and validity of the CST items, and better understand if there is a clear distinction among the subdimensions. Upon completion of this type of data collection, the next step will be to conduct another CFA, which could be applied based upon the resulting factor structure of the SJT (Bar-On, 2006) as demonstrated in the current study. Also, the factor analytic procedure is used to determine the factorial structure of the scale, or in other words produce information on the degree to which the factorial components of the model are found to structurally exist. The analysis will be performed on the normative sample with the means of progressing from exploratory factor analytic techniques to the CFA procedure (Bar-On, 1997).

An additional element of validation needed is in conducting an assessment of the CST SJT in terms of its criterion validity. Consistent with the individual level focus of the present study, the CST SJT should demonstrate criterion-related validity with peer or supervisor ratings of individual employees. A research proposition that would provide significant value to this measure suggests the collection of peer or supervisor rater evaluations of an individual, to reflect the degree of KSAOs as evaluated by other sources. Thus, it is expected that the SJT should correlate positively with peer or supervisor ratings of individual's performance on critical social thinking by measuring KSAOs underlying dimensions of: scanning, appraising/assessing, and interpreting.

Finally, in an effort to provide a result for the discriminatory construct validity of the CST measure, future research should assess validated measures to determine overlap or unique contributions. This would consist of assessing proposed underlying CST factors along with relevant measures of cognitive intelligence, personality, and social desirability. In particular, there is a significant value to gathering predictive validity findings that could offer important implications for employees in organizational settings, in terms of determining the generalizability of the CST SJT measure across workplaces. Convergent validity will be demonstrated by measuring CST along with a subset of the constructs outlined in the literature review section. To reiterate, these constructs include critical thinking, naturalistic decision making, social and situational awareness, social, emotional, and cultural competencies, and lastly, mindfulness.

Conclusion

The aim of this study was to develop and show initial evidence of validation for a SJT measurement approach of the CST process. The purpose of creating this measure is to assess one's ability to engage in each phase of the CST process by measuring the underlying degree of KSAOs for a given individual. From a practical standpoint, CST is becoming necessary for carrying out everyday work functions (Joseph & Newman, 2010). Additionally, younger generations are shown to be spending more time engaging in social interactions due to the rise of technology, and this reliance on technology may have negative implications for individuals to develop and use these skills in face-to-face social interactions (Van Deursen & Van Dijk (2011). This creates a potential need to train and develop such skills, especially since this set of KSAOs may be lacking in the

younger, incoming workforce. The conceptual model and training insights provided by

Grossman and colleagues (2014) are a starting point for organizations to begin designing

training interventions for their employees. In sum, the CST framework provides an

integrated source of information to inform evidence-based practices for organizations.

The validated measure of CST has strengthened this evidence and potentially could

propel training design interventions for future workforces.

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APPENDICES

MEASURE OF CRITICAL SOCIAL THINKING

Scanning

Social Attention Skills

SJT1: As a leader you notice an increase in rude sarcastic comments between members of your team. These comments are mainly from emails you've been included on, where your employees seem to be complaining about each other. What would you do?

A. Seek out more information before you confront the employees at the potential harmful climate these emails are causing.
B. Include all members on a detailed email outlining the adverse effects of sarcasm and workplace bullying.
C. Plan a meeting with each member individually to discuss their participation and their lack of interpersonal skills and ability to work effectively together.
D. Make a report to HR about your concerns.
E. Ignore the emails, things will calm down eventually and it's best not to get involved.
F. Plan a meeting with the entire group of members who are participating in the chain of emails.

SJT 2: You are feeling pulled in every direction: one of your employees that you supervise needs help with a project that is due soon and you are the expert on the topic. Another one of your employees is requesting you mentor him. You are also busy with your own project deadlines that are approaching. What would you do?

A. As a supervisor, you must put your own deadlines and work assignments ahead of your subordinates, and you do not have time to take on additional projects/mentoring.
B. Find out more details about the project and use it as an opportunity to mentor one employee and help guide the other one finish up his/her work.
C. Decide which employee is better at their job; since you have limited resources you should put your time into assisting the better performer.
D. Take over as lead on the employee's project that is due soon and seek out another supervisor that can help with mentoring the other employee.
E. Mentor the employee by assigning him/her to help finish this project as soon as possible, that way the employee leading the project will serve as mentor.
F. Put off your own project; your employee needs come before your own.

SJT 3: You walk into your meeting a few minutes early, and upon entering the room you can see and feel the tension that is in the room. You suspect that there must have been a heated discussion right before you arrived. What would you do?

    A. You leave the conference room and let your boss and colleagues wrap up any unfinished business and come back when the meeting starts.
    B. Make a joke about the tension in the room in order to put everyone at ease before the meeting begins.
    C. Sit down for the meeting but be aware for any further signs of disagreement and, if appropriate, offer any help to alleviate the situation.
    D. Sit down for the meeting as normal; this situation does not concern you since it did not originally happen while you were in the room.
    E. Text your best friend who is also on his way to the meeting to let him know how uncomfortable it is and tell him to save himself and not come.
    F. Stand just outside the doorway so you can hear what is going on, but do not enter completely because you don't want to interrupt.

Perception Skills

SJT 4: You and a group of coworkers discuss your skepticism with the new direction your department is taking; you collectively feel that your voices were not considered, and this manifests itself as fear of being replaced and strong negative feelings toward this organization in general. What would you do?

    A. You should continue to seek support in your colleagues who feel similar emotions, but you decide that this would be more appropriate to discuss outside of the work setting.
    B. Organize a meeting *individually* with the departmental leaders to express the frustration that you and your coworkers feel.
    C. Take a moment to acknowledge your feelings, but then view the situation from a more open perspective and how this may benefit the department.
    D. Organize a meeting with the departmental leaders to express the frustration that you and your coworkers feel; approaching it as a group to come across as less defensive in justifying your truth.
    E. Begin filling out applications for positions at another organization; it is better to leave before you are replaced.
    F. Bring your concerns as a group to the HR department to seek more information before judging the leader's motives for the departmental change.

SJT 5: You enter the breakroom and overhear two coworkers talking in a hushed voice. You can vaguely make out what they are saying but you definitely hear them mention another coworkers name and begin to laugh snarkily. What do you do?

