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Using Situational Judgment Tests to Measure Practical Intelligence

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Situational judgment tests (SJTs) have been shown to predict a variety of important professional outcomes, including technical proficiency, job dedication, and supervisors' ratings of participant performance (Chan & Schmitt, 2002; Motowidlo & Tippins, 1993). Yet, there remains some debate as to exactly why these tests are such powerful predictors. In this chapter, we argue that the theory of successful intelligence (Sternberg, 1997, 1999) provides a useful basis for understanding and explaining the predictive power of SJTs. Furthermore, we propose that SJTs developed in accordance with the theory of successful intelligence will ultimately provide a strong basis on which to build training programs for increasing participants' practical skills.

The chapter begins with a brief review of the evidence showing the practical utility of SJTs. We then discuss how the theory of successful intelligence can be used to provide a framework for understanding and explaining the predictive power of SJTs. Finally, we walk through an example of how the theory of successful intelligence has been used as a basis for constructing SJTs within the context of a project designed to assess teachers' levels of practical skills.

THE PRACTICAL UTILITY OF SJTs

Researchers and practitioners alike have long searched for the holy grail of assessment that will allow them to predict with a high degree of accuracy which candidates are most likely to succeed in subsequent professional endeavors. Some believe that tests of general ability, or *g*, represent this holy grail (Gottfredson, 1997; Kuncel, Hezlett, & Ones, 2004). Although tests of *g* do successfully predict at least some important variation in job performance, measures of *g* alone still leave a substantial portion of the variability in work success and educational success unexplained (Gottfredson, 1997; Hunter, 1983). Thus, some researchers have continued to seek out alternative approaches to assessment that, in conjunction with other indicators, will help to explain more of the variability in professional and educational success. In constructing these expanded assessments, researchers have developed the methodology of situational judgment testing.

SJTs have a strong intuitive appeal because they ask participants to imagine themselves in the kind of situations they would be likely to face in their chosen occupation. Most SJTs are administered in paper-and-pencil format, where the stem is a written description of the scenario and all of the responses options are written out. Alternatively, some SJTs have taken the form of a video in which the main plot is acted out among the characters and the participant is asked to respond once the video has stopped playing (Sternberg & The Rainbow Project Collaborators, in press).

The strong intuitive appeal of SJTs is supplemented by their strong scientific appeal. Researchers using SJTs to predict job performance report validity coefficients, on average, of a magnitude of $r = 0.26$ (McDaniel, Morgenson, Finnegan, Campion, & Braveman, 2001). Furthermore, the predictive power of SJTs has been shown to be incremental to measures of general ability and personality. In other words, SJTs appear to capture some unique variance that is not captured by personality or by general ability.

WHAT DO SJTs REALLY MEASURE?

The finding that SJTs have incremental predictive validity over and above tests of personality and general ability is a mixed blessing. On the one hand, SJTs appear to tap one or more different constructs that contribute to prediction. On the other hand, researchers have not been able to agree on exactly what the construct or constructs might be. Some authors have argued that SJTs represent a construct of situational judgment or job knowledge (Schmidt & Hunter, 1993), whereas others contend that variance explained by SJTs may simply be attributable to the method of measurement (Chan

& Schmitt, 2002; Schmitt & Chan, this volume; Weekley & Jones, 1999). Another potential explanation for the incremental predictive power of SJTs is that they measure part of a particular aspect of intelligence that Sternberg (1997, 1999) has called *practical intelligence*—the ability to adapt to, shape, and select real-world environments.

Indeed, the major limitation of SJTs is that there currently exists no overarching theoretical framework holding the various SJTs together besides the fact that they share a common methodological heritage. As several researchers have noted (McDaniel & Nguyen, 2001; Weekley & Jones, 1999), the lack of a shared theoretical framework for the development of SJTs is an important problem for the field. Ployart and Ryan (2000, as cited in McDaniel & Nguyen, 2001) stated that without a firm knowledge of constructs assessed by situational judgment measures, it is all the more difficult to defend them both legally and professionally. Thus, theoretically grounded approaches to the development of SJTs are critical in order to more precisely target and assess the constructs of interest. We believe that using the theory of successful intelligence as a basis for the development of SJTs provides one potential solution.

USING THE THEORY OF SUCCESSFUL INTELLIGENCE TO EXPLAIN THE PREDICTIVE POWER OF SJTs

Successfully intelligent people (Sternberg, 1997, 1999) are those who have developed the skills they need to realize their own goals within their sociocultural contexts. They recognize their strengths and weaknesses and capitalize on their strengths, while at the same time compensating for or correcting their weaknesses using a combination of creative, analytical, and practical skills. According to the theory, a common set of processes underlies all kinds of problem solving. These processes are hypothesized to be universal. For example, although what is considered an intelligent solution to a problem in one culture may be different from the solutions considered to be intelligent in another culture, the need to define problems and translate strategies to solve these problems exists in any culture. *Metacomponents*, or executive processes, plan what to do, monitor things as they are being done, and evaluate the things after they are done. *Performance components* execute the instructions of the metacomponents. *Knowledge-acquisition components* are used to learn how to solve problems or simply to acquire declarative knowledge in the first place. Although the same processes are used universally for all three aspects of intelligence (creative, analytical, and practical), these processes are applied to different kinds of tasks and situations as a function of the extent to which a given

problem requires analytical, creative, or practical thinking, or a combination of these kinds of thinking. In particular, *creative* thinking is invoked when the components are applied to relatively novel tasks or situations. *Analytical* thinking is invoked when components are applied to somewhat familiar kinds of problems that are fairly abstracted from everyday life. *Practical* thinking is invoked when the components are applied to everyday life experiences in order to adapt to, shape, and select environments. Thus, the same components, applied in different contexts, yield different kinds of thinking—creative, analytical, and practical.

