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Behavioral Finance: Contributions of Cognitive Psychology and Neuroscience to Decision Making

James A. Howard

This paper employs a five-paradigm model to assess various contributions of cognitive psychology and neuroscience to understanding financial decision making. Whereas conventional academic finance emphasizes financial theory, the emerging field of behavioral finance encompasses investigations of cognitive and emotional factors affecting the financial decision making processes of individuals, groups, and organizations. It looks at how people really make financial decisions, not at how theory predicts they should make such decisions. Behavioral finance expands our understanding of financial decision making in terms of personal financial decisions and how markets work but also comprises a new instrument in the decision maker’s toolbox.

Using Relative Weights to Reanalyze Research on the Job Characteristics Model

Scott J. Behson

In this study, I re-analyze data from a meta-analysis of research on the job characteristics model (Hackman & Oldham, 1980), using relative weights analysis (Johnson, 2001). This analytic technique is particularly well-suited for analyses in which one wants to most accurately determine the proportion of explained variance in a dependent variable among several independent variables, while avoiding common problems with traditional regression analysis. Some of the results of this re-analysis run counter to the established predictions of the job characteristics model, indicating that this classic model of job design and intrinsic motivation could benefit from further research and rethinking.

Not All Organization-Based Self-Esteem is Created Equal: Sources and Consequences of OBSE Fragility

Joshua R. Knapp, Elaine C. Hollensbe, Janelle R Enns-Gordon

Existing theory on organization-based self-esteem assumes that high levels of OBSE motivate employees to exhibit outcomes consistent with their OBSE level. That is, high OBSE employees are expected to think and act in a way reflecting a secure sense of high self-worth, consistently exhibiting positive attitudes and behavior across contexts. In contrast, we argue that employees’ OBSE can be more or less fragile, and that higher levels of fragile OBSE will motivate employees to react defensively to circumstances threatening self-worth. Our multidimensional view is unique and important because it offers a possible explanation for inconsistent employee behavior.

Proactive and Committed: Characteristics for Retention

Whitney Botsford Morgan, Sarah Singletary Walker, Yingchun Wang, Forrest F. Aven, Jr.

The purposes of this study are to examine the relation between proactive personality and intention to leave a career and to test a boundary condition (i.e., career commitment) in which the effect does and does not hold. Participants consist of 1,527 full-time working adults from multiple organizations in the oil and gas industry. Results reveal a negative relation between proactive personality and intentions to leave a career that is moderated by career commitment. This finding suggests that career commitment may be an increasingly important construct to examine when considering various forms of turnover.
China’s Socio-economic Transformation and Sino-U.S. Joint Venture Companies in China

Osman Ozturgut

China’s socioeconomic transformation resulted in enormous opportunities as well as tremendous challenges for joint venture companies. China continues to present a highly complex environment for most foreign firms. As the number of the joint ventures increase in China, certain conflicts appear. This study explores the political, economic, and socio-cultural challenges of Sino-U.S. joint venture companies in China. It is concluded that there are many challenges and there is no immediate solution. China is willing to open up its doors but at the same time struggling to maintain its social, cultural, economic, and political norms and values.

Perspectives on Tacit Knowledge

Jeff Tschetter, Esther Tschetter

There is current debate in the literature about the meaning of “tacit knowledge.” The debate can be seen as forming three schools of thought. We used Ambrosini and Bowman’s (2001) method to operationalize tacit knowledge from a sample of senior managers. We chose this method because it does not violate the basic tenets of any of the three schools of thought and allowed us to analyze the data from all three perspectives. Finally, we compare the perspectives. We found that two of the schools of thought are entirely compatible and enrich each other. The third is not.
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The Role of Empathy in the Family Firm: A Theoretical Framework

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Empathy, which has been extensively covered in the areas of social and personality psychology, still remains untapped in the area of family businesses, which is the business of relationships after all. This paper looks into exploring the way the different levels of empathy between parents and children may affect the succession process and paves the way to investigate alternative methods that can prepare a smoother succession starting from the family environment.

THE ROLE OF EMPATHY IN THE FAMILY FIRM: A THEORETICAL FRAMEWORK

Family firms continue to have an important role in the economy, with 83.1% of businesses in America being wholly family owned, a percentage that is expected to be maintained at the same levels in the years to come (American Family Business Survey, 2007). Successful succession is imperative for the continuity of family-owned businesses and this subject has been thoroughly researched in literature, looking into factors affecting succession effectiveness (Handler, 1989), the satisfaction of the members involved with the succession process (Sharma, Chrisman and Chua, 2003), and finally the overall success of the succession process in terms of the combined succession effectiveness and family firm member satisfaction with the process (Pyromalis and Vozikis, 2009).

However, although the importance of family relationships have been pointed out (Morris, Williams, Allen and Avila, 1997), research has focused mainly on attributes that each party should address on a personal level, without proposing a way to achieve the desired results. Empathy, which has been extensively covered in the areas of social and personality psychology, still remains untapped in the area of family business, which is the business of relationships after all. This paper looks into exploring the way different levels of empathy between parents and children may affect the succession process and paves the way to investigate alternative methods that can prepare a smoother succession for the family environment. It will concentrate on the impact that offspring empathy has on the family and the family firm, as it was bred and created from the perception of parent positive or negative emotions and feelings. In order to
illustrate the way present and future relationships are dynamically affected by offspring empathy as a result of their parents’ positive or negative emotions and feelings a conceptual framework with four variations of the different perception situations within the family and the family firm is constructed and analyzed.

THEORETICAL FRAMEWORK

Although the term “family business” seems easily understood by most people, providing a clear definition proves to be quite difficult. Since the question “What is a Family Business?” was posed in the first issue of Family Business Review (Lansberg, Perrow, and Rogolsky, 1988), many definitions have been given throughout the literature. A survey conducted by William Dennis yielded five different definitions, which were considered equally good, since each one offered a different perspective (Dennis, 2002). An even more comprehensive exploration was provided by Chua, Chrisman and Sharma (1999) by identifying over 21 different definitions by reviewing over 250 different research papers and concluding that: “The family business is a business governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small number of families in a manner that is potentially sustainable across generations of the family or families”.

Regardless of the differences in defining a family business, most authors agree on the fact that there must also be a clearly established vision to keep the business in the family across generations (Chua, Chrisman and Sharma, 1999; Barach & Ganitsky, 1995; Litz, 1995). The succession process is defined as “as the actions, events, and developments that affect the transfer of managerial control from one family member to another” (Sharma, Chrisman, Pablo and Chua, 2001). However, the difficulty of this process becomes obvious upon considering the collected data on family-owned business since only 38.2% of the firms go beyond the first generation and less than 13% survive past the second generation (American Family Business Survey, 2007).

Success in the Family Firm

Success in the succession process has two interactive dimensions; satisfaction with the process, which comprises the subjective assessment of the process (Handler, 1989) and effectiveness, which is the objective determinant on the performance of the firm (Morris, Williams, Allen & Avila, 1997). The majority of research focuses on the latter, exploring factors such as the quality of successors (Kets De Vries and Miller, 1987, p. 1), the desire to pass on a business (Dascher and Jens, 1999, p. 2), baton-passing techniques (Dyck, Mauws, Starke & Mischke, 2002, p. 144) and family relationships (Morris, Williams, Allen and Avila, 1997, p. 392). Regarding the satisfaction dimension Sharma, Chrisman and Chua (2003, p. 671) identified as critical success factors the incumbent’s propensity to step aside, the successor’s willingness to take over, the agreement among family members to maintain family involvement, the acceptance of individual roles, and the overall succession planning.

As mentioned earlier, a business may be labeled as a family business to the extent that its outputs flow to a family, rather than non-family recipients. Moreover, a family may be said to be a business family to the extent that it derives its inputs from the business rather than non-business sources. In case of a family business, family members find the opportunity to set up business related discussions or even debates upon every gathering. Parents tend to discuss business issues with their children by sharing their concerns and ideas, the firm’s failures or successes, etc. Thus, by sharing feelings, information, and visibility, parents, either knowingly or unknowingly, are trying to pass on their values, morals and positive family culture to their children so inevitably, the potential successors are highly involved with business issues at an early stage. This involvement begins with simple attendance to discussions and eventually over the years evolves into interactive participation.

Throughout the literature however, there has been scarce information addressing the relationship per se between parents and children and how it affects the success of the succession process, although researchers mention that this relationship is considered to be the dominant variable in successful business
transitions (Morris, Williams, Allen and Avila, 1997, p. 398). Most of the literature deals with the static levels of relationship issues, such as the levels of trust and affability that the incumbent enjoys, the affirmative level of commitment of a potential successor’s and the level of emotional attachment to, identification with, and finally involvement in the family business organization as a definitive career path (Sharma and Irving, 2005) and finally the negative impact that a certain level of dysfunctional parent-child interactions have on the behavior and mentality of mainly the successor (Miller, Steier and Miller, 2003). Even more critical however, is the fact the literature does not address the dynamic nature of family relationships as a way as to increase empathy between the affected parties and improve the quality of the relationship in a dynamic and constructive manner.

Empathy

Empathy is a concept with many different definitions, such as “the capacity to know emotionally what another is experiencing from within the frame of reference of that other person, and the capacity to sample the feelings of another or to put one's self in another's shoes” (Berger, 1987), as well as “a sense of similarity in feelings experienced by the self and the other, without confusion between the two individuals” (Decety and Jackson, 2004). A simple but all-encompassing understanding of empathy is advanced by Goldman (1993) who labels empathy as “the ability to put oneself into the mental shoes of another person in order to understand his/her emotions and feelings.”

Although empathy has been addressed extensively in the areas of social and personality psychology, regarding family interactions and relationships, it has been sporadically mentioned in the field of family-owned enterprises. It has been addressed either in relation to how the level of empathy of the CEO of the firm affects the performance of the firm (Hauvel, et al., 2007) or as a gender specific approach, between mother-to-daughter succession (Higginson, 2010). It appears from the literature review that the literature mainly deals with the static quality levels of family relationships but there is a lack of definitive information surrounding the way these relationships evolve and are energetically affected by the different levels of positive and/or negative emotions and feelings that empathy between parents and children generates, especially in a family business setting.

How Empathy Works In a Family Firm

Through the aforementioned process of exchanging feelings, ideas and information, children should identify the positive threads that run through their family and the family firm that has led to personal and business success. Furthermore they should be allowed to identify how they can benefit from these family traits and how these family traits and values have been transformed into business success over the years.

This bidirectional empathetic communication is a prerequisite for a constructive and smooth succession process. A common characteristic of individuals who are successful as business leaders and family members is their ability to be empathetic. Empathetic people are skilled in placing themselves inside the shoes of another person and seeing the world through that person’s eyes.

Specifically, empathetic children have the ability to co-experience the difficulties or achievements that their parents face and understand their thoughts and emotions and “where they are coming from”. Moreover empathetic children have the ability to identify covert “vibes” implicitly and indirectly emitted by their parents, such as depressed feelings, regrets and secret desires that are carried without being directly acknowledged or expressed. Empathy also empowers self-awareness and vigilance for these children in order to find some way of consciously addressing business and family issues, so that certain important resolutions can be made, and insights gained.

As far as parents in a family firm are concerned, trying to empathize with their children means that they need to develop and establish a common framework of understanding within the family. Parents who are empathetic have developed a mindset that continuously works towards on how their children will be most responsive, involved and concerned. They want their children to appreciate what they are communicating, respond cooperatively and consider their perspective and their point of view. By continuously demonstrating empathy, parents encourage their children to expose their consciousness and be more responsive and approachable.
Empathy therefore, works toward building the bidirectional understanding mentioned above, and increases only if there is an alignment of experiences and ideas. Conversely, empathy weakens and the bidirectional understanding fails when family members become upset, angry, unwilling to listen, or disappointed with each other on a more or less permanent basis, in other words when the family firm communication “bridge” between generations is malfunctioning. While most individuals consider themselves and would freely declare to be empathetic, in fact, it is difficult to be empathetic when one is frustrated or angry with others, even if he or she tries hard to be empathetic. Obviously, members of a business family are more exposed to situations that may lead to frustration, misunderstandings or even fights, since they have to operate both within the family and the business domains. Under these circumstances empathy is always threatened and unfortunately in most cases if empathy is diminished or completely lost, it is very hard to be reconstructed and regained.

It needs to be emphasized that within a family firm, because of their presumed maturity, parents are the ones that need to take the initiative in establishing empathy. Empathic parents should make the first steps by being respectful and by applying as many non-punitive ways as possible in teaching children life’s principles. As far the children are concerned, it is believed that children's behavior (and misbehavior) is almost always an attempt to meet a need. Even if parents frame the interactions with their children to be based on mutual respect and empathy, some children tend to be naturally more empathetic than others, and some even within the same family, seem to totally lack the ability to acquire this virtue. As the perennial “nurture vs. nature” controversy dictates, here too, there is a real debate of whether the inability to develop empathetic relationships by children should be blamed on genetic versus environmental causes. However, it is clear that children can become more empathetic with help from their parents in their lives, since parents are the first and foremost teachers. Nevertheless, the final outcome is highly dependent on various factors. Nevertheless, according to recent research by University of Chicago’s Jean Decety, the programming for empathy is something that is “hard-wired” into the brains of normal children, and it is not entirely the product of parental guidance or other type of nurturing. Thus, whether children are going to be empathetic or not is not absolutely and positively related with the presence of empathetic parents (Dacety, 2004).

**Empathy and Succession in a Family Firm**

In an attempt to conceptualize how empathy works towards a smooth succession process in a family firm, the initial concern should naturally be whether children are actually willing and eager to be involved in the family business as potential successors. Since for empathy to exist requires a priori a well-established mutual understanding, empathy should be conceptualized as a continuous exchange of stimuli, ideas, information and feelings. Furthermore, given the fact that parents are the initial originators of these streams of continuous exchanges that build relationships based on empathy, we believe that a basic and fundamental assumption should be that parents are really trying to establish and settle on an effective interaction with their children that will serve the family firm well later on when the succession issue comes into the play.

However, even if parents try hard to build a relationship based on empathy and mutual understanding as far as succession in the family business is concerned, the outcome depends on the parental signals regarding the family firm’s well-being and prospects for future prosperity, as well as the parental capacity of positive emotional intelligence. Thus, the communicated exchanges of stimuli, ideas, information and feelings may be:

- **Positive, Optimistic, and Constructive** or
- **Negative, Pessimistic, and Destructive**

On the other hand, children could be unresponsive, indifferent and unreceptive despite the fact that parents are working hard towards establishing a strong empathetic relationship. As mentioned earlier, having empathetic parents does not guarantee that children will also become empathic. On that basis, children may respond by a positive or negative way:
Reinforcing a bidirectional empathy, or
Weakening a bidirectional empathy, remaining apathetic

Conceptual Framework

This paper concentrates on the impact that the communicated exchanges of stimuli, ideas, information and feelings have on empathy as far as first the family, and subsequently the family firm is concerned, caused and created from the perception of parental signals of positive or negative emotions and feelings. In order to illustrate the way present and future relationships are dynamically affected by offspring empathy as a result of their parents’ positive or negative emotions and feelings, we introduce in Exhibit 1 below, a conceptual framework with four variations of the different perception situations within the family and the family firm. These four variations of the empathy possibilities within the family can be conceptualized based on whether positive/optimistic/constructive or negative/pessimistic/destructive signals of emotions and feelings are “transmitted” from the parents in an attempt to reinforce or conversely weaken a bidirectional empathy and whether the children’s perception and understanding is active (high empathy) reinforcing thus the bidirectional empathy or inactive (low empathy) weakening the bidirectional empathy.

EXHIBIT 1

These four different empathy situations within the family have the consequences of four different circumstances within the family firm, in terms of what are the conditions under which offspring will be willing and eager to be involved in the family business as potential successors, and are depicted in Exhibit 2 below:
This situation describes a family in which parents try to build a relationship based on mutual understanding and empathy by being optimistic and by communicating positive emotions and feelings. They tend to focus on the successes and the benefits from the business, and they constantly pinpoint the good and constructive aspects of being part of the family firm always remaining confident for the business and the family.

However, children may not share the same visions and thoughts or simply the communication “bridging” of the positive/optimistic/constructive signals is not working. Under these circumstances, children may be reluctant to participate in the family business and in a subsequent succession process because of an obvious lack of empathetic connectivity with their parents. They may wish to avoid involvement in the family business in order to avoid debates, fights, hurt feelings and everything that they believe could be negatively carried out in the future, by following their own career path outside the family firm, therefore the survival of the firm heavily depends on the ability and the willingness of the parents to carry on being in charge and taking care of the family business.

There is a distinct possibility however, that, if the offspring experience with the “outside” world does not turn out as positive and satisfactory as they had assumed and wished for, and if the family circumstances are still favorable while the business is still prosperous, they may try to reconnect by finally developing empathetic relationships with both the family and the business. Obviously the long-term survival of the family business in this quadrant is dependent on the developing support mechanisms aimed at mending family relationships and moving toward Quadrant 2. The supporting mechanisms are actually the continuously strong empathetic behavior of the parents and their constantly positive and optimistic mindset.