    A. Confront them with a lecture about breaking the rules around "no gossip".
    B. Ignore them, don't establish eye contact, get your coffee, and leave quickly.

C. Join them; add even more details to their conversation because you know exactly what situation they are discussing.
D. Tell your coworker that you overheard these two talking about her, so she can take it into her own hands.
E. Join them; nod, listen and smile, but do not contribute to the conversation.
F. Tell them directly how you feel about not gossiping and suggest a change in topic.

SJT 6: You notice that your coworker, Ashley, is becoming more agitated at work. You work with her closely on assignments, and report to the same direct supervisor. Her frustrations seem to be building and interfering with your partnership on tasks. If her anger is due to the work tasks, then you are confident that you can help reduce some of it. What would you do?

A. Let Ashley know directly that you perceive her behavior lately as being a bit more frustrated in nature, and ask if she needs someone to talk to.
B. Pretend not to notice the change in behavior, it is not your place to intervene with her personal life.
C. Ask Ashley why she has been agitated lately and let her know that if she needs to talk about anything, that she can talk with you.
D. Go to your direct supervisor for a private conversation discussing your concerns about Ashley.
E. Since you notice Ashley is having a tough time, take on more of the work for your partnership tasks.
F. Tell Ashley that you do not want to work with her any further on this project but you do not intend to tell your supervisor about the conflict.

Metacognitive Skills

SJT 7: You have been in your job role for about a year now and are familiar with the routine of your everyday tasks. Lately, however, you have been having trouble completing even the most basic tasks and feel disengaged. You notice your supervisor has been checking up on you much more frequently than usual. You are unsure if she has noticed your decline in productivity and that's why she's been checking up more, or if you are just becoming hyper-aware of her presence since you feel as if you are falling behind. What do you do?

A. Become defensive the next time that you notice your supervisor observing you.
B. Try to adjust your attitude and become more engaged at work again.
C. Think about why she might be keeping a closer eye on you and your work, try to be more mindful of her supervision to make sure you are not building the story in your head.
D. Ask to meet with her privately and explain your side of things and that it makes you uncomfortable that she is watching you more closely than the other employees.

E. Politely ask your supervisor why she has been checking up on you more frequently.

F. Nothing, try to look like your very busy whenever you see her around.

SJT 8: Shane sits next to you at the office and always listens to music on his computer with his headphones in. However, in the past week, he has fallen asleep at his desk twice during the workday and snores loudly. You, along with other nearby coworkers, are having difficulty concentrating on your on work, given the circumstances. This is very unusual, so you begin to wonder if there is something else going on. What would you do?

A. Have a direct conversation with Shane and tell him he is distracting you and needs to get his act together.

B. Make a report to HR about your concerns.

C. Ask your good friend, who sits on the opposite side of the office, to switch seats with you.

D. Form a plan of action with your nearby coworkers on how to bring this to your boss's attention.

E. Buy a pair of headphones for yourself so you no longer hear Shane snoring.

F. Nudge Shane every time he falls asleep so he doesn't get in trouble.

SJT 9: You are part of a team that is preparing a presentation for a conference. You plan to meet at 9am to finalize the slides for the presentation. You arrive at 8:55, and two other members arrive by 9:05. Your frustration grows as the time passes. The fourth and final member of the team, arrives at 9:20 without an apology or excuse. What would you do?

A. Even though you would have appreciated an apology, move on with your meeting as normal.

B. Refuse to move on with the meeting until you are given an apology.

C. Voice your opinion that the member should be kicked off the team because of their inexcusable behavior.

D. Nothing, but in your head assume that this member is not trustworthy and do not take any of his/her idea into consideration.

E. Move on with your meeting at normal, but make passing comments throughout about your frustration with the members tardiness.

F. Address the situation and ask the member why he or she is late and reinforce the agreement for everyone to be on time.

Social Data Gathering Skills

SJT 10: You are entering the restroom where you hear another person talking loudly on their phone. The last words you hear are "I'm never going to trust anyone again…and my boss is a total jerk". Their voice goes to a whisper when they notice someone has entered. You cannot see them; they are in another stall. You are not sure who it is, but

suspect it's a specific coworker. If it is, you are their supervisor, "the total jerk". What do you do?

A. Loudly clear your throat or cough to make yourself known in the restroom.
B. Say, "Hello, I just want you to know someone is in here in in case your conversation is confidential."
C. Say the name of the person you think it is, to see if they respond to their name being called out.
D. Wait by the restroom door for the person to exit and tell them directly what you overheard.
E. Fire this employee; gossip is not tolerated in your unit.
F. Nothing now. Approach this person later to ask if they would have a conversation with you about any concerns they have.

SJT 11: You are in the middle of a presentation to your department and it is going really well. However, during the presentation, David makes an off topic comment that everyone else laughs at. You are worried that his sarcastic comment is undermining your authority. What would you do?

A. As everyone is leaving the room, you ask David if you can speak to him in private later to discuss the sarcastic comment and clear the air.
B. Make an equally sarcastic comment about David in front of the crowd.
C. Immediately kick David out of the presentation to show that such comments will not be tolerated.
D. Ask everyone why they are laughing in order to take back authority over the crowd.
E. Continue on with your presentation and pretend like nothing has happened.
F. Report David to your supervisor for making the inappropriate comment during your presentation.

SJT 12: Joshua has been having some issues with Rose in his unit and he tells you he has been going to Margaret to discuss his frustrations. However, Joshua feels he must come to you, his supervisor, and to discuss these issues. How would you respond?

A. You encourage Joshua to speak directly to Rose to resolve things.
B. You tell Joshua that he was wrong to gossip with Margaret.
C. You talk directly to Rose about the issue him and Joshua are having.
D. Call Margaret into your office and discuss the dangers of gossip with her.
E. Plan a meeting with Joshua, Rose, and Margaret in order to discuss the issue as a group.
F. Stay out of this, there are too many people involved and you do not want to complicate the situation more.

Appraising/Assessing

Elaborated knowledge structure

SJT 13: You work for a company that is going out of business. There are many computers left over from employees that have already been let go. Several of coworkers are taking the computers home with them, since they'll probably just be auctioned anyway. Your colleague asks if you want one. What would you do?