THE CONSTRUCT OF PRACTICAL INTELLIGENCE

Practical intelligence represents one important branch of the triarchic theory of successful intelligence. Practical intelligence itself consists of two components: one cognitive, the other behavioral. The cognitive component requires knowledge, both tacit and explicit, about how to deal most effectively with situations that come up in the context of everyday experiences. Explicit knowledge is the kind of knowledge acquired through formal training. Tacit knowledge, on the other hand, is the kind of knowledge that people possess even if they are not able to articulate the principles guiding their behavior or to explain where this knowledge was acquired. Of course, knowledge is only part of the story. One may know the right course of action to take, but exhibit a breakdown in the implementation. Alternatively, a person may be able to react instinctively to a situation without being able to articulate how he or she knew what to do.

In assessing practical intelligence, it is best to assess both the cognitive and behavioral elements. Unfortunately, conducting behavioral assessments is extremely time- and resource-intensive. By contrast, cognitive assessments can be administered much more efficiently. For example, we have created assessments of tacit knowledge for several professions (e.g., teachers, school administrators, military leaders, business school applicants), most of which can be completed in less than 1 hour. Consequently, it would be reasonable to expect a job applicant to complete a SJT of tacit knowledge.

THE CONSTRUCT OF TACIT KNOWLEDGE

Because our research program relies on SJTs to assess the construct of tacit knowledge, we now further discuss the relationship between tacit knowledge and practical intelligence. Most practical problem-solving scenarios involve at least three components: (a) the *situation*; (b) the response

strategy; and (c) the culture. Tacit knowledge is related in an important way to each of these three components.

The Situation

The first component of a practical problem is the situation, or the nature of the underlying problem being faced. Some potential situational descriptions include *uncertainty*, *insubordination*, *status exertion*, and *apathy*. *Uncertainty* occurs when a participant is asked to do something he or she does not know how to do. *Insubordination* results when a participant must act in such a way that could potentially undermine his or her supervisor's authority. *Status exertion* occurs when the participant's authority is challenged. *Apathy* occurs when a participant is faced with a task that he or she does not want to do or in which he or she has no motivation or investment. The specific details of any particular situation may vary, but overall, we believe that there is likely to be a finite number of general situations faced within the context of practical problem solving, and part of our current research efforts involves developing a taxonomy of these situations; however, as Gessner and Klimoski (this volume) point out, this task represents a major challenge.

The Response Strategy

The second component of a problem-solving scenario is the response strategy for dealing with the situation. One of the main areas of research in the field of practical intelligence relates to problem-solving strategies. Among the central characteristics of strategies discussed in the research literature (Belmont & Butterfield, 1969; Berg, 1989; Brown, 1975; Flavell, 1970) are selectivity, goal-directedness, and intentionality. These are the same ingredients that make for success in the workplace, especially in for those in a leadership role (Antonakis, Cianciolo, & Sternberg, 2004; Sternberg, 2003).

Our own recent work has begun to focus on the strategic decisions that participants make about how best to respond to others, given potentially challenging social situations. Using Sternberg's (1997) theory as a guide, we conducted a study designed to examine teachers' levels of tacit knowledge. We conducted structured interviews with teachers ($N = 20$) and asked them to describe situations they had encountered during their teaching careers that they were never formally taught how to handle. We then asked them to recount specific situational examples and to describe how they handled them. The teachers with whom we spoke we employed at schools designated by the U.S. Department of Education as National Blue Ribbon Schools for the 2000–2001 school year. During the fall of 2001, we contacted the principals of all 243 Blue Ribbon schools via e-mail and invited them to

participate in the project. Those principals who responded to our request were asked to nominate three teachers in their school whom they felt were particularly excellent. We then contacted those teachers for our interviews.

Because one of the main goals of this portion of the project was to develop a systematic and theoretical approach to the development of response strategies, we then asked the teachers to think about as many other