**1st Quadrant**

EXHIBIT 2

**EMPATHY SUCCESSION CONSEQUENCES IN A FAMILY FIRM**

| PARENT Positive Emotions and Feelings | 1 | OPTIMISTIC PARENTS
| PESSIMISTIC CHILDREN |
|--------------------------------------|---|------------------------------------------------------------------|
| Initial offspring reluctance for success |
| Survival of the family firm depends on parents |
| Possible success later, IF offspring develop empathy |

| PARENT Negative Emotions and Feelings | 2 | OPTIMISTIC PARENTS
| PESSIMISTIC CHILDREN |
|--------------------------------------|---|------------------------------------------------------------------|
| Initial parental AND offspring enthusiastic willingness for success |
| Survival of the family firm depends on BOTH parents and offspring |
| Most likely, an effective and satisfactory succession for all parties involved is accomplished |

| 3 | PESSIMISTIC PARENTS
| PESSIMISTIC CHILDREN |
|--------------------------------------|---|------------------------------------------------------------------|
| Absolute parental AND offspring reluctance for success |
| Survival of the family firm depends on success by an outsider |
| Possible turnaround IF unexpected and critical family events occur |

| 4 | PESSIMISTIC PARENTS
| OPTIMISTIC CHILDREN |
|--------------------------------------|---|------------------------------------------------------------------|
| Initial parental reluctance for success |
| Survival of the firm depends on the offspring |
| Possible success later IF parents develop empathy |

LOW OFFSPRING

EMPATHY established within

HIGH OFFSPRING

EMPATHY established within
2nd Quadrant

This scenario illustrates a family in which parents try to build a relationship based on empathy with positive/optimistic/constructive signals and they finally achieve it. The children’s mindset is fully attuned with their parents and the bidirectional communication is being reinforced and properly maintained. Moreover, this relationship is constantly enriched with optimism and encouraging feelings from parents creating enthusiasm and strong desire by the offspring to participate in the family business and in a subsequent succession process. Under these circumstances empathy increases through an alignment of experiences and ideas from both sides, and the future of the family business relies on parental effective coaching AND the offspring’s competence and hard work. Consequently, a successful succession, both effective and satisfactory for all concerned parties is the most likely outcome for this empathy scenario, and staying in this quadrant over a sustained period of time would be the most desirable situation for the family business, and of course for the family itself.

3rd Quadrant

This combination describes a family in which parents may consciously or may not be trying at all to build a relationship based on mutual understanding, since the signals they send to their offspring tend to be negative/pessimistic/destructive signals of their true emotions and feelings by continuously complaining about the family firm’s difficulties and by focusing on the failures, risks and the dangers of being in business rather than the benefits. This manifestation of insecurity secure and lack confidence about the business has a serious impact on relationships within the family. Regardless of whether the parents are expressing rational concerns or not, a low empathy or a complete apathy will most likely be established among the offspring and within the family, and the parental signals will be ignored as “none of my business”. As a result apathetic children will stay unresponsive and indifferent to any aspect of the family and the family business and both they and their parents will be reluctant to involve each other in any succession process. This state of affairs is progressively overwhelmed by the negative “energy” that is produced by both parties and in the long run, family relationships inevitably will be strained by disconnection, discontent and conflict. Under these circumstances the long-term survival of the family and the business in this situation is highly dependent on the parents finding a suitable successor outside the family. Failure and disconnection on the family dimension is likely to create durable incongruity that may take several years to fade, if ever. However, through self-reassessment and self-awareness, especially if unexpected and critical family events occur, such as serious illness, death, suicide, divorces, etc., the negative empathy state of affairs may be turned around and the beneficial aspects of the family and the family business may finally be acknowledged and appreciated and positive/optimistic/constructive signals may begin to finally flow creating bidirectional empathy with constructive consequences for the family, the family business, and intra-family succession possibilities. Although the most desirable position for these families would be Quadrant 2, they may have to follow a path through Quadrant 1 or 4 to finally reach that stable state.

4th Quadrant

This situation also describes a family in which parents communicate uncertainty and transmit negative/pessimistic/destructive signals of their true emotions and feelings. However, in this case children are endowed with high levels of "hard-wired" empathy without allowing themselves to be discouraged or demoralized from the incoming negative signals. These empathetic children in this state of affairs, sense the dissonance within their parents about the family, the family business, and business related situations, and the seemingly obvious reluctance on the part of the parents to allow them to participate in the family business as workers or potential successors, even though the empathetic child is definitely willing to participate actively in the family business. In this dimension families may or may not enjoy strong relationships among family members, because parents are continuously complaining and show utter lack of confidence about the future as far as the family and/or the family firm is concerned. However, since the offspring are endowed with high levels of emotional capacity and high levels of empathy the parental negative/pessimistic/destructive signals are discounted or dismissed and this is what holds the family and
the family business together, since the future of the family and the family firm rests with the offspring continuing to endure this barrage of negativity without losing their empathetic strength, and consequently, family relationships can support these families to endure poor business performance and uncertainty at least for a short period of time. There is a distinct possibility however for resolution of this stalemate, if the family and the family business circumstances are still favorable, and if the parents try to at long last reconnect with the offspring by finally developing empathetic relationships with both the family and the business through positive/optimistic/constructive signals. Then, the offspring willingness and eagerness to engage themselves in the family firm’s succession process will be matched by similar parental willingness to do the same, and the long-term survival of the family business in this quadrant is dependent on the developing support mechanisms from both sides aimed at mending family and business relationships and moving toward Quadrant 2.

Concluding Remarks

The obvious argument from our conceptual framework is that certainly, we should accept that empathy is a fundamental and essential virtue for successful relationships within a family and even more so for a family firm, since it is a prerequisite and a key factor for a smooth succession. It seems that the stronger the empathy is, the stronger the related experience with the family and the family business, and if empathy is established as solid and bidirectional, then both parents and offspring will be able to exchange information, insights, visibility, concerns and ideas and share both tangible and intangible benefits. However, this sharing and alignment should not be misinterpreted, and we must be very clear about what empathy is and is not. We should not confuse that being empathic is giving in or not being assertive. Empathy has nothing to do with obedience and passive compliance. One can be empathic and yet disagree with another person. One can be empathic and validate what another person is saying, but have an entirely different view of the situation. Under positive empathetic relationships between parents and offspring, a significant step towards a smooth and successful succession, both in terms of effectiveness and satisfaction for all parties involved, is warranted and most likely accomplished.

REFERENCES


Affirmative action (AA) remains at the forefront of both public and scholarly discourse. Yet there is little empirical investigation of individuals’ perceptions of how AA typically operates, particularly with respect to the centrality of merit in the implementation process. I suggest these perceptions are critical to the extent that they influence psychological reactions to AA. Results from two survey studies confirmed that the perceived centrality of merit in typical AA implementations predicted both endorsement of the policy and the view of beneficiaries’ competence, above and beyond demographic factors. Theoretical and applied implications are discussed.

INTRODUCTION

Since its inception in the 1960s, affirmative action (AA) has been the topic of intense debate in political, social, and academic forums. Researchers have generated volumes of work on this topic, much of which has examined attitudes toward AA as well as the psychological consequences of AA for both beneficiaries and non-beneficiaries. Despite this enormous body of research, there is surprisingly little work on the public's perceptions of exactly what AA entails (Crosby, 2004; Harrison, Kravitz, Mayer, Leslie, & Lev-Arey, 2006). Yet understanding individuals’ beliefs about how AA is implemented is critical to deciphering and interpreting many of the existing findings in the AA literature. That is, perceptions of how AA works may lend insight into people's endorsement (or non-endorsement) of the program. Moreover, many of the negative psychological consequences – namely, the well-documented finding that beneficiaries of AA are subject to a stigma of incompetence - may not be the result of the program itself, but rather perceptions of how AA programs are typically implemented.

The purpose of this study is to empirically and systematically address some of these issues. Specifically, this work is aimed at investigating individuals’ beliefs of how AA is typically implemented, particularly with respect to the centrality of merit, and to determine whether these perceptions predict 1) general attitudes towards the program, and 2) the extent to which beneficiaries of AA are stigmatized as incompetent.

What is Affirmative Action?

AA was originally conceived as a policy designed to "overcome the discriminating effect of past or present practices, policies, or other barriers to equal employment opportunity" (Equal Employment Opportunity Commission, 1979). In 1964, President Johnson issued an executive order requiring organizations with more than 50 employees that wished to enter contracts with federal agencies to take "affirmative action" to ensure that all current and future potential employees were employed in fair
numbers and treated fairly on the job. Regulations set forth by the Secretary of Labor required organizations to develop internal monitoring to identify problem areas and, should underutilization be identified, required organizations to develop goals and timetables for remediya such problems. Examples of such affirmative action might include targeted recruitment, career advancement training, and validation of selection instruments (Green, 1989).

Despite its origin as a specific policy, AA has become a blanket term used to describe any number of active policies, mandated or voluntary, adopted by organizations in an attempt to remedy the effects of workplace discrimination (Clayton & Crosby, 1992; Glazer, 1988). The primary dimension that differentiates these various implementations is the centrality of merit in the decision making process. This dimension is often captured using the term “strength”, the harder an affirmative action plan (AAP), the more demographic information is weighted in decision making over merit (Kravitz, 2008). As examined in the literature, AAPs typically fall into one of four categories along the continuum (Kravitz, 2005; Harrison et. al, 2006). In both equal opportunity and opportunity enhancement implementations of AA, merit is the only basis for selection decisions as no weight is placed on demographic status. In tiebreak implementations of AA, merit is still the most central component as demographic status is only taken into account if qualifications are equivalent across candidates. Lastly, in preferential treatment implementations merit is less central in the process as preference may be given to less qualified target group members over more qualified individuals.

Despite the constant references to particularly hard forms of AAPs (preferential treatment) both in the academic literature and the national discourse about AA, a review of relevant legislation and case law verifies that harder forms of AA are in fact illegal. Federal regulations specifically prohibit preferential hiring and promotions and the selection of unqualified candidates is expressly forbidden (U.S. Department of Labor, 2011). Even tiebreak procedures are only considered legal in instances where prior discrimination or serious underrepresentation of the target group has been demonstrated (Pyburn, Ployhart, & Kravitz, 2008). Nonetheless, there is reason to believe that the public’s perception of how AA operates with respect to the centrality of merit is misaligned with legal implementations of the program (Aberson, 2007; Golden, Hinkle, & Crosby, 2001). These perceptions, even if flawed, may be key to understanding the public’s reaction to AA. This is because substantial evidence indicates that, when explicitly provided, information regarding the centrality of merit in an AAP significantly impacts both attitudes towards that AAP and how beneficiaries of that AAP are perceived in terms of competence.

**Attitudes Toward Affirmative Action**

There is a vast literature dedicated to examining predictors of attitudes toward AA. These predictors can be conceptualized as falling into two broad categories: individual difference variables and structural variables (Kravitz, 1995). While researchers have unequivocally documented the predictive value of a number of individual difference variables - from demographic variables (e.g. race) to psychological variables (e.g. prejudice) (for full review see Kravitz et al., 1997, Harrison et al., 2006), there is evidence suggesting that structural variables may be significantly more important in understanding individuals’ endorsement of AA (Kravitz, 1995). Structural variables refer to implementation details about a particular type of AA program, particularly the centrality of merit in the decision processes vis a vis the weighting of demographic status.

Researchers who have studied the impact of structural variables on attitudes toward AA have overwhelmingly done so by providing explicit, detailed descriptions of an AAP, or a particular component of an AAP, and then asking participants to indicate the extent to which they endorse that plan (Kravitz, 2009). In one such study, Kravitz (1995) found that 77% of the variance in attitudes toward different implementations of AA was accounted for by the structure of the AA plan, while individual difference predictors explained only an additional 4% of the variance. Overwhelmingly, findings have documented a positive relationship between the centrality of merit in an explicitly defined AAP and the endorsement of that AAP: the more weight given to merit in a particular implementation, the more favorably it is evaluated (e.g. Bobocel, Son Hing, Davey, Stanley, & Zanna, 1998; Kravitz, 1995; Kravitz & Platania, 1993; Nacoste, 1985).
Yet little research has examined whether individuals’ underlying assumptions regarding the structural features of typical AAPs maintain their predictive power in the absence of specific details about the policy. Nacoste (1994) has argued that individuals are likely to develop policy schemas – a set of beliefs about the “typical” procedures employed in AA. Thus, when details are lacking about how an AAP is implemented, do individuals presume a particular implementation strategy, particularly with respect to the weighting of merit? And, do these structural assumptions in turn predict endorsement? I hypothesized that in the absence of information regarding the structural details of an AAP, assumptions regarding the centrality of merit in typical AAPs, would predict general endorsement of AA. More specifically:

_Hypothesis 1: The more likely participants perceive merit to be central in typical AA implementations, the more likely participants will endorse AA as a policy._

The Stigma of Incompetence

Another significant body of literature has been dedicated to examining the psychological consequences of AA for both beneficiaries and non-beneficiaries. One facet of this research has examined how individuals who are believed to have benefited from AA are viewed by others. This body of work generally supports the notion that there is a stigma of incompetence associated with those said (Heilman, Block, & Lucas, 1992; Heilman, Block, & Stathatos, 1997; Resendez, 2002), or presumed to be (Heilman & Blader, 2001), beneficiaries of AA. Importantly, evidence suggests that beneficiaries of AA are penalized _beyond_ what would be predicted by stereotyping process more generally (Heilman, Block, & Lucas, 1992).

Overwhelmingly, empirical exploration of this phenomenon has been conducted employing experimental paradigms in the laboratory. The relevance of this work has been challenged by some (e.g. Evans, 2003) due to the strong manipulation of AA as preferential treatment in many of these studies. The argument is that strong preferential treatment with little regard for merit is illegal and unlikely to occur in real selection procedures. As such, the stigma of incompetence associated with AA is largely an artifact of the laboratory. Yet whether an operationalization of AA is legal or not is arguably irrelevant in determining whether beneficiaries actually suffer from the stigma of incompetence in the real world. Rather, I suggest that the _perception_ of how AA is typically implemented in the mind of evaluators may be a critical determinant driving these negative psychological consequences.

The importance of understanding individuals’ beliefs of how AA typically operates with respect to the stigmatization of beneficiaries is underscored by findings suggesting that the known structure of an AAP is a critical determinant of the degree to which beneficiaries are stigmatized. That is, different AAPs (with respect to their centrality of merit) elicit differential levels of derogation of beneficiaries’ competence (Evans, 2003; Heilman, Battle, Keller, & Lee, 1998). For example, Heilman and colleagues (Heilman et al., 1998, study 2) presented participants with information regarding the hire of a white woman who had ostensibly been hired for a job under 1 of 4 selection policies, which varied along the centrality of merit dimension, ranging from solely merit-based to strong preferential treatment. The less merit was seen as central to the decision-making policy, the greater the derogation of her competence. Furthermore, it is noteworthy that in a fifth control condition in which there was no information about the centrality of merit in the decision process – rather, it was only stated that there was an AA program- participants’ responses were no different than when they had received information about a policy in which merit criteria had been totally disregarded. This finding is not only consistent with the notion that people may use their own definitions to disambiguate undefined AAPs, but also consistent with the idea that individuals may assume that AA is little more than preferential selection without regard to merit.

Given that AA can elicit the stigmatization of anyone presumed to be a beneficiary of AA - either because AA is said to be in place or because situational cues elicit the inference (Heilman & Blader, 2001) - it seems particularly important to investigate whether individuals’ structural assumptions may account for the stigmatization process. I expected that in the absence of specific information about how a plan operates, individuals’ perceptions of the centrality of merit in typical AAPs would predict the degree to which they stigmatize beneficiaries of AA as incompetent.
Hypothesis 2: The less likely participants perceive merit to be central in typical AA implementations, the more likely participants will view beneficiaries of AA as incompetent.

STUDY 1

Method

Participants
Nine-hundred and one participants completed a questionnaire (610 women and 274 men). Participants were undergraduate students who participated as part of an introductory psychology requirement. Participants ranged in age from 16 to 35 (M = 18.99, SD = 1.60); 58.8% were White, 18.4% were Asian-American, 11.2% were Hispanic, 4.8% were African-American, and 6.8% reported Other.

Procedure
Participants were instructed to think about how AA programs typically operate and rate the extent to which they agreed with a series of statements. Participants responded to a series of items intended to tap into different structural aspects of the program, particularly with respect to the centrality of merit (e.g. "In AA programs, merit is the most important criterion for selection decisions"); endorsement of the policy (e.g. "AA is a good policy"); and, perceived competence of beneficiaries (e.g. “People hired under AA programs will perform just as well as those who are not”). For all items, the response scale ranged from 1 (strongly disagree) to 5 (strongly agree). The items were drawn from past work on this topic (e.g., Kravitz & Platania, 1993) as well as pilot data in which respondents were asked to describe a typical AA program (free response).

Measures

Perceived centrality of merit. The degree to which participants perceived merit as being central to typical AAs was assessed based on a composite measure of four items: “In AA programs, merit is an important criterion for selection decisions”; “In AA programs, merit is the most important criterion for selection decisions”; “In AA programs, qualifications are important criterion for selection decisions”; “In AA programs, qualifications are the most important criterion for selection decisions”. The coefficient alpha for the merit scale was .82.

Endorsement of affirmative action. The endorsement of AA measure was based on two items: “AA is a good policy” and “I do not support AA programs” (reverse coded). The coefficient alpha for the endorsement scale was .93.

Perceived competence of beneficiaries. The perceived competence of AA beneficiaries was assessed using the following six items: “People hired under AA programs are equally qualified as people who are not hired under AA programs”; “Under AA programs, less qualified applicants are selected over more qualified applicants” (reverse coded); “Women and minorities hired under AA programs are just as qualified as women and minorities hired without an AA program”; “People hired under AA policies will perform just as well as those who are not”; “AA programs ensure qualified people get hired for the job”; and, “AA programs ensure the most qualified people get hired for the job.” The coefficient alpha for the perceived competence of beneficiaries scale was .85.