    A. You evaluate the situation and decide that theft goes against your true values and morals and decline the invitation for the computer.
    B. You could really use a new computer so you take it home.
    C. Remove yourself from the situation politely without judgment.
    D. Report this behavior to the authorities without talking to your coworkers to warn them against the illegal actions.
    E. Have a discussion with your coworker about how morally wrong theft is.
    F. Became visibly angry at your coworker's actions and walk away.

SJT 14: Joe has a habit of not really listening to his team's contributions during their weekly meetings even though he acts as though he's engaged. Suddenly, his subordinates stop providing input altogether because they don't see the point if Joe doesn't consider their ideas. What is best first step for Joe to take to resolve this team conflict?

    A. Joe must evaluate whether or not he has the right members working on his team because his job requires diverse and innovative subordinates to work for him.
    B. Joe should fire the members on his team and get better employees since they are not providing any input.
    C. Joe should sign up for a coaching program at his organization to learn tactics for motivating his employees.
    D. The first step Joe should take is to meet with his team and communicate his disappointment and frustrating concerning their lack of engagement.
    E. Joe should call on each individual during the meeting and demand that they provide input.
    F. Joe will work to uncover any inner biases to his own preferences that are at fault here.

SJT 15: A coworker comes up to you about an issue with a client's file. A critical piece of the final report appears to be missing. You know you were a part of a team that dealt with that client, and you know your actions were by the book. How do you respond to your coworker?

    A. Talk through what the issue is with your coworker, and try to think more openly rather than assume that your paperwork is absolutely correct.
    B. Begin arguing with the coworker that every client file you've ever dealt with has been by the book.
    C. Tell the coworker to ignore the issue with the file and continue with the client as if it wasn't there.

D. Admit that you could have made a mistake, even though you are confident that you didn't.
E. Tell your coworker to go talk to a different member of the team who dealt with this client, since it must be their fault.
F. Let your coworker fix whatever the issue at hand is, since you are busy with another client.

Metaperceptual skills

SJT 16: Your boss is talking to another employee as you walk into work. You realize they are talking about you since they become hushed and stop talking altogether once they see you. This makes you angry and upset. How would you react?

A. Speak to your coworker in private first, this way you are meeting with your peer, rather than confronting your boss.
B. Immediately confront your boss and coworker stating that you know they are talking badly about you.
C. Ask openly if your boss and coworker are talking about you.
D. Speak with your boss in private first, this way you are going straight to the authority figure, rather than going behind his/her back.
E. Take a few minutes to yourself in private to reflect on what your part in this may be.
F. Walk away; who cares what they think about you.

SJT 17: You're in a meeting with your boss and several of your coworkers brainstorming ideas for an upcoming project. Your boss is turning all of your coworkers suggestions down, so you are afraid to pitch your idea. However, you could make a really good impression if your boss likes your idea. What would you do?

A. Pitch your idea even though you are nervous to; even if your boss rejects it, your coworkers may value your opinion and willingness to speak up.
B. Keep your idea to yourself because you fear being rejected in front of your peers.
C. Email your boss after the meeting with your idea, that way if it is rejected, your coworkers won't know.
D. Speak up and tell your boss directly that he is being unfair for rejecting all of your coworkers' ideas.
E. Wait until the meeting is over to vent with your coworkers about how difficult your boss is being.
F. Anonymously leave your boss a note with your idea on it so there is no risk of being rejected in front of your coworkers.

SJT 18: You view your office space as a place for work and not socializing. However, one of your coworkers does not seem to share this mindset. They distract you frequently by telling you stories about their personal life. At first, you would engage in these conversations because you did not want to be rude, but it is really taking a toll on your work performance. How would you react?

A. Understand that it would be seen as rude to ignore your coworker, and politely tell him or her that you are in the middle of a task next time they distract you.
B. Talk to your boss about switching to a different space in the office so you are no longer near this chatty coworker.
C. Wear headphones so your coworker gets the hint not to talk to you.
D. Put a sign up on your desk that says "do not disturb" while you are in the middle of important tasks so your coworker gets the hint.
E. Understand that it would be seen as more socially acceptable to just engage in conversation with your coworker and finish your work at home.
F. Interrupt your coworker and tell them to stop distracting you and get to work.

Perspective taking
SJT 19: You are a well-respected employee at your company and have been in the same role for many years now. You recently have applied for an open position that is a higher rank than your current role. After several weeks, you still have not heard back but your boss makes an offhand comment during your one-on-one rounding that someone else has been hired. What would you do?

A. You immediately let your emotions be known and be open and honest about your disappointment in not only failing to get promoted, but also with how the situation was handled overall.
B. You make a case for the value you bring to the company and accuse the manager for making a huge mistake by hiring someone else.
C. You immediately walk out of the meeting, and tell your manager you will have to reschedule because you are not in the right mindset to stay and have a productive meeting.
D. You mask your disappointment and anger from your senior leader and therefore you shut down and become disengaged for the rest of the meeting.
E. You quit your current position because what your boss did was unfair; given your experience, you can readily get a better job at another company.
F. You mask your disappointment and anger from your senior leader by internalizing your emotions. You accept your emotions for what they are but let them go for the time being in order to salvage this meeting.

SJT 20: You are selected as the leader for a project that your team is presenting to your boss tomorrow. However, one team member repeatedly becomes upset when his ideas and recommendations are not followed. What would you do?

A. Give him a chance to explain an idea further from start to finish, so it doesn't appear as if you are disregarding his opinion entirely.
B. Get a consensus from the rest of the team to gage their thoughts on whether or not the individual's pitches are relevant.
C. Tell him directly that his ideas are not useful and will probably not help the project.

D. Go along with one of his ideas, even if it doesn't help the project, because it is only fair if you include everyone's opinion.
E. Set up a meeting individually with him to ask politely if he could stop recommending pitches that are irrelevant.
F. Continue to move forward with your team and do not follow through with his recommendations.

SJT 21: You are the manager of a local business. Pat requests time off during a weekday for a doctors appointment. Lee finds out that Pat was granted permission to leave during the day. Lee is angry that he was not given the time off he requested for the morning after a late concert. How would you respond when Lee voices his concern?