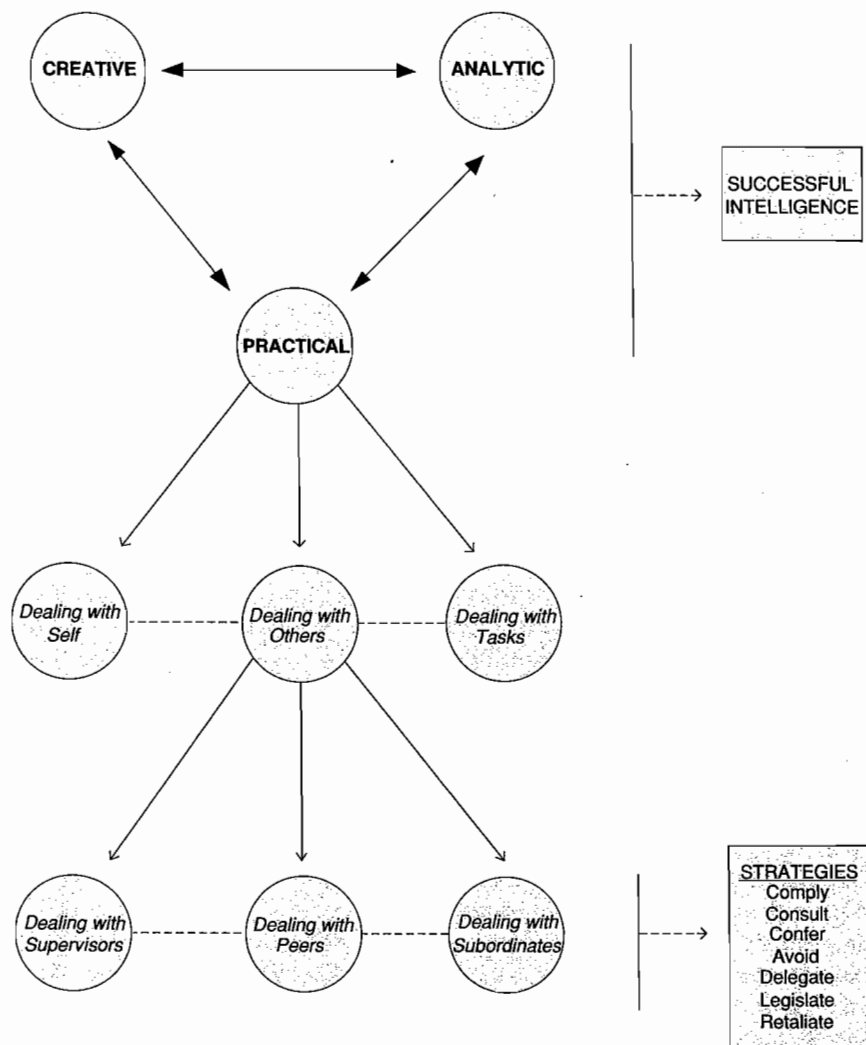


FIG. 6.1. Illustration of how the strategies fit within the broader framework of the theory of successful intelligence.

possible ways of handling the situation as they could. During the course of the project, we further refined the theory by dividing the category of dealing with others into three component parts: (a) *dealing with supervisors* (e.g., principals); (b) *dealing with peers* (e.g., teachers); and (c) *dealing with subordinates* (e.g., students). After compiling the information provided by teachers, as well as those potential responses generated by our research group, we conducted a content analysis of the responses (Fraenkel & Wallen, 2003; Stemler, 2001) to look for trends across the different situations. We arrived at seven practical strategies for dealing with others that seemed to apply across a wide variety of social situations: *avoid, comply, confer, consult, delegate, legislate, or retaliate*.

Figure 6.1 provides a graphical representation of how the seven strategies fit within the broader theoretical framework of successful intelligence.

Table 6.1 presents a summary of the key characteristics of the seven strategies, a description of circumstances where each may be appropriate or inappropriate, and some of their potential advantages and disadvantages. (For a more detailed review of the strategies, see Stemler, Elliott, Grigorenko, & Sternberg, 2005.) It is important to note that each of the seven strategies has advantages and disadvantages within any given social situation. Thus, no single strategy is uniformly best in all situations. Furthermore, the strategies themselves are not necessarily perfectly orthogonal. The strategies are defined in terms of the observable behaviors associated with each strategy. It is important to recognize that the exact same behavior may be driven by very different intentions. We chose to focus on the behavioral aspect of the strategy because, in life, it is people's actions that are most often interpreted, largely because they can be observed. People may later try to infer intentions, but misinterpretations may arise due to a variety of attributional errors (Aronson, Wilson, & Akert, 2001). From a theoretical standpoint, the practically intelligent person is keenly aware of what behavior interacts with which situational contexts to yield the desired outcomes.¹

¹It is reasonable to argue that practical skills involve at least two components. The first component involves understanding the kinds of actions teachers take in order to prevent problems from arising, and the second component involves understanding appropriate action to take once a challenging situation is presented. The seven strategies presented here are primarily concerned with the latter component, and therefore may be considered more reactive than preventive. This is not to underestimate the importance of prevention, however. Kounin's seminal work has led to recognition that a crucial element of behavior management resides in the teacher's ability to prevent difficulties by means of a variety of subtle verbal and nonverbal cues. By exercising these cues in a skillful fashion, problems are less likely to occur in the first place. Nevertheless, all teachers are likely to find themselves in situations where they are confronted by complex social challenges and the ways in which they deal with these will have an important bearing on their professional effectiveness.

TABLE 6.1

Key Characteristics of the Seven Strategies

Strategy	Defining Characteristics and Behaviors	Appropriate Use/ Potential Advantages	Inappropriate Use/ Potential Disadvantages
Comply	<ul style="list-style-type: none"> • Actor does whatever is asked of him or her, regardless of who is asking • Actor takes action that can be interpreted as actively condoning behaviors of others in the situation 	<ul style="list-style-type: none"> • Actor agrees with what he or she is being asked to do • Short-term compliance has long-term benefits (e.g., choose your battles) 	<ul style="list-style-type: none"> • Actor fears emotional consequences of noncompliance • Short-term compliance leads to negative long-term consequences
Consult	<ul style="list-style-type: none"> • Actor appeals to an external source for advice • Actor asks people to work together to solve the problem 	<ul style="list-style-type: none"> • Actor wishes to capitalize on other people's expertise 	<ul style="list-style-type: none"> • Actor will be perceived as incapable of solving his or her own problems
Confer	<ul style="list-style-type: none"> • Actor engages in verbal discussion with source of interaction. Conversation takes place in a, private, one-on-one setting and is characterized by rational explanation of the actor's point of view 	<ul style="list-style-type: none"> • Actor wishes to increase awareness and communication • People are more apt to change when reasons for requests are revealed 	<ul style="list-style-type: none"> • Revealing too much leaves actor vulnerable to being used as a pawn by others
Avoid	<ul style="list-style-type: none"> • Actor avoids, delays, or puts off dealing with a situation or problem • No action is taken at all, or actions that are taken do not deal directly with the situation 	<ul style="list-style-type: none"> • Actor believes that the situation or problem could resolve itself 	<ul style="list-style-type: none"> • Rational discussion of each decision takes too much time to be practical • Actor avoids action in order to put off emotionally difficult decisions