Results

Perceived Centrality of Merit

The first task was to descriptively explore participants’ perceptions of the centrality of merit as being typical of AA plans. To the extent that perceptions of structure drive important psychological consequences, an understanding of the prevalence of these perceptions is an indicator of the importance of the effect. The mean for the perceived centrality of merit scale was 3.18 (SD = 0.77). To get a sense of the distribution, I looked at the percentage of participants that agreed with key statements. Results indicated that participants had varied opinions about how AA programs actually operate. For example, only 21.0%
agreed (15.4% agreed, 5.6% strongly agreed) that merit is the most important criteria for selection decisions, whereas 42.7% disagreed (33.6% disagreed, 9.1% strongly disagreed). Similarly, only 27.2% agreed that qualifications are the most important criteria for selection decisions (20.4% agreed, 6.8% strongly agreed), whereas 37.6% disagreed (30.3% disagreed, 7.3% strongly disagreed).

**Endorsement of Affirmative Action**

To address the question of whether the perceived centrality of merit in typical AAPs impacts the extent to which individuals endorse the policy, I conducted a hierarchical linear regression in which I regressed endorsement of AA on age, sex, and race in the first step, and perceived centrality of merit, in the second step. Table 1 summarizes the results of this analysis. The individual difference variables entered in the first step accounted for 9% of variance in the endorsement of AA, \( R^2 = .09, F(6, 823) = 13.60, p < .001 \). However, controlling for age, sex, and race, perceived centrality of merit accounted for an additional 18% of the variance \( \Delta R^2 = .18, F(1, 822) = 204.50, p < .001 \). Congruent with the first hypothesis, the more likely merit was perceived to be central in typical AA programs, the more likely participants were to endorse AA, \( \beta_{\text{merit}} = .43, p < .001 \).

**TABLE 1**

Hierarchical Regression Analyses: Predictors of Endorsement of Affirmative Action and Perceived Competence of Beneficiaries (N= 901)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Endorsement of AA</th>
<th>Perceived competence of beneficiaries</th>
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<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
</tr>
<tr>
<td></td>
<td>( \Delta R^2 )</td>
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<tr>
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<td>.18**</td>
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<td>.17**</td>
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<td>.02</td>
</tr>
<tr>
<td>Centrality of merit</td>
<td>.04</td>
<td>.03</td>
</tr>
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</table>

*\( p < .05; **p < .001 \)

**Perceived Competence of Beneficiaries**

To address whether the perceived centrality of merit in typical AAPs impacts the extent to which beneficiaries of AA are perceived competent, I conducted another hierarchical linear regression in which age, sex, and race were entered in the first step and perceived centrality of merit in the second step. The results of this analysis are reported in Table 1. Once again, the first step of the model accounted for a significant amount of variance, \( R^2 = .11, F(6, 813) = 16.08, p < .001 \). Yet, controlling for age, sex, and race, perceived centrality of merit accounted for an additional 29% of variance \( \Delta R^2 = .29, F(1, 812) = 388.17, p < .001 \). As hypothesized, the more likely merit was perceived to be central in typical AA programs, the more likely participants were to refrain from stigmatizing beneficiaries of AA as incompetent, \( \beta_{\text{merit}} = .55, p < .001 \).

**Discussion**

These data support the notion that in absence of specific details about a particular AAP, individuals have underlying assumptions about the centrality of merit in “typical” AA implementations. Furthermore, these assumptions explain some of the variance in important psychological consequences associated with
the policy. Specifically, the more merit was perceived to be central in typical AAPs, the more likely participants were to endorse AA and the more likely participants were to view beneficiaries of AA as competent. It is also noteworthy that perceived centrality of merit accounted for at least double the amount of variance in both measures, above and beyond the demographic variables. This finding is consistent with other work that has documented the importance of explicitly described structural details of AAPs, beyond demographic variables.

While the results of the first study lent support for the hypotheses, the data was collected from a student sample. Arguably there are a number of potentially relevant differences between a student and a non-student sample, including that AA in educational systems is different from AA in employment contexts. The student sample is also arguably less likely to have experience working in organizations and thus less experience with AA in employment contexts. These factors may contribute to a differential understanding of how AA programs are typically implemented. Therefore, I administered the survey to participants recruited in the field to test whether the results would generalize to a non-student sample.

STUDY 2

Method

Participants

One hundred and seven participants completed a questionnaire (47 women and 57 men, 3 did not report their sex). Participants were recruited around New York City in parks, train stations, and coffee shops and asked if they would be willing to complete a survey about AA. Participants ranged in age from 22 to 64 (M = 37.1, SD = 11.67); 74.8% were White, 4.7% were Asian-American, 3.7% were Hispanic, 8.4% were African-American, and 4.7% reported Other. Participants were employed for an average of 9.46 years (SD = 10.56) and worked an average of 42.83 hours per week (SD = 13.46). Participants reported a wide range of professions including consultants, accountants, and administrative assistants.

Procedure

Individuals were approached and asked if they would be willing to fill out a questionnaire on AA. If so, individuals were further screened to ensure that they had worked at least part time in the past six months and were over the age of 18. Eligible participants were told that we were interested in getting a better understanding of how people think AA programs typically operate. Participants were then provided with the questionnaire and upon completion were thanked for their time and offered a pen as a token of appreciation.

Measures

The same four measures were employed in the field replication study. The coefficient alphas were .80, .88, and .79 for perceived centrality of merit, perceived competence of beneficiaries, and endorsement of AA, respectively.

Results

Perceived Centrality of Merit

The mean for the perceived centrality of merit scale was 3.28 (SD = 0.91). In this sample, 38.7% agreed (29.9% agreed; 8.4% strongly agreed) that merit is the most important criteria for selection decisions in AA programs as compared to 39.6% who disagreed (29.2% disagreed; 10.4% strongly disagreed). While 42.8% agreed (32.7% agreed; 7.5% strongly agreed) that qualifications are the most important criteria in selection decisions, 40.9% disagreed (29.9% disagreed; 8.4% strongly disagreed).

Endorsement of Affirmative Action

To address the question of whether the perceived centrality of merit in typical AAPs impacts the extent to which individuals endorse the policy, I employed the same analytical strategy as in study 1. The results of the hierarchical linear regression are summarized in Table 2. The first step of the model that
included the demographic variables accounted for 13% of the variance in endorsement of AA, $R^2 = .13$, $F(6, 91) = 2.26$, $p < .05$. The addition of perceived centrality of merit accounted for an additional 18% of the variance, $\Delta R^2 = .18$, $F(1, 90) = 11.58$, $p < .001$. As predicted, the more likely participants perceived merit to be central in typical AAPs, the more likely they were to endorse AA, $\beta_{\text{merit}} = .46$, $p < .001$.

### Table 2

**Hierarchical Regression Analyses: Predictors of Endorsement of Affirmative Action and Perceived Competence of Beneficiaries**  
(N= 107)

<table>
<thead>
<tr>
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<th>Perceived competence of beneficiaries</th>
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<td>$\Delta R^2$ $\beta$</td>
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<tr>
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<td>Sex (female)</td>
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<tr>
<td>Other race</td>
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<tr>
<td>Centrality of</td>
<td>.46**</td>
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<tr>
<td>merit</td>
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*p < .05; **p < .001

**Perceived Competence of Beneficiaries**

Once again, I employed hierarchical linear regression (see Table 2) to address whether perceived centrality of merit impacts the extent to which beneficiaries of AA are perceived as competent. Age, race and gender accounted for 24% of the variance, $R^2 = .24$, $F(6, 92) = 4.96$, $p < .001$. Controlling for these demographic variables, the centrality of merit accounted for an additional 21% of the variance, $\Delta R^2 = .21$, $F(1, 91) = 35.92$, $p < .001$. As hypothesized, the more likely merit was perceived to be central, the more likely participants were to refrain from viewing beneficiaries of AA as incompetent, $\beta_{\text{merit}} = .51$, $p < .001$.

**Discussion**

The results employing a non-student sample replicated the results from the first study and provide additional evidence in support of the hypotheses. Participants recruited in the field also appeared to have varying assumptions as to how AA programs are typically implemented. Moreover, assumptions regarding the centrality of merit were powerful predictors of the psychological attitudes towards AA, above and beyond demographic variables. Specifically, the more likely merit was perceived as central, the more likely participants were to endorse the plan and the less likely they were to view beneficiaries as incompetent.

**General Discussion**

These results suggest that individuals have implicit assumptions about the centrality of merit in typical AA implementations. It is notable that across both samples, approximately 40% of participants disagreed with statements that merit and qualifications are the most important factors in typical AA implementations. This suggests that many individuals are misguided about how AA is implemented and conceptualize typical AAPs as particularly hard implementations of the program (albeit likely illegal). Yet, these underlying assumptions are critical to the extent that they enlighten important psychological
consequences including attitudes towards (endorsement of) the policy and those who are presumed beneficiaries of the policy.

With respect to endorsement of AA as a general policy, in the absence of specific information about implementation details, the assumptions about the structure of the program appear to operate as definitively as explicit definitions. The more individuals perceive merit as being a central component in how AA is implemented, the more likely they are to support it. These results, when coupled with the seeming prevalence of the misconception of what AA entails, give cause for pause. These findings suggest that some of the opposition to AA may be due to a misconstrual of exactly what the program entails.

Additionally, perceptions regarding the centrality of merit have important consequences for how beneficiaries of AA are viewed. When merit is thought to be central, beneficiaries are less likely to be stigmatized as incompetent. However given the prevalence of participants that do not think merit is central in typical AAPs, the stigma of incompetence is very much a potential reality for AA beneficiaries in the workplace. It appears that the operationalization of AA in lab studies as “preferential treatment” is representative of what some individuals consider prototypical of AA. As long as individuals doubt that merit is central to AA (irrespective of whether it represents a legal implementation or not), they are also likely to doubt the competence of those thought to be beneficiaries of the program.

These findings hold some promise for how both organizations and public policy advocates might mitigate some the opposition to AA and the negative consequences potential beneficiaries may be faced with. They suggest that some of these effects may be countered by providing individuals with explicit, objective, and credible information about how AA is actually implemented. Ensuring individuals understand the central role merit plays in the implementation process would presumably leave less room for individual perceptions of the program to color subsequent psychological consequences. Moreover, exposure to the centrality of merit in the operation of individual programs (within an organization for example) may over time culminate in shifting the general public’s perception of the policy as a whole.

Determining how individuals come to conceptualize typical AAPs in the absence of explicit information about an individual program is an important question in need of further empirical testing. An informational hypothesis would suggest that over time, individuals are exposed to information – media outlets, politicians, and public discourse more generally - about the centrality of merit in typical AAPs. This differential information may in turn predict attitudes towards AA. Yet a motivated cognition hypothesis is also plausible and would suggest that differential attitudes determine the “definitions” individuals choose to adopt. For example, there is some evidence that non-beneficiaries of AA (White men) may be more likely to conceptualize AA as quota system – a system often equated with a disregard for merit in the decision making process - as a mechanism to protect self esteem (Unzueta, Lowery, & Knowles, 2008). However, even if motivational forces are at work in how individuals construe their definitions of AA, the general ambiguity surrounding typical AAPs is likely to fuel these processes and leave their accuracy unchecked. To the extent that organizations and public policy advocates can repeatedly provide explicit evidence regarding the centrality of merit in typical AAPs, this would presumably quell the ability of individuals to define the policy on their own.

In sum, this study provides evidence that in the absence of explicit information regarding the centrality of merit in an AAP, individuals have their own assumptions regarding this important structural variable. These assumptions may be central to understanding resistance to the program. Moreover, these findings suggest that the stigma of incompetence beneficiaries may face is likely a reality in the workplace. Irrespective of the determinants of these structural assumptions, ensuring the provision of explicit information that clearly articulates the centrality of merit in AA policies, is likely to have promising impact. The extent to which perceptions of the program can be aligned with accurate information about how AA is typically implemented may bring us one step closer to resolving this longstanding social debate.
REFERENCES


Role Stress Measure, Methods of Coping with Stress, and Job Performance: An Exploratory Study

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Workplace stress is a growing concern for human resource managers. Although considerable scholarly and practical attention has been devoted to stress management over the years, the time has come for new perspectives and research. An extensive review serves as a foundation for managers and researchers to better understand the unique challenges of managing hospitality organizations. Drawing from the emerging field of positive organizational behavior, this study offers research findings with implications for combating occupational stress, role stress in specific. This paper examines the effects of role stress and methods of coping with stress on job performance among Egyptian supervisors working in 5 and 4 stars hotels in Egypt. Research data is collected through a questionnaire distributed to 780 supervisors. Data from a large sample of supervisors across the hospitality industry in Egypt suggest that the type of role stress and the methods of coping with stress may be a key to better understanding the variation in perceived job performance. The article concludes with practical strategies aimed at leveraging and developing supervisors' cognitive and emotional/psychological capital to help them better cope with role stress that consequently lead to outstanding job performance.

INTRODUCTION

There is an increasing concern about job stress in developing countries. Job stress has been related to organization's problems such as absenteeism, turnover, poor job performance, accidents and errors (Williams et al., 2001). Furthermore, globalization caused an increasing employment of expatriates in foreign countries, and interaction among diverse cultures. Moreover, global communication networks including satellite, Internet and wireless technology, cell phones, video conferencing bring new work styles.

Stress is an integral part of all aspects of an individual's life. In the workplace, as in other areas, stress can play a positive role by increasing alertness among staff and mobilizing their adaptive capabilities. To some extent, therefore, a certain level of stress has the potential to actually contribute to organizational effectiveness. However, stress can become counterproductive once excessive levels of unresolved stress begin to affect the health and productivity of the workforce. Employers in any setting therefore have both commercial and moral reasons for being sensitive to the incidence of stress and developing management approaches for controlling it. This is particularly so in industries such as the hotel industry, which are both labor intensive and dependent upon face to face contact with guests in the delivery of services.
Despite the wide management interest, job stress in the hotel industry has been little investigated. In addition, in hospitality and tourism academia, little attention is given to methods of coping with stress and job performance.

Chiang et al. (2010) investigated the relationships among job stressors, coping resources, and job stress. Data were collected from 255 food service employees in the hotel and catering industry. Hierarchical regression showed main significant effects of job demands and job control and three-way (job demands × job control × work-life balance practices) interactions on job stress. The results further demonstrated that high job demands coupled with low job control and the availability of work-life balance practices resulted in a higher level of stress.

Emotional exhaustion is a type of high level of stress and burnout is a state of mental weariness. It is an important issue for hospitality organizations because customer contact employees and hospitality managers function in an environment that is particularly susceptible to the creation of the antecedents of burnout. Further, emotional exhaustion itself is costly to hospitality organizations and individuals because it has been shown to result in depersonalization, detachment, decreased service quality and job performance, and increased turnover. O’Neill and Xiao study (2010) found out that emotional exhaustion of hotel supervisors and managers is a function of job, organizational characteristics, and also personality characteristics. This study analyzes whether personality traits of the managers themselves, including extroversion and neuroticism, and found out that they are predictors of emotional exhaustion.

This paper examines the effect of role stress and methods of coping with stress on job performance of hotel supervisors in 4 and 5 star hotels in Egypt. The research starts with theoretical framework and hypotheses, and then focuses on the methodology. Results will be analyzed and discussed. The study will conclude with conclusion and recommendations. Then, implications for managers and need for future research are reported.

THEORETICAL FRAMEWORK

A number of human resource scholars and organizational behavior researchers such as Chiang et al. (2010), Simon et al. (2008), and Edwards (2001) tested many causes and underlying dimensions of stress. As more employees work and interact with peers from different countries, more cross-cultural conflicts and problems may create new types of job stress. Stress can also occur if the employees feel “under loaded” through lack of stimulus or social contact, or, in most cases, “overloaded”. Further, work stress factors may include role ambiguity, role conflict, conflicting performance expectation, politics, work climate, and low interpersonal relationships.

The earlier studies on sources of stress at the work place in developing countries found that there are more unmeasured variables that can contribute to stress at the work place (Manshor, 2000). These include individual and family factors, socio-economic and financial status, and mental and physical health factors.

Stress can be derived from three sources; physical, mental and situational. Physical stress can be brought on by such things as overwork, lack of rest and a poor diet. Mental stress can be traced to a person’s mental state of mind. It involves our hopes, fears and regrets from our day-to-day life. Situational stress is derived from our interaction with the outside world – our roles as husband, father, wife and mother and also our interaction with the trappings of modern life such as cars, computers, etc.

Organizational behavior and human resource management researchers identified five major categories of work stress (Cooper et al., 1988; Hedge et al., 1992): (1) Factors related to the job. These include working conditions, physical surroundings and facilities such as air quality, lighting, decoration and tidiness, noise, furniture and personal space can affect moods and overall mental state, (2) Role stress. Stress comes from role ambiguity and role conflict. Role ambiguity arises when individuals do not have a clear picture about their work objectives, their peers’ expectations, and the scope and responsibilities of their jobs. Role conflict takes place when the employee has to choose between competing demands or expectations. Conflict situations can act as stress factors and lead to cardiovascular ill-health risks, such as elevated blood pressure and abnormal blood chemistry (Ivancevich and Matteson, 1980), (3) the use of technology (Video display terminal stress :VDT). VDT stress is an adverse physical and psychological
reaction to prolonged work at a video display terminal. Along with the massive increase in the use of computers and VDT’s in all areas of work, researchers have found an increase in absenteeism and stress related illness related to the use of computers and VDTs (Hedge et al., 1992). (4) Interpersonal relationships. Dealings with superiors, peers and subordinates can dramatically affect the way one feels at the end of the day. Selye (1974) suggested that learning to live with other people is one of the most stressful aspects of life. (5) Career development. A number of issues can act as potential stress factors throughout one’s working life. The lack of job security; fear of redundancy; obsolescence or retirement; and various performance appraisals can cause stress. In addition, the frustration of having reached one’s career ceiling or not having been promoted can result in extreme stress. Ivancevich and Matteson (1980) suggested that individuals suffering from “career stress” often show high dissatisfaction, job mobility, burnout, poor work performance, and less effective interpersonal relationships at work. Stress at work is also associated with other factors including individual, socio-economic, and family factors (Swanson et al., 1998).