A. Ignore him completely because it is none of his business.
B. Address the situation to Lee by reminding him you are not required to give him an explanation.
C. Have your assistant explain this situation to Lee, you do not have time to waste because you have a business to run.
D. Explain the situation to Lee by telling him that time off for doctor appointments are excusable, while time off to sleep in for a concert is not.
E. Understand Lee's point of view and in order to be fair, give him the rest of the day off because he didn't get the time off he requested while Pat did.
F. Lee should be disciplined as he has no right to come to you angry when he is not even dependable.

Interpreting

Social Inference Skills

SJT 22: You and Mary both work together in the same department. Mary is an excellent worker, but tends to wait until the last minute to complete a project while you tend to work steadily and keep on top of your daily work. Because you rely on Mary for certain tasks, you start to become very frustrated with her work style. What do you do?

A. Set up a time with Mary to discuss her work style and how she has worked with team members in the past in order to come to an agreement.
B. The first step is to go to your supervisor and demand that you are partnered up with someone who does not work like Mary does.
C. Attempt to complete your work as you normally do, even if that means having to do some of Mary's tasks in order to keep on track with your own.
D. Confront Mary because of her work style and let her know how inconsiderate you think she is.
E. Partner up with another employee who is in a similar position as Mary and can complete her tasks so you can stay on track with your work.
F. Ask Mary politely to shift her workstyle to match yours as close as possible, that way you can both stay on top of the tasks daily and do not have to wait around on one another.

SJT 23: You are working with a colleague to finalize a project and create annual reports for your manager, all while racing the clock to meet the upcoming deadline. However, your colleague has not communicated with you well and tends to be reactive whenever you offer your opinion on shared tasks. How would you handle this?

A. You have a strong tendency to strive for perfection at work, so you complete the rest of the project on your own while still giving your partner half credit.
B. Bring it to your manager's attention that your partner is causing interpersonal conflict and hindering your ability to work as partners on this project.
C. You have a strong tendency to strive for perfection at work, so you complete the rest of the project on your own but you make it known that you did all of the work.
D. Ask your partner if there is something else that is going on that is causing him/her to be distracted and not hold up their end of the work.
E. Confront your co worker about the difficulties with an explanation of how you've worked successfully in the past on group projects.
F. Confront your co worker about the difficulties you are experiencing with your partnership relative to your past experiences with successful group projects; ask your partner to explain why they think this isn't working and actively listen.

SJT 24: You are a senior leader and your department brings in a new graduate as your partner to assist with administrative tasks. He is a very young, eager worker, but does not fit well with the way things have been done around here. What do you do?

A. Understand that you've failed to teach your new hire about the norms and culture in your department.
B. Talk to HR about your concerns and see if they can move him to a different department within the company.
C. Take a step back and ask yourself how this new behavior might benefit the department.
D. You do not take responsibility for the situation, but instead view it as a learning opportunity for your new hire to readjust his workstyle to fit the department.
E. Your new hire clearly does not fit into this environment and it is necessary to dismiss him from your team.
F. You must go back and review the hiring process that is in place, to make sure that future hires are more suited toward the environment of your department.

Social Forecasting Skills

SJT 25: Your team is working with another work unit within the company and you have been tasked to come up with a proposal to pitch to an external client. Both teams reach an agreement on the final presentation. A week later, during the proposal meeting, the other team begins presenting information that was not discussed previously and makes your team look unprepared. What would you do?

A. Later on with your team, you confront the other team and accuse them of making you look bad.
B. Move on from the situation, but make sure your team never has to work with the other one again.
C. After the presentation, report to the external client what really happen; let them know that the other unit went behind your back and that the information presented was not a consensus.
D. You engage in venting your frustrations concerning the other unit, acknowledge that you are upset, but try to encourage your team to not assume they knew what exactly was going on from the other team's viewpoint.
E. During the meeting, let your frustrations be known to the external client that this other unit went behind your back.
F. Your team decides that they should wait a few days and then reconvene with the other party to discuss and have a conversation about what happened and how it looked from your team's point of view, with the opportunity to ask for their side of the story.

SJT 26: During a meeting, your direct supervisor gets in an argument with one of your coworkers, who also happens to be your best friend. You agree with your coworkers' point of view, but do not want to speak up and anger your supervisor further. When the supervisor turns to you and asks your opinion on the subject, you:

A. Walk through each point of view with your boss and coworker, and demonstrate how each side may be interpreted from different perspectives.
B. Tell your supervisor that you agree with your coworker's point of view and explain in detail why you do.
C. Politely excuse yourself from the situation before you have to give an opinion on either side of the argument.
D. State out loud that you agree with your supervisor's point of view but explain to your coworker later on in private that you really agree with him.
E. State out loud that you agree with your supervisor's point of view, do not explain to your coworker in private that you really agree with him in case it gets back to your supervisor.
F. Tell your supervisor that you prefer to stay out of it and that they need to hash it out on their own.

SJT 27: Marcus is in charge of customer service for a large company and received a phone call from an angry client that demands to speak with the manager of the company. Marcus was told specifically not to forward any calls to the manager, but the client begins using aggressive language. How would you respond to the situation?

A. Respectfully put the customer on hold while you think through the situation.
B. Immediately obey the customer's wishes and put him in contact with the manager.
C. Put the client on hold and try to get in touch quickly with your manager, to see if he or she would be willing to talk to the customer.

D. Tell the client that you will transfer them to the manager, but really transfer them to another coworker.
E. Ask the customer politely to refrain from using aggressive language and offer to help him or her through his issue, but obey your manager by not forwarding the call to him/her.
F. Hang up on the customer because he should not be using aggressive language toward you.