Delegate	<ul style="list-style-type: none"> • Actor either implicitly or explicitly delegates responsibility for taking action to someone else • Actor absolves him or herself of responsibility for action 	<ul style="list-style-type: none"> • Actor recognizes his or her own lack of expertise for dealing with situation. 	<ul style="list-style-type: none"> • Actor is capable of dealing with situation him or herself
Legislate	<ul style="list-style-type: none"> • Actor explicates rules governing future actions of self and others 	<ul style="list-style-type: none"> • Actor is interested in procedural justice • A certain class of situations comes up frequently 	<ul style="list-style-type: none"> • Actor creates too many policies • Policies are too situation-specific • Impossible to remember all policies
Retaliate	<ul style="list-style-type: none"> • Actor reacts physically or verbally in direct response to a situation. Direct response is often like for like in nature or involves punishment 	<ul style="list-style-type: none"> • Other strategies have failed • Antagonist does not respond to rational discussion 	<ul style="list-style-type: none"> • Actor retaliates as an instinctive reaction • Actor retaliates as an act of revenge without a strategy for changing antagonist's behavior

As Mischel (1984) noted, endorsing a consistent strategy across different situational contexts may be maladaptive. Rather, some researchers have argued that successful everyday problem solving will involve carefully fitting strategies to the specific demands of a problem and modifying these strategies in response to changes in the problem (Berg & Sternberg, 1985; Rogoff, Gauvain, & Gardner, 1987; Scribner, 1984). Indeed, some research exists to support the notion that strategies that are supposedly effective across all contexts often fail in situations in which so-called ineffective strategies work (Berg, Calderone, & Gunderson, 1990 as cited in Berg & Calderone, 1994). Thus, tacit knowledge is the capacity to identify which strategy fits a given situation within a particular cultural context.

The Cultural Context

Finally, the third component of a practical problem-solving scenario is the cultural context in which the situation unfolds. For example, a person may be confronted with the same scenario and potential response strategies within two different contexts (e.g., business and education). Even if the same mapping of strategy to situation is used in both contexts, the verdict of whether the behavior is practically intelligent may differ across contexts.

For example, imagine a person who moves to a new job. He knows that there are a finite number of both strategies and situations to be faced. Yet, the cultural context might require an adaptation of the fit between situations and strategies. Asking questions (i.e., the strategy of *consulting*) may have been perceived as a practically intelligent strategy in one context, but in the context of another culture, it may be deadly. Although the general strategies for dealing with practical problems remained constant (e.g., asking questions), as did the nature of the situation (e.g., the participant is uncertain about how to do something), the outcome of practically intelligent behavior, as determined by choosing the best strategy for the situation, may vary across cultures. Thus, tacit knowledge is the capacity to identify the optimal match between strategy and situation within a given culture. Understanding this match may be a universal process and a construct worth assessing.

Tacit knowledge is conceptualized by Sternberg and his colleagues (Sternberg, 1997; Sternberg et al., 2000; Sternberg & Horvath, 1999; Sternberg, Wagner, Williams, & Horvath, 1995) according to three main features, which correspond to the conditions under which it is acquired, its structural representation, and the conditions of its use.

First, tacit knowledge is viewed as knowledge that generally is acquired with little support from other people or resources. In other words, the individual is not directly instructed as to what he or she should learn,

but rather must extract the important lesson from the experience even when learning is not the primary objective. Formal training environments facilitate certain knowledge-acquisition processes, including selective encoding (sorting relevant from irrelevant information in the environment), selective combination (integrating information into a meaningful interpretation of the situation), and selective comparison (relating new information to existing knowledge). When these processes are not well supported, as often is the case in learning from everyday experiences, the likelihood increases that some individuals will fail to acquire the knowledge. It also means that the knowledge will tend to remain unspoken, underemphasized, and poorly conveyed relative to its importance.

Second, tacit knowledge is viewed as procedural in nature. It is knowledge about how to perform various tasks in various situations. Tacit knowledge can be considered a subset of procedural knowledge that is drawn from personal experience. And as is often the case with procedural knowledge, it tends to guide action without being easily articulated (Anderson, 1983).

Part of the difficulty in articulating tacit knowledge is that it typically reflects a set of complex, multicondition rules (production systems) for how to pursue particular goals in particular situations (e.g., rules about how to judge people accurately for a variety of purposes and under a variety of circumstances). These complex rules can be represented in the form of condition-action pairings. For example, knowledge about confronting one's superior might be represented in a form with a compound condition:

IF <you are in a public forum>

AND

IF <the boss says something or does something that you perceive is wrong or inappropriate>

AND

IF <the boss does not ask for questions or comments>

THEN <speak directly to the point of contention and do not make evaluative statements about your boss>

BECAUSE <this saves the boss from embarrassment and preserves your relationship with him.>

In other words, tacit knowledge is more than a set of abstract procedural rules. It is context-specific knowledge about what to do in a given situation or class of situations. As discussed here, this representation serves as the basis of our approach to measuring tacit knowledge.

The third characteristic feature of tacit knowledge is that it has direct relevance to the individual's goals. Knowledge that is based on one's own

practical experience will likely be more instrumental to achieving one's goals than will be knowledge based on someone else's experience or that is overly generic. For example, leaders may be instructed on what leadership approach (e.g., authoritative versus participative) is supposed to be most *appropriate* in a given situation, but they may learn from their own experiences that some other approach is more *effective* in that situation.