**Human Resource Management**

Human resource management in an organization is very important. These activities include recruitment, selection, training, career development, compensation, and performance appraisal. They are the basic functions of an organization (Huseyin et al., 2006, Tsaur and Lin, 2002; Reid et al., 2002). Human resource management practices are able to provide an organization with a competitive advantage in a working environment. They can assist job satisfaction and may increase the organizational success while reducing the intention to quit and negative word of mouth of employees (Burke, 2003; Pare et al., 2001; Bond, 2004, and Huseyin et al., 2006). If human resource management mechanisms do not work effectively and efficiently, an employee will lack commitment and loyalty toward the organization. Lack of trust to business causes the demoralization of employees (Astrachan et al., 2002).

Among life situations, the workplace stands out as a potentially important source of stress purely because of the amount of time that is spent in this setting. However, the stress-inducing features of the workplace go beyond simply the time involved. With the financial security and opportunities for advancement of individuals being dependent upon their performance, the pressure to perform makes the work situation potentially very stressful. Furthermore, events in the workplace affect social relations both within and beyond that environment. Conversely, relationships in the non-work situation can impinge on the individual's ability to cope in the work environment (Hart and Wearing, 1995).

The relevance of workplace stress to well-being has been recognized, but little attention has been given to the incidence of this problem in the service industry, despite the growth of this sector, and the obvious relevance of stress to fluid situations where much depends on inter-personal relations (Law et al., 1995). Even less attention has been given to work-induced stress specifically in the hotel industry (Huseyin et al., 2006; and Faulkner and Patiar, 1997).

Cavanaugh and his colleagues (2000) found that some stressors might result in positive outcomes, and perceived stressors could be differentiated into two types; challenge stressors and hindrance stressors. Based their definitions, challenge stressors refers to "work-related demands or circumstances that, although potentially stressful, have associated potential gains for individuals, including high workload, time pressure, job scope, and high responsibility", whereas hindrance stressors refers to "work-related demands or circumstances that tend to constrain or interfere with an individual’s work achievement, and do not tend to be associated with potential gains for the individual, including organizational politics, red tape, role ambiguity, job insecurity" (Cavanaugh et al., 2000). It has consistently been found that challenge stressors associated positively with desirable outcomes, such as job satisfaction and performance, while hindrance stressors associated negatively with these same outcomes. However, both types of stressors were found harmful to well-being (Zhang, 2009).

Four main considerations make the incidence of work-related stress highly relevant to hotel management. Firstly, the emphasis on face to face contact with guests and the real time nature of service delivery means that workers are required to respond promptly (Dann, 1990), and they are “subject to a mass of competing, often contradictory or conflicting demands and expectations from a multiplicity of
sources” (Hales and Nightingale, 1986, p. 10). Secondly, if workers are unduly stressed and therefore unhappy, this will be reflected in their dealings with guests, and the quality of the service provided will suffer as a consequence (Zohar, 1994). Thirdly, high stress levels have the potential to result in high levels of staff turnover and this will, in turn, result in higher training costs and problems in service quality maintenance. This can be a particularly significant problem in a labor-intensive industry such as the hotel industry. Finally, as employers, hotel managers have a moral obligation to protect the welfare of their staff by adopting management practices that reduce their employees’ exposure to situations where stress may become a problem.

**Role Stress: Role Conflict/Role Ambiguity and Job Performance**

The hospitality industry is characterized by a requirement for close cooperation between departments and personnel, time pressures, elastic demand, and labor-intensive functions. As such, work in the hospitality industry can be tiring for employees who are faced with a demanding work tempo, complex procedures, and intensive interpersonal relations at every step of their working day (Birdir and Tepeci, 2003).

This creates several organizational challenges for hospitality organizations. The following are some of the major challenges. First, the structure must be designed to handle significant uncertainty and variability in the service production process. This can range from variability in customer co-production to customer involvement in supervisory span of control and the effect this involvement has for employee role clarity. Second, the task design has to fit the degree of interaction between the customer and employees. Third, the environment or the service setting must be compatible with the customer's expectations, albeit it is beyond the scope of this paper to discuss the organizational setting or servicecape.

Kuruzuum et al. (2008) made a research using a questionnaire survey of 139 middle managers in four- and five-star hotels in a major tourist destination of Turkey. Data were collected using the Turkish version of the Maslach Burnout Inventory; job satisfaction; job characteristics; and demographic characteristics. These data were then analyzed for evidence of relationships among the variables. The burnout levels of the middle managers are found to be moderate. Job satisfaction and job characteristics are found to be important predictors of burnout. Certain job characteristics (such as excessive workload, lack of support from senior management, task complexity, and role ambiguity) increase the emotional exhaustion of middle managers and decrease their performance levels. Burnout levels among managers of food and beverage and front-office operations are found to be greater than those of other middle managers.

The hospitality managers, supervisors, and employees are more likely to experience role conflict and role ambiguity than would a manufacturing counterpart. This is due to the intangibility of the service experience and the customer interaction requirement of simultaneous production with consumption. Because the customer contact employee is responsible for producing or co-producing the service experience in a way that meets that unique customer's expectations, there is great opportunity for role ambiguity in the service encounter (Jackson and Schuler, 1992). The employee is frequently faced with potential conflicts between the role expected by the customer and the role expected by the organization or even other employees (Zeithaml et al., 1988). For example, receptionists may be asked to speed up the number of customers they serve per hour in high seasons; however customers may expect the receptionists to engage in conversations about local tourist attractions. Role conflict can also be caused by company policies that conflict with customer expectations. For example, if hotel customers normally expect to be able to cash a check and the hotel has a no check-cashing policy this can create conflict (Zeithaml et al., 1988). As Broderick (1998) notes, role theory helps service organizations understand how to manage the employee-customer relationship.

In an effort to clarify the role ambiguity in service experiences, some researchers have emphasized the importance of a service culture or service climate. Gronroos (1990, p. 7), for example, stresses the importance of a service climate or culture to fill in any gaps or the difference between what the employee can be trained to do and what that employee will have to do to satisfy the customer. Customers and their
behavior cannot be standardized and totally predetermined. The situations vary and therefore a distinct service-oriented culture is needed that tells employees how to respond to new, unforeseen or even awkward situations. Cahill (1995) refers to the importance of organizational memory. Cahill states that organizational memory is most useful when the organizations learn from and build on the memory. Thus, the memory is constantly updated and helps the organization manage environmental uncertainty. He proposes that a strong culture is one that can withstand environmental shocks and help the organization learn.

Communication between managers and employees (Readon and Enis, 1990) and good socialization and training programs (Grove and Fisk, 1993) are ways hospitality organizations can reduce role conflict. Zeithaml et al. (1988) suggest providing clear and unambiguous communication regarding goals, strategies, and objectives for the organization, and job instruction and procedures will reduce role ambiguity. This communication should be part of the organization's internal marketing system.

Kim et al. (2009) investigates the moderating roles of gender and organization level in the relationship between role stress and job satisfaction for hotel employees. A survey instrument that included measures of job satisfaction, role stress (conflict and ambiguity) and demographic information was used to collect information from hotel employees in Republic of Korea. Findings show that the effect of role stress on job satisfaction is significantly stronger for female employees and supervisory employees than male employees and non-supervisory employees.

Methods of Coping with Stress and Job Performance

Stress is a pervasive and essential part of life. It is defined as the reaction of individuals to demands (stressors) imposed upon them. Stress plays a positive role by triggering the mobilization of adaptive responses (Selye, 1976). Contrary to popular belief, stress can be associated with both pleasant and unpleasant events and only becomes problematic when it remains unresolved because of lapses in the individual's adaptive capacity. When this happens, the individual becomes disorganized, disoriented and therefore less able to cope; stress related health problems may result. Selye (1974) refers to distress in order to differentiate these situations, although this distinction has not always been applied in the general usage of the term. Accordingly, in the following analysis, job stress refers to situations where the well-being of individuals is detrimentally affected by their failure to cope with the demands of their environment.

Bernin et al. (2003) work was part of the Collaborative International Study of supervisory and Managerial Stress. Swedish managers and supervisors (N=288) from the 3 levels in the organizations were included. Swedish results were compared with supervisory and managerial coping data from 4 other nations: UK, Bulgaria, India, and USA. Cross-national differences in support and control coping were found. Covert coping seemed to be a predominantly female strategy. In general, however, female and male managers are more alike with regard to coping patterns than men and women in the population. Some of the coping behavior of managers and supervisors was associated with health risks. These data imply that coping strategies should be improved in organizational settings, particularly for females.

Cheol et al. (2009) study investigates the moderating roles of gender and organization level in the relationship between role stress and job satisfaction for hotel employees. A survey instrument that included measures of job satisfaction, role stress (conflict and ambiguity) and demographic information was used to collect information from hotel employees in Republic of Korea. Data from 320 respondents, representing a 64% of response rate, were analyzed. Findings show that the effect of role stress on job satisfaction is significantly stronger for female employees and supervisory employees than male employees and non-supervisory employees.

The hospitality industry offers services to consumers around the clock, every day of the year. Lodging managers, in particular, are required to work long hours in a highly unpredictable and stressful environment. Consequently, a successful career in hotel management leaves little time for outside activities which often leads managers to leave such positions or the industry altogether. YU Chin and Peyton (2010) study explores the coping strategies used by lodging managers who have a successful
balance between their work and personal lives. Eight coping strategies are identified by interviewing 15 lodging managers.

The hospitality industry needs to provide a good quality of work life (QWL) in order to attract and retain employees. Kandasami et al. (2009) made a research that defines the ‘expected dimensions of QWL’ by the potential and present hotel employees. The content analysis of the data yielded eight dimensions of QWL.

Constructs like role stress and job performance have been developed and empirically tested in developed industrialized countries (Baba, Jamal, & Tourigny, 1998; Jex, 1998; Maslach, 2003). Their portability and usefulness in developing countries have rarely been examined despite repeated suggestions to do so (Carr & Pudelko, 2006; Foley, Hang-Yue, & Lui, 2005; Jamal, 2005).

Similarly, in different cultures such as in Taiwan, China, Turkey, Hong Kong, USA, and Canada, human resource management and organizational behavior researchers and scholars studied the stress job performance relationship to job performance (e.g. Kuruzuum et al., 2008; Jamal, 2005; AbuAlruba, 2004; and Chen, 2009). Job stress can be redefined as an individual's reactions to characteristics of the work environment that seem emotionally and physically threatening (Jamal, 2005). It points to a poor fit between the individual's capabilities and his or her work environment, in which excessive demands are made of the individual or the individual is not fully prepared to handle a particular situation (Jamal, 1985). In general, the higher the imbalance between the demands and the individual's abilities, the higher will be experienced stress (Jamal, 2005). Job performance can be viewed as an activity in which an individual is able to accomplish successfully the task assigned to him/her, subject to the normal constraints of the reasonable utilization of available resources (Jamal, 1984). At the conceptual level, four types of relationships were earlier proposed to exist between the measures of job stress and job performance: a negative linear relationship, a positive linear relationship, a curvilinear/U-shaped relationship, and no relationship between the two (Jamal, 1984).

A negative relationship between job stress and performance was conceived by those who viewed job stress as essentially dysfunctional for the organization and its employees (Chen, 2009; Westman & Eden, 1996). These researchers contended that chronic job stress is by its very nature extremely aversive to most employees, creating a noxious situation in the work environment. In such settings, individuals are most likely to spend a sizable chunk of their time and energy coping with stresses, thus adversely affecting their performance. Therefore, the hypothesis of a negative relationship between job stress and performance tends to be logical to its advocates. A number of studies have shown a negative linear relationship between various facets of job stress and job performance and performance-like variables (Breaugh, 1980). In a recent meta-analysis, 24 (46%) of the 52 empirical studies examined supported a negative linear relationship between stress and performance (Muse et al., 2003).

By contrast, a U-shaped/curvilinear relationship between job stress and performance can refer to the work of (Ivancevich, Konopaski, & Matteson, 2005; and Robbins, 2005). The reasoning behind this model tends to be that when an individual experiences low stress at the job, he or she is most probably not activated and thus would not exhibit improved performance. On the contrary, if the individual experiences a high level of chronic job stress, he or she may spend time in coping with stress and his or her efforts on the job may be reduced, resulting in low performance. The model suggests that a moderate amount of stress is optimal for job performance because, at such levels, the individual is not only activated but also able to direct his or her energies toward better job performance. A number of laboratory studies have supported this hypothesis (e.g. Cohen, 1980). In the real work setting, this hypothesis has rarely been tested and supported. In the recent meta-analysis cited earlier, only 2 (4%) of the 52 empirical studies supported the existence of a U-shaped/curvilinear relationship between stress and performance (Muse et al., 2003).

The advocates of a positive relationship between job stress and performance generally equate stress with “challenge” (Meglino, 1977). This model can be originally traced back to the work of John Dewey and Arnold Toynbee who view problems, anxieties, difficulties, and challenges as occasions for constructive activities and improved performance. The model suggests that at a low level of stress, the individual does not face any challenge and, therefore, is not likely to show any improved performance. At
a medium level of stress, the individual is moderately aroused in terms of challenge and thus will exhibit mediocre performance. At a high level of stress, the individual experiences optimal challenge and his or her performance will improve accordingly. There are a few laboratory studies supporting this hypothesis (Cohen, 1980). However, in the real work setting, this hypothesis is not commonly tested or supported. In the recent meta-analysis, 7 (13%) of 52 empirical studies supported a positive linear relationship between job stress and job performance (Muse et al., 2003).

The hypothesis of no relationship between job stress and performance originates from the psychological contract approach between the individual and the employing organization. Here, individuals are viewed as rational beings who are primarily concerned with performance because they know that they are being paid for doing the job. Individuals are expected to ignore the adversities creating hindrances toward better job performance regardless of happens in the work environment. It is believed that workers will not let their performances be affected by those happenings. Their performance will remain more or less at the same level in the presence of high chronic job stress as well as in the absence of it. This segmented view of individuals even suggests that for the majority of workers in industrial societies, work is not the central life interest (Taveggia & Santos, 2001). Thus, the advocates of this approach view job stress neither as functional (improved performance) nor dysfunctional (reduced performance), but rather as a neutral state for individuals' job performance. In the recent meta-analysis, 6 (12%) of the 52 empirical studies supported the existence of no relationship between job stress and job performance (Muse et al., 2003).

AbuAlRub (2004) investigated the effect of job-related stress on job performance among hospital nurses, and the effect of social support from coworkers on the stress-performance relationship. She found out that perceived social support from coworkers enhanced the level of reported job performance and decreased the level of reported job stress. A correlational descriptive survey was used to investigate these relationships among a convenience sample of 263 American hospital nurses and 40 non-American nurses. The analysis also indicated a curvilinear (U-shaped) relationship between job stress and job performance; nurses who reported moderate levels of job stress believed that they performed their jobs less well than did those who reported low or high levels of job stress. Results indicted the importance of social support from coworkers, as well as the need for further research to test the U-shaped relationship between job stress and job performance.

THE PROPOSED INTEGRATIVE MODEL

Jamal (2007 and 2005) called for research on the role stressors impact on job performance. In addition, Bernin et al. (2003) called for more practical research on the methods of coping with stress of managers and supervisors that influence their job performance. Therefore, this paper proposes a model to investigate the relationship of role stress & distress measures, and methods of coping with stress to job performance (See Figure 1).

Stress is a relationship between the person and the environment including his work that is appraised by the person as exceeding his or her resources, abilities, capabilities, and competencies; and as endangering his or her well being. In shaping this relationship, coping assumes a central role. Coping is the cognitive and behavioral efforts to master, reduce, or tolerate the internal and/or external demands that are created by the stressful transaction. The study of coping is difficult as it includes intra psychic processes.

We need useful means of measuring, classifying types of role stressors and coping behaviors in a comprehensive way if we want to understand the effects of role stressors at work, and role of coping in the stress process for better human resource management.