APPENDIX B

SJT SCORING GUIDE

SJT	A	B	C	D	E	F
1	+1	0	0	-1	0	0
2	-1	+1	-1	0	0	0
3	+1	-1	0	0	-1	0
4	0	-1	+1	0	0	0
5	0	0	-1	0	0	+1
6	+1	0	+1	-1	0	-1
7	-1	0	+1	0	0	0
8	+1	-1	0	0	0	0
9	0	0	-1	-1	0	+1
10	0	0	0	-1	-1	+1
11	+1	-1	-1	0	0	+1
12	0	0	0	0	+1	-1
13	+1	-1	0	-1	0	0
14	0	-1	+1	0	-1	+1
15	+1	-1	-1	0	0	0
16	+1	-1	0	0	+1	0
17	+1	0	0	-1	0	0
18	+1	0	0	0	0	-1
19	+1	0	+1	-1	-1	+1
20	+1	-1	-1	0	0	0
21	0	0	0	+1	+1	-1
22	+1	-1	0	-1	0	+1
23	0	0	-1	+1	+1	+1
24	0	0	+1	0	-1	-1
25	0	0	0	+1	-1	+1
26	+1	0	+1	0	-1	0
27	+1	0	0	-1	+1	-1

APPENDIX C

CONTENT VALIDTY EVIDENCE: SJT RATIONALES

SJT #	CST Process	KSAO associated with this item
SJT1	Scanning	Social Attention Skills
SJT2	Scanning	Social Attention Skills
SJT3	Scanning	Social Attention Skills
SJT4	Scanning	Social Perception Skills
SJT5	Scanning	Social Perception Skills
SJT6	Scanning	Social Perception Skills
SJT7	Scanning	Metacognitive Skills
SJT8	Scanning	Metacognitive Skills
SJT9	Scanning	Metacognitive Skills
SJT10	Scanning	Social Data Gathering Skills
SJT11	Scanning	Social Data Gathering Skills
SJT12	Scanning	Social Data Gathering Skills
SJT13	Appraising	Elaborated Knowledge Structure
SJT14	Appraising	Elaborated Knowledge Structure
SJT15	Appraising	Elaborated Knowledge Structure
SJT16	Appraising	Metaperceptual Skills
SJT17	Appraising	Metaperceptual Skills
SJT18	Appraising	Metaperceptual Skills
SJT19	Appraising	Perspective Taking Skills
SJT20	Appraising	Perspective Taking Skills
SJT21	Appraising	Perspective Taking Skills
SJT22	Interpreting	Social Inference Skills
SJT23	Interpreting	Social Inference Skills
SJT24	Interpreting	Social Inference Skills
SJT25	Interpreting	Social Forecasting Skills
SJT26	Interpreting	Social Forecasting Skills
SJT27	Interpreting	Social Forecasting Skills

Scanning

Social Attention Skills

SJT 1: This SJT captures scanning processes that use social attention skills because the limited understanding of the situation as described in the stem means that the most appropriate response involves acquiring more information about the social situation prior to reacting. Before the leader is able to interpret the situation and generate a response, he or she must gather additional information concerning the cues that are influencing the environment.

SJT 2: This SJT captures scanning processes that use social attention skills because the leader does not have all the information to make an informed decision at this point. Before making a decision, the leader should find out more details about the project and the employee who needs mentoring. Ideally, the leader can use this further information to generate a solution that helps both employees at the same time.

SJT 3: This SJT captures scanning processes that use social attention skills because the leader must pick up on the cues that will dictate an appropriate reaction. The leader scans the environment to pick up on the tense nature of the context, and will use this information to inform his or her response.

Perception Skills

SJT 4: This captures scanning processes that use perception skills because the leader uses the social data available to infer meaning about why their voices are not being heard; the leader is perceiving the situation in a way that may or may not be true based on how you infer the significant cues.

SJT 5: This captures scanning processes that use perception skills because the leader uses the cues in the situation to perceive that the two coworkers are gossiping about a third. The leader must make an inference from the behavior of these co workers which will guide how he or she responds.

SJT 6: This captures scanning processes that use perception skills because the leader picks up on the cue that Ashley is agitated, and then takes it a step further by inferring where this agitation might be coming from. By making a connection between her anger and her declining performance on work tasks, the leader can perceive her behavior as stemming from the job.

Metacognitive Skills

SJT 7: This captures scanning processes that use metacognitive skills because it demonstrates having the ability to know one's when one's own biases are clouding their perception of their supervisor's behavior. The leader knows he or she is performing poorly at work, and it is causing them to misinterpret the supervisor's behavior.

SJT 8: This captures scanning processes that use metacognitive skills because the leader's annoyance toward Shane should be acknowledged before making a decision of how to react. Metacognitive skills allow individuals to control and monitor their emotions to influence self-regulatory behavior. The awareness of how the leader's annoyance could impact the situation allows for a better overall assessment of the situation.

SJT 9: This captures scanning processes that use metacognitive skills because having the ability to know how one's biases are influencing attention to social cues is critical to behave appropriately. The leader's cognitive and emotional state is likely impaired by his or her frustration, and in order to move on and have an effective meeting, he or she must acknowledge those factors that are clouding how information throughout the remainder of the meeting is being perceived.

Social Data Gathering Skills

SJT 10: This captures scanning processes that use social data gathering skills because the leader must acquire data and pick up on contextual cues in the social context, both from the environment and the social actors. The contextual cues include the fact that the individual is appearing to be hiding in the bathroom to have a private phone conversation, and becomes hushed when they hear someone enter. This creates an overarching explanation of the situation and actor involved.

SJT 11: This captures scanning processes that use social data gathering skills because the leader picks up on the contextual cues from David and the environment, including a sarcastic comment from David and the audience laughter, and structure the data to make meaning out of the information available. The leader's interpretation of the situation will be based upon the mental model he or she develops.

SJT 12: This captures scanning processes that use social data gathering skills because the leader must gather all of the social cues that are being presented in order to develop a meaningful schema for which he or she can draw the information from. As more information is gathered, the leader can update his or her mental model to accurately reflect the situation and respond appropriately.

Appraising/Assessing

Elaborated Knowledge Structures

SJT 13: This captures appraising/assessing processes that use elaborated knowledge structures because the leader must draw upon his or her current knowledge structure of good employee behavior and moral values. The leader can determine that data from this incoming situation does not fit his or her current mental model and enact their response based upon the non fitting data.