In describing tacit knowledge, it is also helpful to clarify that we do not equate tacit knowledge with job knowledge (see, e.g., Schmidt & Hunter, 1993). Rather we view the two as overlapping concepts. Job knowledge includes both declarative and procedural knowledge, and only some procedural knowledge can be characterized as tacit. Tacit knowledge represents a component of procedural knowledge that is used to solve practical, everyday problems, but that is not readily articulated or openly conveyed. Our research has shown that, although one can break down tacit knowledge into knowledge about self, others, and tasks, the three kinds of tacit knowledge are highly correlated (Sternberg et al., 2000).

Assessing tacit knowledge is not tantamount to assessing practical intelligence. Specifically, assessments of tacit knowledge may overlook how the strategy selected for the situation is actually implemented. For example, two participants could choose the same general strategy (e.g., consultation), but implement that strategy in entirely different ways. The first respondent might believe that the right way to ask a question is to be assertive, whereas the other participant might feel that the right way to ask the question is to be humble. Thus, even within the same strategy, the implementation itself may be the key factor preventing a course of action from being practically intelligent.

From the perspective of tacit knowledge, however, we are interested in assessing the extent to which a participant is able to adapt to the cultural context by detecting the optimal match between the situation and the response strategy within a given context.

Disentangling Practical Intelligence, Social Intelligence, and Emotional Intelligence

The construct of practical intelligence shares some overlap with such constructs as social intelligence (Kihlstrom & Cantor, 2000; Marlowe, 1986; Neisser, 1976; Wong, Day, Maxwell, & Meara, 1995) and emotional intelligence (Mayer & Salovey, 1993; Mayer, Salovey, & Caruso, 2000; Mayer, Salovey, Caruso, & Sitarenios, 2003). Practical intelligence is different than either of the preceding constructs by virtue of the fact that the cognitive processes used need not always be directed at solving problems of a social

nature (Hedlund & Sternberg, 2000). In fact, the construct of practical intelligence has been conceived of as encompassing three aspects: (a) dealing with self, (b) dealing with others, and (c) dealing with tasks (Stemler et al., 2005).

Validity Evidence for Practical Intelligence

Most of the work validating the construct of practical intelligence has been conducted using SJTs designed to measure tacit knowledge (TKSJTs). The TKSJTs are typically scored against an expert response profile. In that sense, individuals' scores are compared to the distance of their scores from the average of a set of experts in the domain (e.g., expert managers, teachers). This approach to scoring follows from our theoretical assumption that tacit knowledge is a unidimensional construct.

TKSJTs have been found to have usually modest correlations with tests of academic intelligence. In our work, scores on TKSJTs for academic psychologists and managers correlated nonsignificantly ($-.04$ to $.16$) with verbal reasoning in undergraduate samples (Wagner, 1987; Wagner & Sternberg, 1985). Scores on the TKSJT for managers also exhibited nonsignificant correlations with measures of academic intelligence for a sample of business executives (Wagner & Sternberg, 1990) and a sample of air force recruits (Eddy, 1988). Similar findings were obtained with a TKSJT for sales in samples of undergraduates and salespeople (Wagner, Rashotte, & Sternberg, 1994). In one study, negative correlations were found between scores on tests of tacit knowledge and academic intelligence tests (Sternberg et al., 2001). In another, practical intelligence was a better predictor of practical behaviors, such as hunting skills, than was academic intelligence, among Yup'ik Eskimos who need to hunt in order to survive (Grigorenko et al., 2004). Practical intelligence was also a better predictor of physical and mental health among Russian adults than was academic intelligence (Grigorenko & Sternberg, 2001). Scores on TKSJTs for military leaders exhibited nonsignificant as well as significant correlations ($.02$ to $.25$) with a measure of verbal reasoning ability (Hedlund et al., 1998). The more important finding of this research was that TKSJT scores explained variance in leadership effectiveness beyond verbal ability scores. In other words, TKSJT scores accounted for variance in performance not accounted for by a traditional test of academic intelligence.

In addition to exhibiting distinctions from academic intelligence, practical intelligence (at least as measured by tacit knowledge) appears to be distinct from personality variables. In a study with business executives, Wagner and Sternberg (1990) obtained data on several personality-type

tests, including the California Psychological Inventory (Gough, 1986), the Myers-Briggs Type Indicator (Myers, 1962), and the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B; Schutz, 1989). TKSJT scores generally exhibited nonsignificant correlations with all of the personality measures, with the exception of the social presence factor of the California Psychological Inventory and the control expressed factor of the FIRO-B ($r = .29$ and $.25$, respectively).

Beyond the evidence for the empirical distinctiveness of the construct of tacit knowledge, there is also evidence to support the assertion that tacit knowledge predicts important outcomes. In studies with business managers, tacit knowledge scores correlated in the range of $.2$ to $.4$ with criteria such as salary, years of management experience, and whether the manager worked for a company in the Fortune 500 list (Wagner, 1987; Wagner & Sternberg, 1985). Wagner and Sternberg (1990) obtained a correlation of $.61$ between TKSJTs and performance on a managerial simulation and found that TKSJT scores explained additional variance beyond IQ and other personality and ability measures. In a study with bank branch managers, Wagner and Sternberg (1985) obtained significant correlations between TKSJT scores and average percentage of merit-based salary increase ($r = .48$, $p < .05$) and average performance rating for the category of generating new business for the bank ($r = .56$, $p < .05$). Williams and Sternberg (cited in Sternberg et al., 1995) further found that TKSJT scores were related to several indicators of managerial success, including compensation, age-controlled compensation, level of position, and job satisfaction, with correlations ranging from $.23$ to $.39$.