The proposed model includes role stress & distress measures: role ambiguity & role conflict, and methods of coping with stress as independent variables and job performance as dependent variable.
FIGURE 1
ROLE STRESS & DISTRESS MEASURE, METHODS OF COPING WITH STRESS, AND JOB PERFORMANCE

ROLE STRESS & DISTRESS MEASURE & METHODS OF COPING WITH STRESS

ROLE STRESS AND DISTRESS MEASURE
- ROLE AMBIGUITY
- ROLE CONFLICT

METHODS OF COPING WITH STRESS:
- COMPONENT 1: RATIONAL TASK ORIENTED BEHAVIOR
- COMPONENT 2: EMOTIONAL RELEASE
- COMPONENT 3: RECOVERY & PREPARATION TO DEAL WITH THE PROBLEM
- COMPONENT 4: POSTPONING ACTION BY DISTRACTING ATTENTION OR AVOIDING
- COMPONENT 5: PASSIVE ATTEMPTS TO TOLERATE THE EFFECTS

H1  H2  H2a  H2b  H3

JOB PERFORMANCE
In light of previous empirical studies of role stress, methods of coping with stress and job performance (Jamal, 1984; Jex, 1998; Sturman, 2003; Westman & Eden, 1991), as well as the recent meta-analysis, a number of hypotheses were developed as follows:

- **H1.** Role stress and distress measure and methods of coping with stress will exert a significant positive influence on job performance.
- **H2.** Role stress and distress measure will exert a significant negative influence on job performance.
  - **H2a.** Role ambiguity will exert a significant negative influence on job performance.
  - **H2b.** Role conflict will exert a significant negative influence on job performance.
- **H3.** Methods of coping with stress will exert a significant positive influence on job performance.
- **H4.** There is a significant impact of role stress and distress measure on methods of coping with stress.
- **H5.** There is a significant impact of methods of coping with stress on role stress and distress measure.

**METHODOLOGY**

**Context, Sample Selection, and Data Collection**

The hospitality industry in Egypt comprises 64 five star and 27 four star hotels (www.southtravels.com/Africa/Egypt). The research population is supervisors in sales, guest relations, front line desks, and reception in the five and four star hotels in Egypt. The sample chosen is a random sample of 1020 supervisors in sales, guest relations, front line desks, and reception in 30 five and four star hotels in Egypt.

The questionnaire was modified to suit the Egyptian environment and the hospitality industry in Egypt. Consequently, the questionnaire was distributed among 50 supervisors to pretest it. Data were gathered through personal interviews. It was revised and modified again before distributing it at a large scale.

The questionnaire was distributed among the randomly selected sample unit: 1020 supervisors. 810 supervisors filled in the questionnaires. 780 completely answered questionnaires are usable. The response rate is about 78%. The data collected are revised and analyzed using the SPSS statistical software package.

Table 1 shows the sample profile where 70% are male, 80% hold a bachelor of commerce (Business or Accounting), 60% are in their 30s, 30% are in the 20s, 67% possess 10 years of experience or less, and 28% years of experience range from 11 to 20 years.

**Measurement Instruments**

A measurement instrument consisting of a multi-dimensional scale is used. Three constructs are included in this study: (1) role stress and distress measure, (2) methods of coping with stress, and (3) job performance. A 5-point Likert scale was used throughout the questionnaire where 5 means strongly agree and 1 means strongly disagree (see appendix).

**Role Stress and Distress Measure**

A multidimensional 14-item measure developed by Siegall (2000) was used. Role stress and distress measure is consisted of two variables: role ambiguity and role conflict. **Role ambiguity** is consisted of 6 items and **role conflict** of 8 items. Subjects were asked to indicate the degree to which statements precisely describe their belief or opinion.

**Methods of Coping with Stress**

Methods of coping with stress were developed by Dewe and Guest (1990) containing 5 items:
rational task oriented behavior, emotional release, recovery and preparation to deal with the problem, postponing action by distracting attention or avoiding the issue, and passive attempts to tolerate the effect.

Job Performance

Job performance was measured through a 6-item developed by Schreisheim et al. (1998). It is a self assessment scale focusing on such items as flexibility, and creative problem solving. A 5 point Likert scale was used where 5 means outstanding, 4 means high, 3 means satisfactory, 2 means low, 1 means very low.

### TABLE 1
RESPONDENTS PROFILE

<table>
<thead>
<tr>
<th>Variables</th>
<th>No</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>546</td>
<td>70%</td>
</tr>
<tr>
<td>Female</td>
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<tr>
<td>Position</td>
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<td></td>
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<td>supervisors</td>
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<td>Educational Background</td>
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<tr>
<td>Bachelor of IT</td>
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<td>10%</td>
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<tr>
<td>Professional/Higher Diploma</td>
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<td>10%</td>
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<tr>
<td>Age</td>
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<tr>
<td>20-29</td>
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<tr>
<td>30-39</td>
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<td>60%</td>
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<tr>
<td>40-49</td>
<td>78</td>
<td>10%</td>
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<tr>
<td>Years of experience</td>
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<tr>
<td>1-10 yrs</td>
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<tr>
<td>11-20 yrs</td>
<td>187</td>
<td>28%</td>
</tr>
<tr>
<td>More than 15 yrs</td>
<td>39</td>
<td>5%</td>
</tr>
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</table>

Data Analysis

To test the proposed model, the study uses various statistical tests to examine the relationships between the variables observed. The tests include the reliability analysis, the correlation analysis, regression analysis, $F$ test, and $T$ test. The reliability analysis will allow us to determine how reliable this model is. It also enables us to establish the degree of confidence we can place in this model (Keller, 1990). The coefficient of correlation measures the strength of the linear relationship between two variables (Lind, Marchal, and Wathen 2006). The multiple regression is used to test the influence of two or more independent variables on the dependent variable. The $F$ test rejects the null hypothesis or fails to reject the research question incorporating all the variables in the study. The $T$ test either rejects the null hypothesis or fails to reject each research question listed in the study.

To test the statistical significance of the entire regression model, the $F$ test was implemented. If the hypothesis is accepted, that means a relationship exists between the independent variables and the dependent variable for the sample population. Once the regression test was completed, there was a need to test the statistical significance of each independent variable. The basic intent of the regression analysis is to estimate a quantitative relationship among variables. For this study, a $T$ test is appropriate. It calculates the statistical significance of estimated regression coefficient (Lind et al., 2006).

The reliability analysis was used to test how reliable the model is. The results are shown in table 2.
### TABLE 2
THE RELIABILITY ANALYSIS

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach's alpha</th>
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<tbody>
<tr>
<td>Role stress and distress measure</td>
<td>0.74</td>
</tr>
<tr>
<td>Methods of coping with stress</td>
<td>0.83</td>
</tr>
<tr>
<td>Job performance</td>
<td>0.82</td>
</tr>
</tbody>
</table>

### RESULTS

The results of the study are discussed in this part. Table 3 shows the correlation among scaled variables where the correlation analysis revealed the following:

(a) The Pearson coefficient of correlation between the role stress and distress measure and job performance is (-0.483) at (0.01) level of significance. That means that there is a negative correlation between the role stress and distress measure and job performance.

(b) The coefficient of correlation between role ambiguity and job performance is (-0.135) at (0.05) level of significance.

(c) The coefficient of correlation between role conflict and job performance is (0.376) at (0.01) level of significance.

(d) The coefficient of correlation between role stress and distress measure and methods of coping with stress is (0.560) at (0.01) level of significance.

(e) The coefficient of correlation between role ambiguity and methods of coping with stress is (-0.383) at (0.01) level of significance. There is a negative significant relationship of role ambiguity to component 1: rational task oriented behavior (-.182); and role ambiguity to component 3: recovery and preparation to deal with the problem (-.140) at (.05) level of significance.

(f) The coefficient of correlation role conflict and methods of coping with stress is (0.360) at (0.01) level of significance. There is a positive significant relationship of role conflict to methods of coping with stress component 1: rational task oriented behavior (0.234); to component 2: Emotional release (0.235), and to component 3: recovery and preparation to deal with the problem (.221) at (.01) level of significance.

(g) The coefficient of correlation between methods of coping with stress and job performance is (0.563) at (0.01) level of significance. There is a positive relationship of methods of coping with stress component 1: rational task oriented behavior (0.301), to component 3: recovery and preparation to deal with the problem (.268) at (.01) level of significance, and to component 2: emotional release (0.183) at (0.05) significance level. In addition, there is a negative relationship of methods of coping with stress component 5: passive attempts to tolerate the effect to job performance (-.202) at (0.01) significance level.

The correlation matrix is useful in analyzing the factors involved in the role stress and distress measure and methods of coping with stress to achieve outstanding job performance. A second use of the correlation matrix is to check for multicollinearity: correlation among the independent variables. The correlations among the independent variables between (-.70 and .70) do not cause difficulties (Lind et al.,...
The correlation analysis proved significant correlation between independent and dependent variables.

TABLE 3
THE CORRELATION AMONG SCALED VARIABLES

<table>
<thead>
<tr>
<th></th>
<th>Role stress and distress measure</th>
<th>Role ambiguity</th>
<th>Role conflict</th>
<th>Methods of coping with stress</th>
<th>Rational task behavior</th>
<th>Emotional release</th>
<th>Recovery &amp; preparation</th>
<th>Postponing action</th>
<th>Passive attempts</th>
<th>Job performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role stress and distress measure</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role ambiguity</td>
<td>.526**</td>
<td>1</td>
<td>-.101</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role conflict</td>
<td>.794**</td>
<td>-.101</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methods of coping with stress</td>
<td>.560**</td>
<td>-.383**</td>
<td>.360**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rational task behavior</td>
<td>.089</td>
<td>-.182*</td>
<td>.234**</td>
<td>.429**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional release</td>
<td>.736**</td>
<td>.056</td>
<td>.235**</td>
<td>.435**</td>
<td>.117</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recovery &amp; preparation</td>
<td>.105</td>
<td>-.140*</td>
<td>.221**</td>
<td>.501**</td>
<td>.121</td>
<td>.007</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postponing action</td>
<td>.139</td>
<td>.079</td>
<td>.105</td>
<td>.510**</td>
<td>-.063</td>
<td>-.027</td>
<td>.018*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passive attempts</td>
<td>.157*</td>
<td>.010</td>
<td>-.022</td>
<td>.274**</td>
<td>.247**</td>
<td>.157*</td>
<td>-.088</td>
<td>.119</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Job performance</td>
<td>.483**</td>
<td>-.135*</td>
<td>.376**</td>
<td>.563**</td>
<td>.301**</td>
<td>.183*</td>
<td>.268**</td>
<td>.009</td>
<td>-.202**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Multiple regression was used to test the research hypotheses. The objective is examining whether the independent variables: role stress and distress measure and methods of coping with stress are capable of effectively estimating job performance. Table 4 shows the results of testing the relationship of job stress and distress measure and methods of coping with stress to job performance.
The analysis of variance table shows that the overall model is proved significant when the independent variables: the job stress and distress measure and methods of coping with stress were entered into the regression equation. The results prove support for the relationship in hypothesis 1 (Overall model: $F=10.997$, df =2, p < 0.001; $R=.664$, $R^2 = .583$, adjusted $R^2=.474$). $R$-Squared measures the proportion of variance in the dependent variable that is explained by changes in all of the explanatory variables. In the full model, the relationship of the job stress and distress measure and methods of coping with stress to job performance of supervisors is supported. Therefore, H1 is supported. The global test assures that the independent variables do have the ability to explain the variation in the dependent variable (Lind et al., 2006). Thus, there is enough evidence that both the stress and distress measure and methods of coping with stress are significantly related to and have a significant impact on job performance (see Table 5).

Table 5 shows the results of testing the impact of role stress and distress measure and methods of coping with stress on job performance.

### TABLE 5

TESTING THE IMPACT OF ROLE STRESS AND DISTRESS MEASURE AND METHODS OF COPING WITH STRESS ON THE JOB PERFORMANCE

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>3.009</td>
<td>4.153</td>
<td>.725</td>
<td>.469</td>
</tr>
<tr>
<td>Role Stress And Distress Measure</td>
<td>.119</td>
<td>.045</td>
<td>.186</td>
<td>2.652</td>
</tr>
<tr>
<td>Methods Of Coping With Stress</td>
<td>.129</td>
<td>.042</td>
<td>.214</td>
<td>3.046</td>
</tr>
</tbody>
</table>

a. Dependent Variable: job performance

The regression method is used to test the impact of role stress and distress measure on job performance. Table 6 shows that the job stress and distress measure is a significant predictor on job performance ($F=17.273$, df=2, p < .001; $R=.388$, $R^2=.15$, adjusted $R^2=.142$). As hypothesized, role stress and distress measure have a significant impact on job performance.
TABLE 6
IMPACT OF ROLE STRESS AND DISTRESS MEASURE ON JOB PERFORMANCE (ANOVA)\textsuperscript{b}

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>349.497</td>
<td>2</td>
<td>174.749</td>
<td>17.273</td>
<td>.000\textsuperscript{a}</td>
</tr>
<tr>
<td>Residual</td>
<td>1972.831</td>
<td>195</td>
<td>10.117</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2322.328</td>
<td>197</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{a}. Predictors: (Constant), Role Conflict, Role Ambiguity
\textsuperscript{b}. Dependent Variable: job performance

Table 7 shows that role conflict has an impact on job performance at .001 level of significance while role ambiguity has a negative impact on job performance at 0.05 level of significance. Role conflict explains 20% of the total variation of the dependent variable: job performance. Thus, H2 is supported, H2a is supported but H2b is not supported.

TABLE 7
THE IMPACT OF ROLE AMBIGUITY AND ROLE CONFLICT ON JOB PERFORMANCE\textsuperscript{a}

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>10.111</td>
<td>3.338</td>
<td></td>
<td>3.029</td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>-.099</td>
<td>.070</td>
<td>-.095</td>
<td>-1.427</td>
</tr>
<tr>
<td>Role Conflict</td>
<td>.271</td>
<td>.049</td>
<td>.366</td>
<td>5.512</td>
</tr>
</tbody>
</table>

\textsuperscript{a}. Dependent Variable: job performance

The analysis of variance used to examine the influence of the methods of coping with stress on job performance reveals that there is a positive impact of methods of coping with stress on job performance (F=8.35, df=5, p < .001). Therefore, H3 is supported. Table 8 shows that the method of coping with stress component 1: rational task oriented behavior and component 3: recovery and preparation to deal with the problem have a positive impact on job performance at .001 significance level, and component 2: emotional release has a positive impact on job performance at .05 significance level. So, methods of coping with stress component 1: rational task oriented behavior, component 2: emotional release and component 3: recovery and preparation to deal with the problem are significant predictors of job performance.
To explore if the job stress and distress measure has an influence on the methods of coping with stress or not, a multiple regression equation is formed. ANOVA test shows that Role stress and distress measure has a significant impact on methods of coping with stress at .001 significance level ($F=14.776, df=2, p<.000; R^2=.302, R^2=.132, \text{Adjusted } R^2=.123$). Table 9 shows a significant effect of Role ambiguity and role conflict on methods of coping with stress at consecutively, 0.05 and 0.01 significance level. Role ambiguity has a negative impact. The higher the role ambiguity, the lower the positive and effective methods a hotel supervisor can use to cope with stress while performing his work. Role conflict has a significant impact on methods of coping with stress. In case of role conflict, the hotel supervisors are capable to cope with such situations to perform effectively. Therefore, H4 is supported.

### TABLE 8
IMPACT OF METHODS OF COPING WITH STRESS ON JOB PERFORMANCE

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>9.642</td>
<td>3.063</td>
<td>3.148</td>
</tr>
<tr>
<td></td>
<td>Rational task oriented behavior</td>
<td>.312</td>
<td>.091</td>
<td>.233</td>
</tr>
<tr>
<td></td>
<td>Emotional Release</td>
<td>.182</td>
<td>.087</td>
<td>.139</td>
</tr>
<tr>
<td></td>
<td>Recovery And Preparation To Deal With The Problem</td>
<td>.292</td>
<td>.084</td>
<td>.229</td>
</tr>
<tr>
<td></td>
<td>Postponing Action By Distracting Attention Or Avoiding The Issue</td>
<td>.044</td>
<td>.081</td>
<td>.036</td>
</tr>
<tr>
<td></td>
<td>Passive Attempts To Tolerate The Effect</td>
<td>-.146</td>
<td>.094</td>
<td>-.107</td>
</tr>
</tbody>
</table>

a. Dependent Variable: job performance

### TABLE 9
THE IMPACT OF THE ROLE STRESS AND DISTRESS MEASURE ON METHODS OF COPING WITH STRESS

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>54.995</td>
<td>5.589</td>
<td>9.841</td>
</tr>
<tr>
<td></td>
<td>Role Ambiguity</td>
<td>-.077</td>
<td>.116</td>
<td>-.044</td>
</tr>
<tr>
<td></td>
<td>Role Conflict</td>
<td>.436</td>
<td>.082</td>
<td>.355</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Methods Of Coping With Stress
The ANOVA test reveals a significant impact of the methods of coping with stress on the stress and distress measure ($F=3.844,R^2=.09,\text{Adjusted } R^2=.06; F=3.844,df=5, p<.002$). Table 10 shows the results of testing the impact of methods of coping with stress on role stress and distress measure. It provides evidence that in case of the existence of the role ambiguity and/or conflict, the supervisors use methods of coping with stress component 2: emotional release, and component 4: postponing action through distracting attention or avoiding the situation. H5 is supported.

**TABLE 10**

**TESTING THE IMPACT OF THE METHODS OF COPING WITH STRESS ON THE ROLE STRESS AND DISTRESS MEASURE$^A$**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>60.000</td>
<td>5.045</td>
<td>11.89</td>
</tr>
<tr>
<td></td>
<td>Rational task oriented</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>behavior</td>
<td>.131</td>
<td>.150</td>
<td>.062</td>
</tr>
<tr>
<td></td>
<td>Emotional Release</td>
<td>.485</td>
<td>.143</td>
<td>.237</td>
</tr>
<tr>
<td></td>
<td>Recovery And Preparation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To Deal With The Problem</td>
<td>.192</td>
<td>.139</td>
<td>.096</td>
</tr>
<tr>
<td></td>
<td>Postponing Action By</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distracting Attention Or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avoiding The Issue</td>
<td>.278</td>
<td>.134</td>
<td>.144</td>
</tr>
<tr>
<td></td>
<td>Passive Attempts To</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tolerate The Effect</td>
<td>.066</td>
<td>.154</td>
<td>.031</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Role Stress And Distress Measure

**CONCLUSION**

In conclusion, role stress and distress measure methods of coping with stress are correlated to each other and to job performance. There is sufficient evidence that the role stress and distress measure, and methods of coping with stress have an impact and exert an influence on job performance of hotel supervisors.