SJT 14: This captures appraising/assessing processes that use elaborated knowledge structures because Joe must incorporate newly gathered information into his existing knowledge structure once his subordinates stop providing input. His preconceived notion is that they will continuing to pitch ideas even if he doesn't take them into consideration or act upon them. However, now that his employees are not behaving the way he is used too, he must take this newly gathered information and update his mental model to effectively respond.

SJT 15: This captures appraising/assessing processes that use elaborated knowledge structures because the leader's current mental model about this client's file is that everything he or she did was by the book and the file was addressed correctly. However, the leader is now being presented new information that there is an issue with this file, so her or she updates their existing knowledge structure to respond accordingly and help solve the issue.

Metaperceptual Skills

SJT 16: This captures appraising/assessing processes that use metaperceptual skills. Metaperception is one's awareness and understanding of how others perceive them. The leader must engage in metaperceptual skills to infer what behavioral information about themselves is being presented to his/her boss and coworker, and how they are using this information to form a judgment.

SJT 17: This captures appraising/assessing processes that use metaperceptual skills because the leader must infer how others will use the information about him/her if the leader decides to pitch their idea. Perceptions about this will dictate how the leader regulates his/her behavior and chooses to respond.

SJT 18: This captures appraising/assessing processes that use metaperceptual skills because the leader must infer the information her or she is making available about themselves to determine if they are initiating this off topic conversation somehow. Then, the leader infers how the coworker will use the information from the leader's reaction to make a judgment about him/her.

Perspective Taking

SJT 19: This captures appraising/assessing processes that use perspective taking skills because the leader must accurately adopt the frame of reference from the boss to understand the important contextual information that he may have used to make his decision. From this, the leader will be better equipped to assess the situation and determine what is important to the boss in his evaluations.

SJT 20: This captures appraising/assessing processes that use perspective taking skills because in order to understand this individual's perspective, the leader must cognitively place his or herself in the person's situation by trying to understand their internal states and thoughts. The leader can reduce potential for conflict by seeing the situation from the team member's side and think about his internal frame of reference as to why he might be upset.

SJT 21: This captures appraising/assessing processes that use perspective taking skills because the leader must understand the frame of reference and Lee's perspective on this situation. Trying to understand Lee's internal states and thoughts might help the leader to understand the contextual cues that are important to him and how he interpreted those cues. For instance, he might view time off as being granted objectively, and is not focused on the circumstances for being granted time off.

Interpreting

Social Inference Skills

SJT 22: This captures interpreting processes that use social inference skills because the leader must use the data at hand as well as his or her existing knowledge base to infer an explanation as to what is occurring and why. Is there any additional information the leader is missing in order to fully understand the situation; what other contextual cues can be applied to make sense of the known data? In order to get additional information, the leader must speak with Mary directly.

SJT 23: This captures interpreting processes that use social inference skills because the leader should try to seek additional contextual information by speaking with his or her colleague to fully understand the situation.

SJT 24: This captures interpreting processes that use social inference skills because the leader must develop a rationale surrounding the social situation based on situational cues. The leader can formulate an explanation for how this new partner may benefit the department by applying contextual data to fill in gaps and update his or her knowledge structure regarding how a partner should act.

Social Forecasting Skills

SJT 25: This captures interpreting processes that use social forecasting skills because the leader must consider all the circumstances that lead to this outcome so her or she can plan a conversation with the other team. To prepare, the leader must infer meaning from the social cues and information gathered during the presentation and forecast what might be discussed during the meeting and potential solutions to mediate the situation.

SJT 26: This captures interpreting processes that use social forecasting skills because the leader must gather all the information presented in the argument to infer meaning from the social cues and forecast what could be discussed to alleviate the situation at hand. The leader should forecast the likely events that would happen if he or she walks through each side of the situation so the supervisor and coworker can understand both sides of the argument.

SJT 27: This captures interpreting processes that use social forecasting skills because the leader should forecast what would likely happen if he or she forwards the call to their manager versus if he or she engages in other possible solutions. What circumstances would lead to the best possible plan of action and what consequences would that outcome potentially entail for both the leader and the customer?

TEIQue-SF

Instructions: Please answer each statement below by putting a circle around the number that best reflects your degree of agreement or disagreement with that statement. Do not think too long about the exact meaning of the statements. Work quickly and try to answer as accurately as possible. There are no right or wrong answers. There are seven possible responses to each statement ranging from 'Completely Disagree' (number 1) to 'Completely Agree' (number 7).

1 . . . . 2 . . . . 3 . . . . 4 . . . . 5 . . . . 6 7
Completely   **Completely**
 Disagree   **Agree**

1. Expressing my emotions with words is not a problem for me.	1	2	3	4	5	6	7
2. I often find it difficult to see things from another person's viewpoint.	1	2	3	4	5	6	7
3. On the whole, I'm a highly motivated person.	1	2	3	4	5	6	7
4. I usually find it difficult to regulate my emotions.	1	2	3	4	5	6	7
5. I generally don't find life enjoyable.	1	2	3	4	5	6	7
6. I can deal effectively with people.	1	2	3	4	5	6	7
7. I tend to change my mind frequently.	1	2	3	4	5	6	7
8. Many times, I can't figure out what emotion I'm feeling.	1	2	3	4	5	6	7
9. I feel that I have a number of good qualities.	1	2	3	4	5	6	7
10. I often find it difficult to stand up for my rights.	1	2	3	4	5	6	7
11. I'm usually able to influence the way other people feel.	1	2	3	4	5	6	7
12. On the whole, I have a gloomy perspective on most things.	1	2	3	4	5	6	7
13. Those close to me often complain that I don't treat them right.	1	2	3	4	5	6	7
14. I often find it difficult to adjust my life according to the circumstances.	1	2	3	4	5	6	7
15. On the whole, I'm able to deal with stress.	1	2	3	4	5	6	7
16. I often find it difficult to show my affection to those close to me.	1	2	3	4	5	6	7
17. I'm normally able to "get into someone's shoes" and experience their emotions.	1	2	3	4	5	6	7
18. I normally find it difficult to keep myself motivated.	1	2	3	4	5	6	7
19. I'm usually able to find ways to control my emotions when I want to.	1	2	3	4	5	6	7
20. On the whole, I'm pleased with my life.	1	2	3	4	5	6	7
21. I would describe myself as a good negotiator.	1	2	3	4	5	6	7
22. I tend to get involved in things I later wish I could get out of.	1	2	3	4	5	6	7
23. I often pause and think about my feelings.	1	2	3	4	5	6	7