Finally, in addition to evidence for the discriminant and predictive validity of tacit knowledge, several studies by Sternberg and colleagues (Sternberg & The Rainbow Project Collaborators, in press; Sternberg, Torff, & Grigorenko, 1998) have shown that using expanded measures of intelligence tends to reduce the persistent ethnic differences in achievement that are frequently observed on more traditional assessments. Specifically, the ethnic group differences between White and minority students frequently observed on tests of analytical skills (Chubb & Loveless, 2002; Jencks & Phillips, 1998) tend to be drastically reduced on measures of tacit knowledge.

Our results are consistent with some results in the literature and appear, at face value, to be less consistent with other results, for example, of McDaniel et al. (2001). We believe that some of the inconsistencies are surface inconsistencies.

First, many investigators correct correlation coefficients for restriction of range. We do not. To begin with, we think the assumptions underlying corrections are somewhat dubious. In addition, we do not believe that

the population mean and standard deviation are appropriate comparisons to most of our results. For example, when we measure tacit knowledge of business executives or Army battalion commanders, we are not dealing with a population that has a mean IQ of 100 and a standard deviation of 15. We do not even know what the mean and standard deviation for this population would be. But we believe that typical corrections inflate correlations by assuming an artificial population that does not apply. Business executives, for example, are not just drawn from the average population.

Second, many investigators correct correlation coefficients for attenuation. We do not. We have no great objection in principle to doing so, but we believe that such corrections once again entail dubious assumptions, at times even leading to correlations greater than 1. Moreover, the lower the reliability of the test and the greater the correction, the less likely it seems to represent reality.

Third, we have not used the full range of personality measures one might use. It is quite possible that other measures of personality would yield correlations higher than those few we have used.

In the end, we are not inclined to get into an argument over what the "true" correlations are, because there are no true correlations of tacit knowledge with *g* or anything else. The correlations depend on many things—the tests used, the population sampled, the circumstances of testing, the context in which the tests are given, and so forth (see Sternberg, 2004). We have no dispute with those who believe that general ability is important to success in work as well as in school. We believe, however, that it is only part of the story.

As an aside, academics likely have, on average, very high IQs, in that they were selected for PhD programs on the basis of scores on related tests. But academics' success on IQ tests is not matched by their success in terms of societal norms. They are not at or near the top in prestige, and certainly not in terms of income. Indeed, in most parts of the world, academics, for all their high IQs, are among the poorest paid professionals for people with good educations. Most of them also have relatively little impact on the world, in comparison, say, with politicians or business executives, and their views are usually ignored or paid little attention when they try to influence policy. Finally, they write in journals that few people read and even fewer understand. If *g* is highly correlated with societal measures of success, the very academics who trumpet the correlation at times seem to defy their own prediction, when success is measured in typical societal terms. Of course, there are many measures of success, but we refer here to the very ones that scholars tend to use as criteria, such as pay, prestige, and influence.

USING THE THEORY OF SUCCESSFUL INTELLIGENCE TO CREATE SJTs

In the final section of this chapter, we focus on the development of SJTs that we designed to measure the extent to which teachers endorse each strategy across a variety of situations. We present three practical examples illustrating how the seven strategies can be used to measure various ways of handling social situations. Preliminary content-related validity evidence for the measures is reported using interrater reliability estimates.

Examples of SJTs for Teachers

In this section, we present an account of how the seven strategies were used to develop potential response alternatives to SJTs for elementary, middle, and high school teachers, respectively. We developed three separate surveys because we found that the types of issues faced by each group of teachers were sufficiently different to warrant separate TKSJTs.

The social situations presented as the stem of each item were elicited from interviews conducted with teachers. We asked for examples of situations they had encountered throughout the course of their teaching careers that they had not been formally taught how to handle. Accompanying each stem was a list of the potential response options. In generating these options, we tried to retain as many as possible of the actual responses given by teachers during the interviews. We also drew up some further response options ourselves in order to ensure that we could provide options corresponding to all seven strategies described earlier.

Figure 6.2 presents an example item from the TKSJT for elementary school teachers. Figure 6.2 shows the item stem (i.e., the situation) followed by a list of potential response options (i.e., the response strategies). For illustrative purposes the corresponding strategy is listed in brackets. Note, however, that the strategy was not listed on the actual questionnaires for the respondents to see. Furthermore, the ordering of the response options was counterbalanced across items so that responses illustrating various strategies did not always occur in the same order (e.g., *avoid* was sometimes at the beginning of the response set, sometimes at the middle, and sometimes at the end). Finally, on the actual instruments, there may have been more than one response that illustrated a particular strategy (e.g., at times there were two or more responses that fit within the *comply* category).

Figure 6.3 presents an example item from the TKSJT for middle school teachers. Whereas Fig. 6.2 presented a situation fitting within the general category of dealing with subordinates, Fig. 6.3 represents a situation involving dealing with supervisors.

Mrs. Smith had just finished teaching her first-grade class. All of her students were still in the classroom and had not yet left for their break when she received a note saying, "I love you, Mrs. Smith," from one of her students, Mike. Mike is a very shy boy and this was the first time he had shown his feelings for Mrs. Smith. Usually he would hide his eyes when she talked to him, and his cheeks would turn red.

Given the situation, please indicate in the box below what would be your primary concern in dealing with the situation.

Given the situation, please rate the quality of the following statements.

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

1. [COMPLY] By tomorrow morning, Mrs. Smith should write back to Mike saying how much she appreciated his note.
2. [CONSULT] Mrs. Smith should speak to another teacher who knows Mike and get his/her advice on how to respond.
3. [CONFER] Mrs. Smith should take Mike aside and thank him privately right after she reads the note.
4. [AVOID] Mrs. Smith should do nothing; just ignore the note.
5. [DELEGATE] Mrs. Smith should ask the school psychologist to talk to Mike.
6. [LEGISLATE] Mrs. Smith should announce to the class that any letters that she gets from students will be kept private.
7. [RETALIATE] In the presence of the whole class, Mrs. Smith should tell Mike that writing love letters to the teacher is not appropriate behavior.