There is enough support that role stress and distress measure with its two components: role ambiguity, and role conflict has an impact on job performance. Role ambiguity has a negative influence on job performance which means that the higher the role ambiguity, the lower the job performance of hotel supervisors and the lower the role ambiguity, the higher the job performance. In addition, there is sufficient evidence that role ambiguity has a impact on methods of coping with stress. It was found out that hotel supervisors found it difficult to cope with role ambiguity and use effective and problem focused methods of coping with stress and they use in most cases emotion- based methods like Passive attempts to tolerate the effect and/ or emotional release. On the other hand, it is supported that hotel supervisors can cope with different degrees of role conflict through using problem focused methods of coping with stress like rational task oriented behavior, and recovery and preparation to deal with the problem in order to perform effectively.
There is sufficient evidence that methods of coping with stress has an impact on job performance. There is a significant effect of the methods of coping with stress component 1: rational task oriented behavior, component 2: emotional release and component 3: recovery and preparation to deal with the problem on job performance. It is proven that the hotel supervisor the more they use methods of coping with stress, the more outstanding their job performance. While they perform their jobs, they cope with role stress and distress through mainly using some kind of combination between problem focused and emotional focus methods focusing on rational task oriented, emotional release, and recovery and preparation to deal with the problem while in some cases they are emotional focused, in specific, when the role ambiguity is higher. In the latter case, the hotel supervisors are more emotional focused when trying to cope through using emotional release and passive attempts to tolerate with the effect, and consequently this will exert unwanted influence on job performance.

RECOMMENDATIONS, MANAGERIAL, AND RESEARCH IMPLICATIONS

It is shown that role ambiguity affect methods of coping with stress used by supervisors and negatively affect their performance. Role conflict, surprisingly, had no negative effect on methods of coping with stress or performance. Both profiles are interpreted to form a coherent pattern pointing at hospitality industry supervisors’ methods of coping with stress and consequently, their performance as the focal issue of the job stress in this industry. Since these ties with current approaches to service quality, the possibility is raised for developing integrated strategies for improving both.

Here are some suggestions for future research. After controlling for two job stress factors (role ambiguity and role conflict), more studies can test if personality attributes explain significant proportions of the job burnout factors and job performance. The most noteworthy finding can be the predictability of the agreeableness trait in hotel employees’, supervisors, and managers job burnout. For testing the relationship between personality traits and job stress in other disciplines and may be in other service industries, more vigorous future research is recommended to validate the value of this personality to the hospitality industry. Research is also needed to examine the effects of more stress variable on job performance as well as examining the antecedents and consequences of job stress including role stress variables. New methods of coping with stress could be explored in the hospitality industry and other service industries, as well as in other professions like sales and other managerial levels like middle or top level managers. In addition, the same study could be applied on other managerial levels, other industries, or other professions.

Coping with Uncertainty

The hospitality organization is an open system and brings all the uncertainties that open systems create. Thus, the organization has to develop formal policies and procedures for handling uncertainty, processing quantities of equivocal information, building a strong culture or service climate to guide employees in handling the problems customers can create, and designing customer contact tasks and jobs to accommodate not only this variability, but also the potential customer participation in co-producing the service experience. If the customer contact employee is to perform successfully as the organization, the “service factory”, repair facility, and as partial marketers, then this task/job must be designed in ways that accommodates the unique task requirements.

In producing a hospitality service, experienced workers cannot rely on past procedures and ways of doing things; they are continually faced with novel situations that require unique methods to react appropriately to the customer. The delivery of hospitality services requires a high capacity to process information. Each interaction contains much uncertainty that requires a great deal of information processing. The hospitality service delivery system also requires the guest to provide a great deal of information that may be required to produce the service. The traditional manufacturing models that sought to buffer the technical core of the organization from uncertainty are not relevant to the hospitality service sector. Instead, hospitality service organizations have to discover organizational designs and methods to cope with the uncertainty of customer involvement in the service delivery system.
Task Design and Job Analysis of Human Resources

If a service operation wants to increase transactions it should simplify its offering, thus reducing the variety of service offerings provided. Conversely, if the organization has a complex product offering, employees should be knowledgeable and have the freedom to make decisions. The higher the customization of the product for the customer, the more the employees need to be able to have the skills and the ability to meet the customer's unique needs. Conversely if the product is standardized, such as a fast food meal, the service design calls for more rules and regulations. To summarize, if the organization wants to produce a standardized service, then it would reduce task variety and decrease the amount of employee discretion by increasing rules and regulations. Conversely, if the organization wants to produce a customized service, then it should increase employee discretion, allowing them sufficient task variety to satisfy customer wants.

Distinguishing Characteristics of Services Related to Organizing:
• The hospitality service delivery system has to deal with the uncertainty of simultaneous product and consumption, which creates uncertainty. Manufacturing systems are closed systems with less uncertainty. Thus, the service organization is organized differently from a manufacturing organization.
• Hospitality services providing customized products require high employee discretion and task variety. Manufacturing employees do not usually deal with the customer and therefore can have more specialized tasks, requiring less discretion and task variety.

IMPLICATIONS FOR MANAGERS

Staffing
Managing employees, especially customer contact employees, in hospitality organizations calls for different staffing strategies than in manufacturing. In hospitality services, the customer contact employee is in the service factory, producing the service experience for or with the guest. In most cases, this production process requires involvement from the guest as an input and/or a co-producing role. This means that the employee has to have the necessary knowledge, skills and abilities to perform the task and also be interactively skilled. In providing a service to the guest, the employee has to get informational input from the customer (information about the guest room preference, how to prepare a steak, etc.). Thus, the employee has to not only know how to produce the service product but also how to listen to the customer to find out what specific service product is desired. Also, the employees need the problem solving skills to identify and fix customer problems in real time. When production and consumption occur simultaneously, the burden of responsibility that falls on the guest contact employee is very much different than it is for the product producer.

In regard to the additional complexity and ambiguity created by customer interaction, there are several issues. These are recruiting, selecting, training, and rewarding employees for the complex roles they play in customer interactions. Thus, the service writers seek to identify and train the attitudes and values that their people need to be successful in a service encounter. While a machine doesn't care if the riveter has bad attitude, the restaurant patron or hotel guest does. Having satisfied employees is especially important for hospitality organizations.

REFERENCES


Behavioral Finance: Contributions of Cognitive Psychology and Neuroscience to Decision Making

James A. Howard
University of Maryland University College

This paper employs a five-paradigm model to assess various contributions of cognitive psychology and neuroscience to understanding financial decision making. Whereas conventional academic finance emphasizes financial theory, the emerging field of behavioral finance encompasses investigations of cognitive and emotional factors affecting the financial decision making processes of individuals, groups, and organizations. It looks at how people really make financial decisions, not at how theory predicts they should make such decisions. Behavioral finance expands our understanding of financial decision making in terms of personal financial decisions and how markets work but also comprises a new instrument in the decision maker’s toolbox.

INTRODUCTION

Observations in the past few years of the outcomes of financial decision making by individuals has provided a new awareness (and humility) regarding the inadequacy of the accumulated knowledge that supports sound financial decision making. Actions by Congress providing incentives for individuals to make ill-advised home purchases, home owners using their homes as ATMs to increase near-term consumption, the failure of Americans to save sensibly for retirement, poor investment performance by individual investors, and poor decision making by corporate managements that have destroyed huge amounts of wealth beg the question: Why do we get such consistently poor results and how can we improve financial decision making in the future for the benefit of stakeholders?

To respond to this challenging question, an important starting point is developing a historical context describing and analyzing how financial decision making has evolved over time. This context, when combined with an assessment of where we are in understanding financial decision making, can lead us to a deeper understanding of how to use what we know more effectively and to better define what sort of research program is needed going forward to fill the gaps in our understanding. In this paper a model comprised of five financial decision making paradigms will be employed for conducting a qualitative meta-analysis of the current state of financial decision making behavior. The five paradigms are Rules of Thumb/Heuristics, Rational Being/Theory, Cognitive Psychology/Behavioral Finance, Neuroscience, and the Unconscious.

In the last 100+ years varying amounts of research has been conducted to improve financial decision making. In general, it appears that, as each then-current most-favored paradigm becomes increasingly encumbered with anomalies and unfavorable critiques, a new paradigm arises by being able to explain some of the weaknesses of the “old” paradigm and as new areas of research are opened up. The old paradigm declines and the new paradigm becomes increasingly adopted and applied to real world
observations. At the point of maximum enthusiasm, a reductionist tendency leads us to feel that finally we may have some important solutions and henceforth financial decision making will be significantly improved. The cycle continues as this currently favored paradigm reaches its maximum influence and begins to decline due to its failures to account for observed behaviors, while a new paradigm takes its place as the one now favored to move knowledge of financial decision making forward. The model employed in this paper will attempt to show how five paradigms for financial decision making have risen to prominence over time, and how the earlier ones have leveled off and/or declined in relevance due to these forces. The overall model is shown in Figure 1:

**FIGURE 1**

**KNOWLEDGE ACCUMULATION/EVOLUTION – FINANCIAL DECISION MAKING**

Each of the five components of this model will be described, analyzed, and assessed in terms of its contribution to the body of knowledge regarding financial decision making. The height of each curve in Figure 1 represents its relative influence as a paradigm at the indicated points in time. The examination and analysis will be on both a time series (how a specific component/paradigm has evolved over time) and cross sectional basis (how paradigms contribute to the body of knowledge at specific points in time). This qualitative meta-analysis approach is meant to provide an integrated view of contributing paradigms over time with the goal of providing more transparency to the very complex process of how financial decisions are made. Due to their strong influences on current financial decision making theory and practice, cognitive psychology and neuroscience contributions will be addressed in detail. With better awareness of what we know and what we don’t know, it is hoped we can move the research forward to develop better financial decision making practices in the future.
RULES OF THUMB/HEURISTICS PARADIGM

If we go back to the time before the development of financial theory post World War II, financial decision making was heavily influenced by rules of thumb or heuristics, as depicted in Figure 2. These dominated decision making theory for about 20 years.

FIGURE 2
RULES OF THUMB/HEURISTICS PARADIGM LIFE CYCLE

Rules of thumb/heuristics are simply mental shortcuts. Gigerenzer and Wolfgang (2011) provide a definition of heuristics for the purposes of this paper: “A heuristic is a strategy that ignores part of the information, with the goal of making decisions more quickly, frugally, and/or accurately than more complex methods” (p. 454). Thus, heuristics do not attempt to find the optimal solution but one that is best given the context and constraints faced by the decision maker. The case against heuristics is that because heuristics are using mental shortcuts, they are inferior to more comprehensive approaches.

Certainly, using heuristics is not the best approach in every case, but when applied appropriately, they represent the best a decision maker can do in specific situations given the tradeoff between time available to make a decision, uncertainty, and the cost of getting better information. In a situation where there is little uncertainty, adequate information, and sufficient time to process data, it may be possible to do better than employing a heuristic that uses a mental shortcut. However, as uncertainty increases, the time to make a decision becomes constrained, and the quality declines of the information that supports analysis, a heuristic may perform better than a more complex, data-driven approach. The nature of this set of tradeoffs was formalized by Simon (1957) with the term “bounded rationality.” Bounded rationality refers to the fact that the ability of a decision maker to take as much time as needed to make an optimal decision is constrained by the quantity and quality of information available and the time available to make the decision. The overall constraint is the human mind’s cognitive limitations in the pursuit of an optimal rather than satisfying (best decision, given the circumstances) decision.

Before the 1950s, finance was considered a proto-science (Jovanovic, 2008), a discipline without a robust theoretical framework. As a proto-science, financial decision making was driven by experience, available data, and simple analytical procedures developed to organize and process data for the decision maker to consider. In situations where there is good quality data and a validated analytical process, basic statistics and business condition indicators can be used effectively to judge the condition of a firm or an investment candidate. An example is the DuPont Model developed by Alfred Sloan in the 1920s for analyzing an entity’s profitability as a function of asset turnover and profit margin, as a means to direct management’s attention to those areas in the firm that require better oversight and management.

In another example, if we consider a situation where a decision maker needs to select between 3 capital investments, where there is a high degree of uncertainty and there is no theory describing how data associated with the investments can be processed to rank the investments, shortcuts based on experience may be the best approach. A popular heuristic going back to the 1800s for making the capital investment decision is the payback criterion. The investor makes the investment based on how quickly the investment can be recovered by future cash flows. If the criterion is to invest only when the investment can be recovered in three years, then any investment with a payback period beyond three years is foregone. If there are multiple investment opportunities available to achieve a goal, then the investor should select the
investment that pays back the quickest, as long it meets the minimum payback period requirement. This heuristic has stood the test of time and is still used as one method to select capital investments. Another heuristic for deciding how to allocate SX to multiple approved independent investment opportunities is to use the 1/N heuristic. For example, if there are three investments, then the investor allocates one-third of available funding to each. This heuristic is employed frequently when individuals allocate their 401K retirement funds among various investment options.

Perhaps the most well-known heuristic is the Pareto principle, referred to as the 80/20 principle, or focus on the “vital few rather than the trivial many”. The basis for the principle was Pareto’s (1906) research pointing out that in Italy approximately 80% of the country’s income was earned by 20% of its population. The terms “Pareto principle” and “vital few and trivial many” were popularized by Juran (1954) based on his work in the 1940s applying the findings of Pareto to many areas of management, including finance. For example, capital investment programs appear to obey this principle, with a small percentage of projects accounting for a major portion of problems such as cost overruns and schedule slippages. Thus, a manager should focus on the 20% of the projects accounting for 80% of the associated problems.

Recent research has identified a number of additional heuristics used in general and financial decision making, such as those listed in Table 1(Gigerenzer & Wolfgang, 2011).

### TABLE 1
**ADDITIONAL HEURISTICS**

<table>
<thead>
<tr>
<th>Heuristic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognition</td>
<td>If one of two alternatives is recognized and the other is not, then infer that the recognized alternative has the higher value with respect to the criterion</td>
</tr>
<tr>
<td>Fluency</td>
<td>If both alternatives are recognized but one is recognized faster, then this alternative is assumed to have higher value based on the criterion</td>
</tr>
<tr>
<td>Take-the-First</td>
<td>Choose the first alternative that comes to mind</td>
</tr>
<tr>
<td>Take-the-Best</td>
<td>Compare existing models and choose the best to copy</td>
</tr>
<tr>
<td>Fast &amp; Frugal Trees</td>
<td>These are basically checklists rather than complex statistical techniques</td>
</tr>
</tbody>
</table>

In sum, there are many heuristics (only a sampling has been discussed here) developed for different decision-making situations. In some cases, they are efficient and effective and have stood the test of time. In other instances, they have been relied upon due to poor judgments driven by emotions or mistakes in judging the nature of the tradeoff between urgency and uncertainty, and the availability of additional decision-making tools.

Heuristics are alive and well in both modern general management and financial decision making, as shown in some of the examples above. What we know about heuristics and how they are employed has changed markedly, primarily due to advances in knowledge about decision making behavior. The effective use of heuristics depends on a combination of factors: the experience of the decision maker, his or her awareness of the strengths and weaknesses of the heuristic, and the decision making context. For example, if time constraints are not an issue and there is sufficient time to gather additional information and apply decision making tools, then the justification for use of a heuristic is weak. Alternatively, if there is a high degree of uncertainty, a large amount of ambiguous information, and an urgency to make a decision, then informed use of a heuristic may be the best approach. A danger for modern decision makers is the availability of too much information, where the cognitive limitations associated with bounded rationality and a time constraint can lead to either “analysis paralysis” or improper reliance on quantitative analysis that is overly complex and insufficiently transparent. The use of heuristics and the timing of their use are closely related to the concept of intuition and the effects of emotions, which will be discussed in the neuroscience and unconscious sections of the paper.
RATIONAL BEING/THEORY PARADIGM

The period from the 1940s through the 1960s saw the development of most modern finance theory in the areas of asset, portfolio, and contingent claims pricing, along with capital structure and dividend policy theory. These theories together comprise a paradigm of financial decision making theory termed Rational Being, whose prominence peaked in about 1969, as indicated in Figure 3.

FIGURE 3
RATIONAL BEING/THEORY PARADIGM LIFE CYCLE

Development of this body of theory was based on the use of sophisticated techniques such as quadratic programming and concepts from classical economics. This was a significant departure from pre-1940s when observed behaviors in the market served as the basis of investment and trading principles.

This golden age of theoretical finance was ushered in with the theory of expected utility (Von Neumann & Morgenstern, 1944) with its assumptions of the rational decision maker, which included:

1. **Completeness**: People can ran-order all choices/alternatives (revealed preferences)
2. **Transitivity**: If alternative B is preferred to alternative A, and alternative C is preferred to alternative B, then alternative C is preferred to A.
3. **Continuity**: When an individual prefers A to B and B to C, then there should be a feasible combination of A and C in which the individual is then indifferent between this combination and alternative B.