24. I believe I'm full of personal strengths.	1	2	3	4	5	6	7
25. I tend to "back down" even if I know I'm right.	1	2	3	4	5	6	7
26. I don't seem to have any power at all over other people's feelings.	1	2	3	4	5	6	7
27. I generally believe that things will work out fine in my life.	1	2	3	4	5	6	7
28. I find it difficult to bond well even with those close to me.	1	2	3	4	5	6	7
29. Generally, I'm able to adapt to new environments.	1	2	3	4	5	6	7
30. Others admire me for being relaxed.	1	2	3	4	5	6	7

APPENDIX E

MEASURE OF CRITICAL THINKING

Critical Thinking: Graduate Skills and Attributes Scale (7-point Likert Scale)

1. I make quick but clear decisions that spur others on towards action.
2. I can probe for further information to enhance my understanding of a problem.
3. I can structure information in a way that meets the needs of my audience.
4. I can initiate changes to make my work or life more satisfying and developmental.
5. I consider the complexities of the larger cultural, business and economic reality when approaching a problem or situation.
6. I offer unique and novel ideas that add new knowledge and insights to a problem or situation.
7. I am creative in achieving my goals by anticipating problems before they happen. I usually set priorities with a proper sense of urgency and importance.

APPENDIX F
MEASURE OF COGNITIVE RELFECTION

Albaity, M., Rahman, M., & Shahidul, I. (2014). Cognitive Reflection Test--Adapted Version [Database record]. Retrieved from PsycTESTS. doi: http://dx.doi.org/10.1037/t36110-000

1. A bat and a ball together cost 110 cents. The bat costs 100 cents more than the ball. How much (in cents) does the ball cost? (5 cents)
2. If it takes 5 machines 5 minutes to make 5 widgets, how long (in minutes) would it take 100 machines to make 100 widgets? _____ (5 minutes)
3. In a lake, there is a patch of roses. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long (in days) would it take for the patch to cover half of the lake? _____ (47 days)

Table 1

Means, Standard deviations, reliabilities, and bivariate correlations among the study variables

Variables	N	Min.	Max.	Mean	SD	1	2	3	4
1. Scanning	191	-8	20	9.77	5.43	(.72)			
2. Appraising	191	-9	17	8.54	5.04	.696**	(.75)		
3. Interpreting	191	-7	12	5.68	3.52	.688**	.716**	(.58)	
4. Total SJT Score	191	-20	43	23.99	12.54	.906**	.905**	.867**	(.87)

Notes: ** $p < .01$, * $p < .05$. Values in parentheses are Cronbach's alpha.

Table 2

Means, Standard deviations, reliabilities, and bivariate correlations among the study variables

Variables	N	Min.	Max.	Mean	SD	1	2	3	4	5	6
1. Global Trait EI	183	2.07	6.93	5.17	1.01	(.948)					
2. Well-being	190	1.00	7.00	5.33	1.23	.895**	(.855)				
3. Self Control	186	1.83	7.00	5.04	1.12	.891**	.749**	(.792)			
4. Emotionality	190	-2.50	7.00	5.14	1.09	.845**	.638**	.663**	(.806)		
5. Sociability	190	1.33	7.00	4.90	1.11	.874**	.755**	.748**	.629	(.782)	
6. Total SJT Score	191	-20	7.00	23.99	12.54	.362**	.213**	.324**	.484**	.246**	(.87)

Notes: ** $p < .01$, * $p < .05$. Values in parentheses are Cronbach's alpha.

Table 3

Item analysis of SJT; item difficulty and item discrimination are reported.

Item Number	Item Difficulty	Item Discrimination
SJT1	0.35	0.15
SJT2	0.66	0.50
SJT3	0.50	0.20
SJT4	0.35	0.18
SJT5	0.77	0.48
SJT6	0.96	0.50
SJT7	0.91	0.62
SJT8	0.61	0.35
SJT9	0.93	0.36
SJT10	0.92	0.59
SJT11	0.89	0.36
SJT12	0.81	0.55
SJT13	0.83	0.50
SJT14	0.91	0.60
SJT15	0.94	0.68
SJT16	0.78	0.38
SJT17	0.89	0.62
SJT18	0.85	0.38
SJT19	0.83	0.28
SJT20	0.75	0.35
SJT21	0.92	0.48

SJT22	0.91	0.59
SJT23	0.68	0.38
SJT24	0.77	0.54
SJT25	0.82	0.31
SJT26	0.85	0.36
SJT27	0.93	0.28

Table 4

Pattern Matrix

SJT Item #	Factor 1	Factor 2
1	-.264	.294
2	.334	.168
3	-.037	.139
4	-.030	.191
5	.583	.004
6	.258	.310
7	.321	.385
8	.019	.266
9	.688	-.147
10	.470	.202
11	.813	-.219
12	.764	-.184
13	.239	.224
14	.126	.484
15	.269	.497
16	.276	.287
17	-.151	.819
18	.012	.357
19	.304	.174
20	.156	.276
21	.425	.134
22	.488	.200
23	.029	.248
24	.256	.279
25	.213	.327
26	.406	.042
27	.262	.272

Extraction Method: Maximum Likelihood
Rotation Method: Promax with Kaiser Normalization
Rotation converged in 3 iterations

Table 5
CFA Results

Model	Chi-Square	P-value	RMSEA	CFI	AIC	BIC	DF
3 Factor, 27 items	13273.373	0	0.204	0.407	12212.287	12622.153	321
2 Factor, 27 items	12165.771	0	0.194	0.458	11100.684	11500.791	322
1 Factor, 27 items	12463.233	0	0.196	0.445	11396.147	11791.375	324
3 Factor, 23 items	10514.524	0	0.225	0.416	11664.496	12010.028	227
2 Factor, 23 items	11679.55	0	0.236	0.35	12825.523	13161.457	229
3 Factor, 16 items	1656.656	0	0.201	0.504	8092.937	8294.019	101
2 Factor, 16 items	1688.861	0	0.201	0.495	8121.142	8314.339	103