FIG. 6.2. Example elementary school scenario (dealing with subordinates).

Figure 6.4 presents an example item from the TKSJT inventory for high school teachers. Here, the particular situation presented in Fig. 6.4 represents the subcategory of dealing with peers.

Content-Related Validity Evidence. After creating the various TKSJTs for teachers, we sought to gather evidence related to the content validity of the seven-strategy framework in order to demonstrate that the strategies were empirically distinguishable. Content-related validity evidence is a critical element of validity, especially within the context of situational judgment testing, as the courts have ruled against the legality of using SJTs in at least one case based on the lack content-related validity evidence (*Jerome Green*

The chairman of the department at Mr. Jackson's school has asked all of the teachers in his department to put together a portfolio illustrating their accomplishments as a teacher this year. The project has a very short time line and is in addition to his usual teaching tasks, but it is required by the department. Mr. Jackson really wants to do a great job, so he spends time working on it after school and during the weekend, and is proud of the final product he turns in. When he receives his evaluation, it says only that his portfolio was "average," as opposed to "excellent" or even "good." Mr. Jackson feels that it deserves a higher mark, especially given the amount of time he put into it.

Given the situation, please indicate in the box below what would be your primary concern in dealing with the situation.

Given the situation, please rate the quality of the following statements.

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

1. [COMPLY] Mr. Jackson should try to put more effort into future projects.
2. [CONSULT] Mr. Jackson should talk to a few trusted colleagues about how angry he feels and ask them for their advice.
3. [CONFER] Mr. Jackson should talk to the department chair privately about his concerns.
4. [AVOID] Mr. Jackson should not make an issue out of it.
5. [DELEGATE] Mr. Jackson should ask a colleague to advocate for him.
6. [LEGISLATE] Mr. Jackson should decide that from now on, he will simply ignore any future remarks on his portfolio, good or bad, from the department chair.
7. [RETALIATE] Mr. Jackson should persuade his colleagues to oppose any other extra assignments from the chair in the future.

FIG. 6.3. Example middle school scenario (dealing with supervisors).

vs. Washington State Patrol, 1997, cited in McDaniel & Nguyen, 2001). Thus, the establishment of content validity of our strategic framework was an important part of the project.

Project team members worked together to refine the response options and independently rated each option according to the definitions above. They then reviewed the items, resolved areas of disagreement, and refined the response options and the scoring rubric. The next step was to ask two independent raters not previously involved in the project to evaluate each of the items according to the scoring rubric. The independent raters recruited were teachers who had practiced in the classroom within the previous 2

Mr. Thompson usually gets along well with his colleagues. One day, in a departmental meeting about the curriculum, a colleague personally attacks him because Mr. Thompson expresses a different opinion about a new program than most of his colleagues.

Given the situation, please indicate in the box below what would be your primary concern in dealing with the situation.

Given the situation, please rate the quality of the following statements.

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

- 1. [COMPLY] Mr. Thompson should reiterate his opinion about the curriculum but state that he is willing to go along with the group.
- 2. [CONSULT] After the meeting, Mr. Thompson should ask one of the other teachers how he or she thinks he should deal with his colleague's comments.
- 3. [CONFER] Mr. Thompson should talk privately with his colleague and say that he felt the personal attack was inappropriate and out of line.
- 4. [AVOID] Mr. Thompson should ignore the attack and continue his discussion with another teacher.
- 5. [DELEGATE] Mr. Thompson should ask the principal speak to the colleague about his behavior.
- 6. [LEGISLATE] Mr. Thompson should propose the establishment of formal rules of order for faculty meetings.
- 7. [RETALIATE] Mr. Thompson should state that he is not interested in responding to petty personal attacks, but will be happy to answer questions about his opinion of the program.

FIG. 6.4. Example high school scenario (dealing with peers).

years. The results of the interrater reliability estimates between each of the two independent raters and the development team's ratings are presented in Table 6.2.

The results in the first column of Table 6.2 indicate the percentage agreement by rater and by strategy across all surveys. The results indicate fairly high levels of agreement between the classification of each response option between the raters and the development team. The percentage agreement overall and strategies for Rater 1 ranged from 67% to 97%, with a median percentage agreement of 79%. The percentage agreement for Rater 2 with the development team was slightly lower, ranging from 61% to 81%, with a median of 67% agreement.

TABLE 6.2

Interrater Reliability Estimates (Percent Agreement With Development Team)

Strategy	Overall	Survey		
		Elementary	Middle	High
Comply	R1: 67%	R1: 67%	R1: 75%	R1: 58%
	R2: 61%	R2: 78%	R2: 67%	R2: 42%
Consult	R1: 97%	R1: 100%	R1: 92%	R1: 100%
	R2: 67%	R2: 56%	R2: 75%	R2: 67%
Confer	R1: 79%	R1: 56%	R1: 83%	R1: 92%
	R2: 67%	R2: 67%	R2: 58%	R2: 75%
Avoid	R1: 94%	R1: 89%	R1: 100%	R1: 92%
	R2: 81%	R2: 88%	R2: 82%	R2: 75%
Delegate	R1: 81%	R1: 63%	R1: 82%	R1: 92%
	R2: 71%	R2: 63%	R2: 55%	R2: 92%
Legislate	R1: 78%	R1: 88%	R1: 83%	R1: 67%
	R2: 78%	R2: 88%	R2: 83%	R2: 67%
Retaliate	R1: 73%	R1: 89%	R1: 83%	R1: 50%
	R2: 64%	R2: 56%	R2: 67%	R2: 67%

The percentage agreement between each of the raters and the development team was also consistent across the three instruments, with a median percentage agreement of 73% for the elementary school instrument, 82% for the middle school instrument, and 71% for the high school instrument. Overall, the results provide some preliminary evidence supporting the idea that the seven categories are empirically distinguishable from one another. Although the strategies were not always perfectly orthogonal, our goal was to make them as orthogonal as possible. Our next step is to continue to examine and refine the item response options in light of our findings. In addition, we are currently analyzing data related to the criterion-related and construct-related validity of the TKSJTs.