Expected utility theory postulates that individuals act rationally and in accordance with these three assumptions laid out by Von Neumann and Morgenstern. Given these conditions, the expected utility curve reflecting how individuals make choices takes the form shown in Figure 4.
Note that the preferences for a (rational) risk-averse individual would be traced out as a concave curve and be represented by:

**Risk-Averse Decision Maker:**  \[ U(EP=3000) > U(P) \] or \[ U(3000) > U (.50*1000 + .50*50000) \]

In other words, the utility of the expected prospect/gamble \([U(EP=3000)]\) is greater than the utility of the gamble \([U(P)]\). The point on the curve where expected utility (EU) intersects the curve is the point where the individual is indifferent between that amount earned for certain and a gamble that pays either $1,000 or $5,000, each with a probability of .50. Note that this amount is less than the expected value of $3,000 because the individual is risk-averse.

This framework for individual decision making served as a basis for modern portfolio theory developed by Markowitz (1952, 1959), the theory of capital structure and dividends (Modigliani & Miller, 1958; 1963; Miller & Modigliani, 1961), The Efficient Markets Hypothesis (EMH; Fama, 1965), The Capital Asset Pricing Model (CAPM; Sharpe, 1964), the Black-Scholes Option Pricing Models (Black & Scholes, 1973), and numerous extensions of these efforts by other researchers.

The relationship between heuristics (plus analytical techniques such as the DuPont Model) and the rise of financial theory can be credited with the evolution of finance from a proto-science to a discipline with an underlying theoretical framework. It brought a structure to financial decision making that lessened the reliance on the use of heuristics. As a result, academics flocked to the new discipline, extending additions to theory and identifying applications. Heuristics still occupied an important role in real world decision making, especially with the work of Simon (1957) formalizing a decision making model with the concept of bounded rationality. One of the best-known instances of the persistence of certain heuristics is that of Harry Markowitz, the founder of modern portfolio theory, in his 1990 speech accepting the 1990 Nobel Prize in Economics. While his theory implies that all investors should determine the weight of assets by choosing a portfolio on the efficient frontier, he indicated that he simply used the 1/N rule, where \(N\) is the number of investment choices, to allocate his funds in his retirement account.

Financial theory was met by great enthusiasm and continued to build momentum through the 1960s; however, it did have its critics. Numerous exceptions to theory, especially to the EMH and the CAPM, were identified by researchers and practitioners. Given the strong assumptions required by the theories,
criticisms could be expected, but the volume and degree of deviations from how individuals were “supposed” to make financial decisions and how asset prices were “supposed” to act grew to a crescendo by 1970.

COGNITIVE PSYCHOLOGY/BEHAVIORAL FINANCE PARADIGM

The search was on for a new financial decision making paradigm as the failures of theory to adequately answer growing challenges to its validity continued to mount. The paradigm that began to emerge (Figure 5) drew on cognitive psychology.

An article appearing in a 1972 *Journal of Finance* paper (Slovic, 1972) began by quoting Smith (1968):

*You are—face it—a bunch of emotions, prejudices, and twitches, and this is all very well as long as you know it. Successful speculators do not necessarily have a complete portrait of themselves, warts and all, in their own minds, but they do have the ability to stop abruptly when their own intuition and what is happening Out There are suddenly out of kilter…..If you don't know who you are, this is an expensive place to find out.* (p. 779)

The main point made by Slovic is that the development of financial theory (describing how people should make financial decisions) made no provision for human emotions, which are important drivers in how people actually behave. His paper reinforced the challenges posed by the identified anomalies to the Rational Being theory described above. In cognitive psychology, experiments were being performed to explain some of the deviations from theory.

The incorporation of the findings of cognitive psychology into the body of financial knowledge has given rise to a branch of finance known as behavioral finance. Although the contributions to financial decision making by cognitive psychology responded to a number of the criticisms leveled at the normative behavior prescribed by financial theory, “behavioral finance” has also proven to be a contentious concept within the academic community. In general, critics concede that individuals can be irrational at times but maintain that, in the aggregate, such errors will cancel out and the market will be efficient due to arbitraging (otherwise known as “the law of one price”). Those academics and practitioners who favor behavioral finance maintain that there is a systematic deviation from theory in decision making behavior and argue that this can lead to violations to the Efficient Markets Hypothesis, as well as to serious errors at the level of the individual decision maker.

In experiments, researchers Daniel Kahneman and Amos Tversky (1972) observed how people behaved when offered various choices/gambles. They identified situations where people systematically behaved inconsistently with the rational models of economic/financial theory. This resonated with a number of academics and practitioners and stimulated the development of Prospect Theory (Tversky & Kahneman, 1973, 1974, 1981; Kahneman & Tversky, 1979; Kahneman, Slovic, & Tversky, 1982). These behavioral inconsistencies can be sorted into three categories: biases, heuristics, and framing effects.

Biases are the predispositions to commit specific types of errors, as summarized in Table 2.
TABLE 2
BIASES

<table>
<thead>
<tr>
<th>Bias</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive Optimism</td>
<td>When people overestimate how frequently they will experience favorable outcomes and underestimate how frequently they will experience unfavorable outcomes</td>
</tr>
<tr>
<td>Overconfidence</td>
<td>When people make mistakes more frequently than they believe and view themselves as better than average</td>
</tr>
<tr>
<td>Confirmation</td>
<td>When people attach too much importance to information that supports their views relative to information that runs counter to their view</td>
</tr>
<tr>
<td>Illusion of Control</td>
<td>When people overestimate the extent to which they can control outcomes</td>
</tr>
<tr>
<td>Hindsight</td>
<td>When subjects, after learning the eventual outcome, give a much higher estimate for the predictability of that outcome than subjects who predict the outcome without advance knowledge</td>
</tr>
<tr>
<td>Conservatism</td>
<td>Manifests as an attachment to past analyses, practices, beliefs, and commitments even when they start to prove erroneous, counterproductive, even unsustainable</td>
</tr>
</tbody>
</table>

As discussed earlier in this paper, the use of heuristics, when properly aligned to the situation, can be the best approach. However, when the decision context is misjudged based on the situation (uncertainty, limited availability of information, urgency) and on emotions, such simplifying shortcuts are subject to serious errors. Four heuristics categories are described in Table 3.

TABLE 3
HEURISTICS

<table>
<thead>
<tr>
<th>Heuristic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Representativeness</td>
<td>When people try to determine the probability that a data set A was generated by a model B, or that an object A belongs to class B, i.e., they evaluate the probability by the degree to which A reflects the essential characteristics of B</td>
</tr>
<tr>
<td>Availability</td>
<td>When people rely on information that is readily available and intuitive relative to information that is less salient and more abstract</td>
</tr>
<tr>
<td>Anchoring</td>
<td>When people form an estimate by beginning with an initial number and adjusting to reflect new information or circumstances; however, they tend to make insufficient adjustments relative to that number, thereby leading to anchoring bias</td>
</tr>
<tr>
<td>Affect</td>
<td>When people base their decisions primarily on intuition, instinct, and gut feeling</td>
</tr>
</tbody>
</table>

Typical of many of the behavioral findings from cognitive psychology, a decision making approach might have multiple characteristics that support classification in more than one scheme—say, as a bias by one researcher versus as a heuristic by another. Thus, no common classification scheme has been universally adopted in the literature. Researchers look at biases and heuristics with different perspectives and classify these financial decision making behaviors as biases or heuristics without common criteria. On the one hand, this lack of a standard has contributed to fragmentation and some confusion and has made the convergence to a common theory or paradigm less likely. However, this variability in classifications indicates that many of the observed behaviors may have a common source.
Framing effects in decision situations arise when different imagery and descriptions of the same problem highlight different aspects of the outcomes. Table 4 lists several examples.

### TABLE 4
**FRAMING EFFECTS**

<table>
<thead>
<tr>
<th>Framing Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass Half Empty/Half Full</td>
<td>Preference for an option depends upon whether choices are couched in terms of probabilities of success or failure</td>
</tr>
<tr>
<td>Aversion to a Sure Loss</td>
<td>When subjected to a loss from a starting endowment, there is a tendency to hold the investment/project until break even, irrespective of whether the outlook is positive or negative for future performance</td>
</tr>
<tr>
<td>Mental Accounting</td>
<td>The mental account associated with the decision to accept a gamble includes money won or lost in that gamble and excludes other assets or the outcome of previous gambles</td>
</tr>
</tbody>
</table>

Research conducted to explain the formation and bursting of financial “bubbles” provides strong support for the position that humans are motivated to follow the herd in circumstances where emotions run high or where there are perceived risks/costs with deviating from the path being taken by most. Markets have been observed to reach extremes at times due to the herding behavior by sizable numbers of individuals. For example, the 1929 and 2000 stock market crashes after huge rises cannot be explained by the EMH. Parker & Prechter (2007) analyze a number of these bubbles and crashes and conclude that cycles of optimism and pessimism feed on each other, resulting in extreme levels of optimism and eventual reverses in asset prices. When the optimism has run its course and asset prices decline, it appears that virtually all investors reset their expectations, becoming pessimistic, and asset prices crash as extreme price declines are realized. Olsen (1996) observes a different form of herding in analysts’ projections of future prospects for firms. They tend to follow the crowd as a means of protecting themselves from being wrong and from damages to their reputation (if they are wrong, then so was the majority).

In standard finance theory, comparing alternative choices requires discounting expected future benefits back to the present at the required rate of return (or the return required to delay consumption to a future date) so that choices are made on a common basis (Samuelson, 1937). For example, the 1929 and 2000 stock market crashes after huge rises cannot be explained by the EMH. Parker & Prechter (2007) analyze a number of these bubbles and crashes and conclude that cycles of optimism and pessimism feed on each other, resulting in extreme levels of optimism and eventual reverses in asset prices. When the optimism has run its course and asset prices decline, it appears that virtually all investors reset their expectations, becoming pessimistic, and asset prices crash as extreme price declines are realized. Olsen (1996) observes a different form of herding in analysts’ projections of future prospects for firms. They tend to follow the crowd as a means of protecting themselves from being wrong and from damages to their reputation (if they are wrong, then so was the majority).

In standard finance theory, comparing alternative choices requires discounting expected future benefits back to the present at the required rate of return (or the return required to delay consumption to a future date) so that choices are made on a common basis (Samuelson, 1937). For example, savers may require a return on their money in a savings account of 3% annually as a requirement to save for future consumption and not spend in the present. A key finding from cognitive psychology is that humans deviate from the theory that dictates that the rate of time preference or discount rate is constant, by employing hyperbolic discounting in deciding whether to take rewards sooner rather than later. People tend to overweight the preference for immediate consumption. Frederick et al. (2002) cite a large number of studies implying that most people apply short termism or hyperbolic discounting in choices between taking a reward now or waiting for a larger reward. For example, in experiments, if people were offered $100 right now or $110 a week from now, which would they choose? Most subjects chose to take $100 now. It didn’t seem worth it to wait for a week for only $10 more. On the other hand, if subjects were offered $100 a year from now or $110 a year and one week from now, most would wait the extra week and take the $110. These are equivalent choices in economic/finance theory, but people usually reverse their preferences and choose to wait an extra week for an extra $10 if the reward is delayed for a year. The further an event lies in the future, the less people care about it and the less it is affected by hyperbolic discounting. This propensity people have for short term rewards largely accounts for saving less and consuming more in the short term; it is one of the more serious problems faced in retirement planning. In corporate finance, such short termism accounts for over weighting self and corporate cash flow consumption in the near term and not making sufficient capital available for longer term investments. Unfortunately, incentives in executive compensation plans have tended to reinforce short termism or hyperbolic discounting instead of better aligning incentives and behavior with the welfare of shareholders, customers, and society in general.
As the graphic at the beginning of this section shows, the initial publications by Kahneman, Slovic, & Tversky attracted a great deal of interest and evolved into the related field of study termed behavioral finance. A diverse group of individuals from academia, psychology, corporate finance, investing, and financial advising have provided contributions to and have become stakeholders in the research and application of this new knowledge. This has been both positive and negative. The multiple perspectives have served an integrating function in helping to better understand complex human behavior. On the down side, the lack of a standard taxonomy in financial decision/behavioral errors has detracted from overall coherence. More importantly, there is no comprehensive theory or paradigm to explain and predict human decision making behaviors on a consistent basis; many “errors” have only been obvious in retrospect. In addition, new knowledge development in this field has followed the standard growth curve: initial strong advances, growth, and finally maturity and declining growth. The focus in the now mature stage of behavioral finance is in identifying new areas where this knowledge can be applied, such as executive compensation and incentive contracts, planning and investing for retirement, and the avoidance of serious mistakes in selecting corporate capital investments.

NEUROSCIENCE PARADIGM

Neuroscience has had a substantive impact on the study of financial decision making behavior since the mid-1980s, as shown in Figure 7.

![FIGURE 7](image_url)

Neuroscience Paradigm Life Cycle

Experimenters using various techniques from neuroscience are able to stimulate specific areas of the brain and then observe behavior in financial decision making tasks. Electrical signals are used in Transcranial Magnetic Stimulation (TMS) and Transcranial Direct Current Stimulation (tDCS) (Charron, Fuchs, & Oullier, 2008). Both TMS and tDCS have the ability to control the location and duration of the stimulus applied to the brain. These techniques use electrical current applied to a subject's cortex that disrupts the functioning of and communication between neurons. By correlating the location of the disruption to behavior, researchers form an assessment of that region’s role in decision making.

Positron Emission Tomography (PET) using a radioactive tracer injected into the bloodstream has been in use since the 1950s to study brain function (Charron et al., 2008). Using PET, the researcher injects a radioactive tracer in the bloodstream of a subject prior to the beginning of an experiment, and the subject is placed into a cyclotron. The objective is to measure the concentration of this marker in the brain. When a brain area is active, more blood is required to carry oxygen to the area where the active cells are located. The injected tracer emits a positron that collides with its anti-particle, an electron, leading to a pair of photons of high energy that fly away in opposite directions and are detected by the PET scanner (Charron et al., 2008). An example of its use was by Zald et al. (2004) to study brain reactions for revenge in the trust game.

An important disadvantage of the TMS, tDCS, and PET approaches is that they are invasive, and therefore, they potentially corrupt observed behaviors related to financial decision making tasks in experimental situations. In addition, they do not show the detail in brain reactions that functional magnetic resonance imaging (fMRI) can. The fMRI is a noninvasive way to study in detail the brain’s reactions to various situations within financial decision making experiments.
An fMRI scanner (Figure 8) applies a strong magnetic field to the subject and records the variations of the magnetic field caused by an increase in blood flowing to the brain. The change in this signal between an area that is active compared to the same area when it is not active is what the fMRI records in its brain images (Charron et al., 2008). It is important to note that these recorded changes in the brain are indirect indications of how the brain reacts to various financial decision making scenarios in experiments. The basic reactions are described in Figure 9 and below.

Source: http://thisisyourbrainon.wordpress.com/
In describing the following changes in the brain when exposed to various decision making situations and their emotional content, some liberty has been taken to simplify very complex processes that are still not well understood. Based on current knowledge, the human brain and its functions can be explained in terms of three major regions. The base of the brain, known as the *midbrain*, is the most ancient component and is located on top of the brain stem. It is part of the central nervous system and involved with hearing, motor control, vision, and body temperature regulation, and is estimated be around 250 million years old (equivalent to lizards and snakes). As life on Earth evolved, the *limbic system* developed. Located above the midbrain, it is the center of emotions and is estimated to be as old as 170 million years (equivalent to dogs). As a higher-level component of brain physiology, emotions are necessary to initiate action. The third part of the brain, what in its developed state makes us human, is the *prefrontal lobe/cortex* of the cerebrum lying around and on top of the limbic system. It is estimated to be about 40 million years old, though modern human behaviors, such as tool making, are not evident until around 80,000 years ago.

With fMRI, researchers can observe what happens in the brain as emotions signal that action is needed. The scanner uses radio waves and a strong magnetic field to make images of the brain that show brain activity. Neural activity causes changes in the need for oxygen, which causes changes in blood flow. Differences in the magnetic properties arising from hemoglobin in the blood when it is oxygenated, compared to when it is depleted of oxygen, result in magnetic fluctuations that are recorded by the fMRI.

As indicated earlier, as the center of human emotion, the limbic system initiates positive and negative emotions and communicates these to the prefrontal lobe of the cerebrum. In the limbic system, the *amygdala* is a key component of the loss avoidance circuit of the brain; it sets off the alarm for action in the face of threats and danger. In an emergency these strong impulses can generate an automatic response. For example, when faced with an imminent danger, the amygdala may impel the body to take actions without involving conscious thought. Early in human evolution, having an amygdala to quickly initiate action to avoid danger was necessary to survival. In humans’ evolved state today, the amygdala still exerts strong forces on behavior. Experiments show that the amygdala is also stimulated when individuals make a risk-free choice (Peterson, 2007a).

The prefrontal lobe of the cerebrum is the executive manager that interprets impulses from the limbic system and makes conscious decisions on how to act. For example, when someone anticipates a loss or feels fear, the loss circuit in the limbic system lights up on the fMRI; when a gain (or pleasure) is anticipated, the reward (gain) circuit in the limbic system lights up (Bozarth, 1994). These emotions are communicated to the frontal lobes, where the emotions are interpreted, an evaluation process is conducted, and a decision is made.