Table 6

Dimension	Definition	KSAOs
Scanning	Individual decides what elements of the environment might be important to attend to, regulate biases to ensure relevant data is not filtered out, and gather relevant social data	**Social Attention Skills:** attending to interpersonal cues
		Social Perception Skills: perceiving cues in the environment
		Metacognitive Skills: the ability to know when and how one's biases are influencing attention to social cues
		Social Data-gathering Skills: the ability to acquire data and pick up on contextual cues in the social context, both from the environment and the social actors; social data is gathered, stored and assembled into a mental model
Appraising/Assessing	Individual evaluates how the social data that an individual gathers fits with what the individual already knows and adjusts that knowledge base as needed	**Elaborated Knowledge Structure:** assess the fit of social and cultural data with existing knowledge structures, isolate any non fitting data, and make adjustments to knowledge structures accordingly
		Metaperceptual Skills: an individual's state of being aware of and understanding how others perceive and him or her
		Perspective Taking: accurately perceiving and understanding the cognitive, affective and behavioral components and meanings of another's internal frame of reference
Interpreting	Individual must identify any additional information that he/she is missing in order to fully understand the situation and apply contextual information to make sense of the known social data; forecast the events and actions that are likely to occur, based on sense making and inferring meaning from the contextual data	**Social Inference Skills**: use deductive reasoning to draw inferences or develop stories about the stories about the social events and dynamics and evaluate the derived explanations against the data
		Social Forecasting Skills: after assess the knowledge structure and drawing inferences about new data, individuals then forecast events or actions of actors based on the interpreted meaning of social data

Figure 1

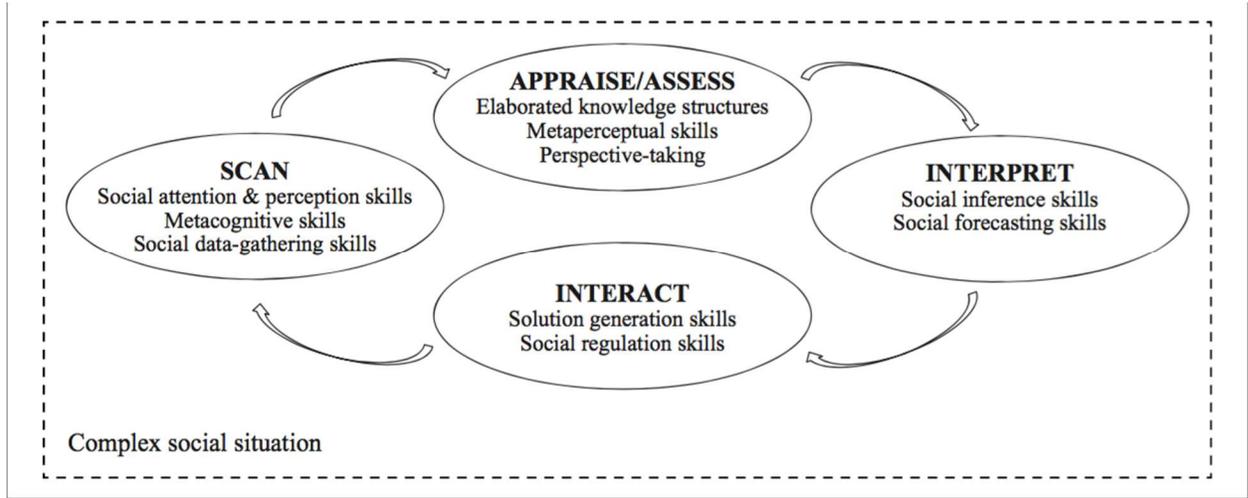*Grossman et al., (2014) Conceptual model of the critical social thinking process.*
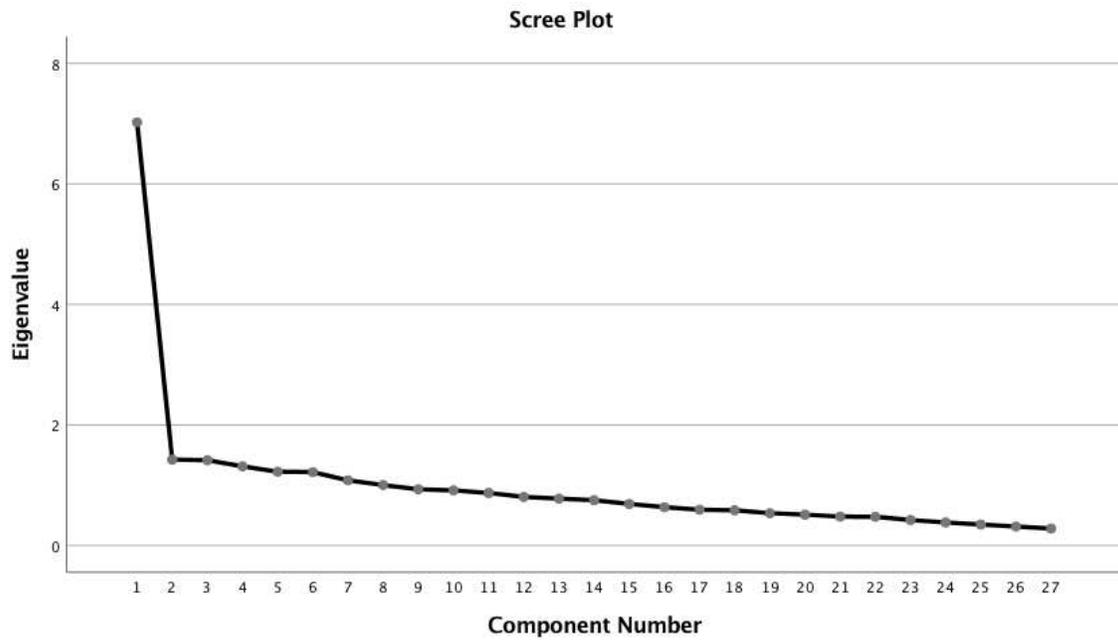
Figure 2
EFA Scree Plot

Figure 3
Hypothesized CFA model