Implications for Data Analysis

The assumption that no single strategy is uniformly best in all situations has direct implications for how the data from this approach should be analyzed. As McDaniel and Nguyen (2001) pointed out, techniques such as exploratory factor analysis may not be particularly appropriate within such a paradigm, as the effectiveness of each response is a function of the scenario with which the response is associated. "Thus, the construct loading of two identical responses can be very different depending on

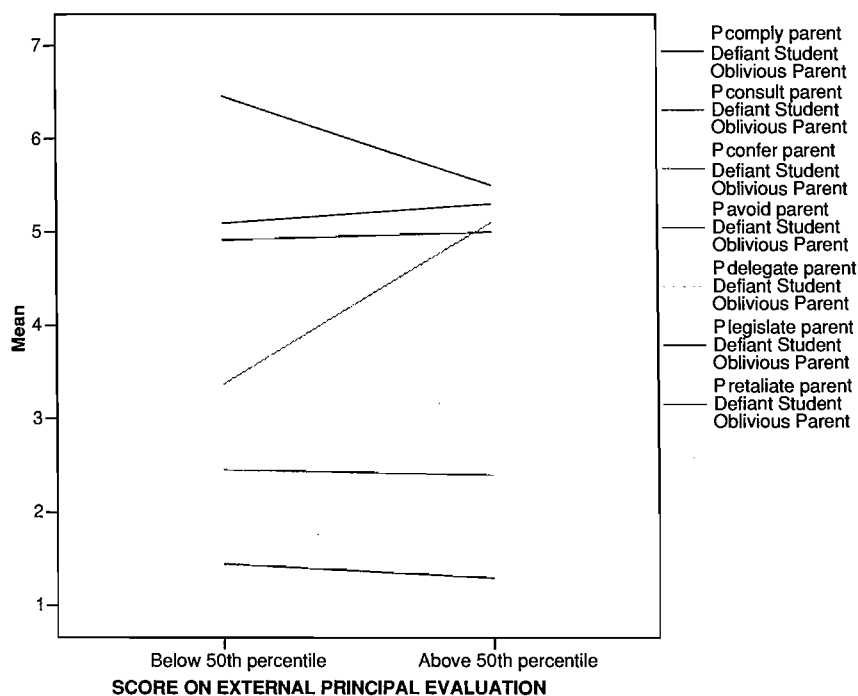


FIG. 6.5. Example results.

the scenario with which the responses are associated" (p. 106). The most appropriate technique for analyzing the data, then, may be through the use of Q-type factor analysis or cluster analysis techniques.

To date, we have used discriminant function analyses as an approach for analyzing the data. The goal of this approach has been to examine the extent to which certain sets of teachers (e.g., more effective vs. less effective; urban vs. suburban vs. rural; teachers of differing ethnic backgrounds) use systematically different strategies for dealing with others within the context of teaching. A graphical representation of this approach to analysis is presented in Fig. 6.5. In this example, the discriminant analysis results showed that more effective teachers tended to endorse the avoidance strategy as significantly more effective than did less effective teachers when the situation had to do with confronting disruptive students after the teacher had been absent for a day. Furthermore, a closer examination of the graph shows that expert teachers may have reduced the number of dimensions on which they classified the various strategies for dealing with this particular situation. Through the use of factor analyses, we can explore the

number of dimensions seen in the data by experts and novices. The data analyses for this project are still ongoing, but the results to date show some promise for theory testing.

CONCLUSIONS

In this chapter, we argued that the construct of practical intelligence, one aspect of the theory of successful intelligence, provides a useful basis for developing SJTs and for explaining their predictive power. We summarized evidence supporting the validity of the construct of practical intelligence and discussed how SJTs are useful for assessing the construct of practical intelligence via assessments of tacit knowledge. Finally, we provided a practical example of how the theory of successful intelligence can be used as a basis for the development of SJTs.

We believe that a theoretically based approach to assessing tacit knowledge through the use of SJTs holds tremendous promise both methodologically and substantively. From a methodological standpoint, the development and use of taxonomies of situations and response options like the ones proposed in this chapter (see also Motowidlo, Hooper & Jackson, this volume, for an alternative approach), may go a long way toward enhancing the comparability of SJTs across diverse cultural contexts. Furthermore, although there may be a finite number of situations and response strategies that exist across contexts, the capacity of a respondent to identify the optimal match between response strategy and situation within a given cultural context provides a measurable manifestation of his or her tacit knowledge.

From a substantive standpoint, school leaders can utilize the results of SJTs for teachers to add to the quality of mentor programs for younger or newer teachers. School administrators may potentially use the results for professional development purposes to stimulate dialogue about the different strategies outlined in this chapter and to create a well-targeted and empirically based professional development and/or training programs for teachers and administrators. In addition, the use of theoretically based SJTs may ultimately provide a more objective and defensible basis for hiring and evaluation of teachers in the United States.

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