The nucleus accumbens (NAcc) in the limbic system is the counter to the amygdala; it transmits excitement, anticipation, and pleasant sensations to the prefrontal lobe (Kuhnen & Knutson, 2005). Dopamine, a neurotransmitter, plays a key role in stimulating the NAcc by generating an intense feeling of excitement or anticipation; thereby facilitating motivations being turned into decisions and decisions into action. A study by Knutson, Adams, Fong, & Hommer (2001) found that NAcc activation represents gain prediction, while anterior amygdala/insula activation represents loss prediction (Paulus, Rogalsky, Simmons, Feinstein, & Stein, 2003). The nucleus accumbens also experiences increased blood flow when an individual is making a risky choice (Peterson, 2007a). Functional MRI experiments have shown how the NAcc reacts to dopamine in differing situations involving anticipated gains:

- Unanticipated gain – Strong reaction and feeling of pleasure in the gain circuit transmitted to the prefrontal cortex
- Gain equal to anticipated gain – Small or no reaction in the gain circuit
- Gain less than anticipated – Activity in the loss circuit of the limbic system, particularly the anterior insula

These findings provide some supporting explanation for evidence of momentum in stock prices and the forming and bursting of bubbles. During the forming of a bubble, the primary dynamic consists of a series of gains that exceed expectations, generating excitement and a continued rise in the asset price. As gains become more expected, the dopamine release is less in participants, and the activity in the gains...
circuit declines, signifying the top of the bubble. The bubble bursts when dopamine no longer has an effect on the gain circuit/NAcc, and fear takes over as the loss circuit becomes active and a great mass of individuals seek to exit the asset at once.

The results indicate that anticipatory neural activation contributes to rational choice but may also promote irrational choice. Thus, financial decision making requires recruiting distinct anticipatory mechanisms for taking or avoiding risks, while remembering that excessive activation of one mechanism or the other may lead to mistakes. Overall, these findings suggest that risk-seeking choices (such as gambling at a casino) and risk-averse choices (such as buying insurance) may be driven by two distinct neural mechanisms involving the nucleus accumbens (NAcc) and the amygdala. Observed voluntary behaviors, such as financial decision making, are the result of the interactions of the limbic system (demanding action) with the frontal lobes of the cerebrum (evaluating and deciding). Observed outcomes in the form of financial decision making represent how the limbic system is working with the prefrontal lobes.

Neuroscience has helped to clarify and provide a physiological basis for the hypotheses and findings from cognitive psychology published for the past three decades. When the balance in a decision making context favors emotions, an individual is more prone to making mistakes. Biases, (bad) heuristics, and being subject to framing-effect errors are more likely in these circumstances. This finding is a major step forward in developing approaches for improving financial decision making. By educating individuals in the role of emotions and the importance of balancing the influences of the critical parts of the brain, it should be possible to get closer to realizing the goal of financial theory to use accumulated knowledge to improve financial decision making across the board. Jason Zweig (2007) spent a year with neuroscientists, participating in experiments and interpreting the information contained in many images from fMRI experiments. His conclusion is that people need first to know themselves, how naturally impulsive they are, what biases and heuristics they tend to employ, etc. As a result of his financial decision making experience in the field and time spent with neuroscientists, Zweig offers a series of suggestions to help build emotional intelligence and avoid bad decisions. Examples are to take a time out, step outside yourself, write yourself a policy, and so forth.

These Zweig “rules” are largely meant to help control the effect of emotions so that the different parts of the brain can work together in making the best decisions. Emotions are critical in alerting humans to situations that require action in the form of decisions, but the decisions should ideally reflect rational evaluation instead of relying too much on emotional content, which can lead to making serious mistakes. Zeelenberg, Nelissen, Breugelmans, & Pieters (2008) point out that there is no clear consensus among researchers on what emotions are. They propose that emotions are the initiators of action, similar to the affect heuristic of Slovic, Finucane, Peters, & MacGregor (2002), though they go beyond describing emotions as confined to positive or negative, pleasant or unpleasant (Solomon & Stone, 2002). For example, emotional states may be classified as regret, fear, excitement, pleasure, envy, angry, pride, love, shame, guilt, etc. Pfister and Böhm (2008) expand on the diversity of emotions by defining three functions, two of which relate directly to decision making:

1. Speed - Emotions push people toward making timely decisions.
2. Relevance/Focus - Emotions help people focus on what is most important in the context of a decision making situation.
3. Commitment/Moral Sentiment - Emotions have physical effects on the human body that reflect trust, guilt, love, etc.

Learning more about emotions and their effects on financial decision making behavior is a major challenge for future research in neuroscience.

THE UNCONSCIOUS PARADIGM

The emerging Unconscious paradigm promises to be the dominant financial decision making paradigm of the near future (Figure 10).
An important recent paper by Mercier & Sperber (2011) argues that what researchers have labeled as biases and heuristics may be more accurately captured as a general unconscious “confirmation” bias. Overconfidence, excessive optimism, hindsight bias, availability, representativeness, etc., in this context all are considered to have an unconscious anthropological origin. Being outside the sphere of consciousness as the source accounts for their systematic occurrence, even when the subject is aware of the bias and reflects it in behavior anyway. The Mercier & Sperber theory has obvious tie-ins with neuroscience and cognitive psychology research, providing support for a more comprehensive approach to describing financial decision making. They rely on psychological research showing that people consistently fail in arguing logically (Evans, 2002), consistently exhibit biased reasoning (Kahneman, et al., 1982), and consistently make serious mistakes in estimating probabilities (Kahneman & Tversky, 1972; Tversky & Kahneman, 1983). Their conclusion is that there is something innate in humans at the unconscious level that serves as the source of this behavior. A general confirmation bias is portrayed as an evolutionary human adaption for communicating effectively in a group environment. This is consistent with anthropological conclusions about human brain development, that early humans were primarily motivated to develop survival strategies and that having a confirmation bias provided an effective framework for successfully communicating within their groups. Gaining access to resources and avoiding danger were high priorities for survival, and being able to agree to a baseline goal was critical to being a successful member of the group. As the human race evolved and basic survival became less of a concern, other goals became important. However, the reasoning supporting these goals (e.g., objectivity, seeking the truth, persuading) is anchored by this internalized, unconscious confirmation bias.

Cheng (2010) describes unconscious thought as “… thought without attention, or with attention directed elsewhere” (p. 94). In the model he proposes, conscious thought is affected by a capacity constraint, whereas the unconscious has no such constraint. With no capacity constraint, improved judgment and decision making are possible through better organization of information in memory, implying that creativity is largely a product of the unconscious due to its greater capacity and the many unconscious “programs” at work in the mind. When very creative people are asked how they rationally achieved a great discovery, a typical response is that it just came to them without conscious thought. Cheng concludes his analysis by proposing a transcendent model for financial decision making where the total cognitive capacity of an individual consists of a conscious and an unconscious component. It is an interactive model where each component has its own coefficient signifying the relative importance of the conscious and unconscious in this interactive relationship. Given the differences between individual cognitive capacities, each person would have his or her own unique values to solve the model. Finding ways to test this model is one of the challenges for future researchers.

In Incognito: The Secret Lives of the Brain, Eagleman (2011) comments on the status of neuroscience and what it can currently tell us about the role of brain function in driving human behavior in response to expected losses and gains in decision making. As discussed earlier, fMRI brain imaging has been very helpful in showing how changes in the brain correlate to expected gain or loss before decisions are made; however, observations are indirect, and therefore, interpretations are not unambiguous. While the images for two subjects in similar experimental settings may be very similar, the behavior of the subjects may be quite different. Given any specific brain image, observed decision making behavior may occur along a
broad spectrum that ranges from one subject making a snap decision ruled by emotion and a reliance on heuristics, to another subject being stuck in an analysis-paralysis mode due to relying exclusively on the prefrontal lobes to come to a decision. This doesn’t mean that brain imaging is useless, but it does demonstrate that behavior is mediated by a number of variables that cannot be sorted out by relying too heavily on the current status of fMRI imaging. In addition, recent research from brain imaging shows that the brain is very active before there is conscious awareness. As an extreme example, in an emergency situation the brain may react and stimulate danger avoidance action without any awareness, except after the fact. In addition to such automatic action, unconscious behavior can arise from internalized experience and knowledge that the individual is not consciously aware of (long term storage), repressed memories, internalized cultural behaviorisms, and inherited instincts, along with the unconscious “software” running the many programs controlling the body systems.

Increasing our understanding of the interactions of affect and/or emotion with intuition and the use of heuristics is critical to developing an improved and instructive financial decision making paradigm. Despite a good deal of research along these lines, there is still much we do not know about these relationships. There is also some ambiguity about the nature of both affect/emotion and intuition. For example, a branch of intuition research differentiates so-called “system 1” from “system 2” intuition (Kahneman, 2002). System 1 is composed of reactions that are heuristic, automatic/fast, associative, effortless, and difficult to control. System 2 processes are rational, cognitive, and more deliberately controlled. If we relate this taxonomy to neuroscience, system 2 is centered in the prefrontal cortex, the conscious, analytical, decision making part of the brain. System 1 lies outside our conscious awareness, in the unconscious.

An alternative description of intuition is the concept of fringe consciousness (Norman & Price, 2008). In this framework, intuition lies on a continuous spectrum from totally conscious to totally unconscious. In fringe consciousness, intuitive feelings provide an interface connection between the conscious and the unconscious. Norman (2010) also reviews the research attempting to define more clearly the domain of the conscious versus the unconscious. Her conclusion is that experiments demonstrate that there are gradations from unconsciousness to consciousness, which supports the idea of fringe consciousness. To clarify the true nature of intuition, we must learn much more about the unconscious; the path to this knowledge most likely will be revealed by further advances in neuroscience and cognitive psychology.

The conclusion from neuroscience and cognitive psychology research is that as much as 80-90% of our behavior has its origins in the unconscious (Eagleman, 2011). This represents the next frontier in gaining knowledge of how decision making behavior is formulated.

CONCLUSION

Advances in our understanding of financial decision making practices are evident when we examine the accumulation of knowledge over the past 100 years. We have gone through various phases of learning more about how people should and do make financial decisions. The transitions from one phase of knowledge development to another have not been seamless, nor has a single paradigm ever been totally dominant. Over 100 years ago, when simple analytics and heuristics dominated, there were small influences from theory, psychology, and brain science. Over time the then-current dominant paradigm has attracted criticisms for not being able to correct deficiencies in financial decision making behaviors. What was once a minor contributor, such as financial theory, then attracts attention as a new paradigm that appears to improve decision making knowledge systems. There may be “ah-ha” moments, such as elicited by the expected utility theory by Von Neuman and Morgenstern or the Prospect Theory by Kahneman & Tversky, that spark attention and attract researchers to a new emerging paradigm. Each distinct paradigm goes through the cycle of intense interest with a flurry of research, maturity and applications, and finally of decline when a new source of knowledge emerges. The new paradigm may derive from an “old” source simply biding its time as a minor contributor until there is a perceived major breakthrough. For example, the emerging paradigm, the unconscious, goes all the way back to Freud. Systematic exploration of the unconscious was not ready to make a major contribution to financial decision making theory until the
modern work in cognitive psychology and neuroscience laid the groundwork for stimulating new research.

Considering the breadth of accumulated knowledge and experience, one might conclude that financial decision making is now more science than art. Looking at the record of the recent past however, we see pervasively poor corporate financial decision making and individual investment retirement planning. In spite of what we have learned over the past century, we have become more aware than ever of what we do not know, or at least how to effectively apply what we do know. Research and experimentation in cognitive psychology and neuroscience over the past three decades point to unlocking the secrets of the unconscious as being the next important frontier in future advances in financial decision making knowledge. Decision makers should take this new field into account when making financial decisions. In addition, organizations should take the initiative to provide de-biasing training to its managers (financial and general management) as a means to improve the “emotional intelligence” of its members and reduce the risk of systematic errors in their decision making activities.

It is clear that this new paradigm will be highly multidisciplinary, where integration, synthesis, and the linking of emerging knowledge across many relevant fields will be required. Eagleman (2011) suggests that neuroscience will play a major role, as imaging and experimental tools become increasingly sophisticated and increasingly interdisciplinary approaches are employed to develop a more complete picture of human decision making. The medical field can also provide important contributions. Peterson (2007b) offers the possibilities of further medical experiments with brain chemicals (e.g., oxytocin, vasopressin, dopamine, and serotonin). The use of meditation, as implied by Cheng (2010), in a transcendental model, is an approach that deserves exploration. Finally, the fields of archeology, anthropology, sociology, and philosophy are demonstrating their potential to make important contributions to our knowledge of financial decision making and how to improve financial outcomes for individuals and organizations. Integration of these different perspectives is critical if we are to make significant advances in understanding and improving financial decision making.

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Using Relative Weights to Reanalyze Research on the Job Characteristics Model

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In this study, I re-analyze data from a meta-analysis of research on the job characteristics model (Hackman & Oldham, 1980), using relative weights analysis (Johnson, 2001). This analytic technique is particularly well-suited for analyses in which one wants to most accurately determine the proportion of explained variance in a dependent variable among several independent variables, while avoiding common problems with traditional regression analysis. Some of the results of this re-analysis run counter to the established predictions of the job characteristics model, indicating that this classic model of job design and intrinsic motivation could benefit from further research and rethinking.

INTRODUCTION

According to a framework developed by Reichers and Schneider (1990), a good deal of organizational behavior literature can be considered as being in the “consolidation and accommodation” stage of scientific inquiry, which occurs after stage 1- “introduction and elaboration”, in which new models are proposed and tested, and stage 2- “evaluation and augmentation”, in which models are subjected to scrutiny, tested against alternate models, and are expanded upon. In the “consolidation and accommodation” stage, there is a reduction in controversies and an agreement on definitions, antecedents and consequences. This is especially true of the Job Characteristic Model and other models of the motivational effects of job design, which began in earnest in the 1970’s and 1980’s. While this means that the basic tenets of job design have become established and codified into management practice, academic reviews and college textbooks, there is a danger that established areas of agreement are no longer questioned or critically reanalyzed. The goal of the present research is to critically reanalyze the research on the Job Characteristics Model using comprehensive meta-analytic data and a recently-developed statistical technique best suited towards this type of investigation. In this way, the continued validity of this foundational organizational behavior models can either be supported or called into question.

THE JOB CHARACTERISTICS MODEL

Hackman and Oldham’s (1975, 1976, 1980) Job Characteristics Model (JCM) is one of the most influential theories ever presented in the field of organizational behavior. It has served as the basis for scores of studies and job redesign interventions (over 750 citations, as found in a search of the PSYCinfo database) over the past three decades, and this research has been extensively reviewed (Fried & Ferris 1987; Loher, Noe, Moeller & Fitzgerald, 1985; Taber & Taylor, 1990). The majority of research has
supported the overall validity of the JCM, although critiques and modifications have been offered (Roberts & Glick, 1981; Salancik & Pfeffer, 1978), and the role of the CPS has been questioned (Boonzair & Ficker, 2001).

Specifically, the JCM proposes that the satisfaction and intrinsic motivation an employee feels at work is directly related to their experience of three critical psychological states (CPS) (i.e., experienced meaningfulness, experienced responsibility, and knowledge of results). In turn, these CPS can be elicited by five core job characteristics (CJC) (i.e., skill variety, task identity, task significance, autonomy, and feedback from the job itself). All of these relationships are hypothesized to be moderated by a personal characteristic known as growth need strength, which describes the extent to which one is looking for intrinsic rewards at work, as opposed to focusing solely on extrinsic rewards. It has often been described as a fully mediated model (Behson, Eddy & Lorenzet, 2000). This model is pictured in Figure 1.

**FIGURE 1**


Interestingly, an evaluation of the research that has been conducted on the JCM suggests that few researchers have tested the model the way in which it was originally proposed. The vast majority of studies have omitted the growth need strength moderator. Further, most studies using the JCM framework have omitted the CPS, and have instead investigated only the direct relationships between the CJC and a number of outcomes. (Renn & Vandenberg, 1995). This seems to have occurred despite no theoretical or practical rationale for this practice (Fried & Ferris, 1987; Hogan & Martel, 1987; Renn & Vandenberg, 1995). This consistent omission of the CPS from empirical investigations of the JCM could lead to erroneous predictions (Fox & Feldman, 1988).

Further, this lack of available data has prevented two of the three major meta-analytic reviews of the JCM from making definitive statements about the CPS. While Fried and Ferris (1987) included 76 studies in their meta-analysis of the JCM, they could find only eight studies that examined the entire JCM (i.e., including the CPS) and only three that tested the mediating effects of the CPS. Thus, Fried and Ferris (1987) were unable to make definitive conclusions as to the validity or importance of the CPS, although
they stated in their qualitative discussion that there was suggestive evidence that the CPS are critical to the model. The Loher et al. (1985) meta-analysis did not address the critical psychological states at all. Rather, it focused solely on the relationships between the CJC and satisfaction.

Behson, et al. (2000) conducted a meta-analysis including only studies that included all elements of the JCM and tested alternative models (i.e., the JCM with and without including the CPS) using their meta-analytic data as input to a structural equations modeling analysis (using a procedure described by Viswesvaran & Ones, 1995). They found evidence that the full JCM model explained more variance in the dependent variables and contained a greater percentage of statistically significant causal pathways than the abridged version of the JCM, but that the full model represented a poorer fit to the data. This supported the importance of utilizing the full JCM over partial models.

Further, all of the studies that have investigated the JCM (including Behson et al., 2000) have done so using correlational and regression techniques. However, due to the noted problems with using regression analysis to determine the relative strength of prediction among independent variables (Nunnaly & Bernstein, 1994), regression-based techniques (including factor analysis and structural equation modeling) do not represent the most appropriate analytic strategy for determining the amount of criterion variance that is uniquely attributable to each of the independent variables. Thus, to date, no research on the motivational approach to job design (and little research in organizational behavior generally) has used analytic strategies specifically constructed to validly test such hypotheses (see Behson, 2005, Budescu 1993, and Johnson, 2004, for details and examples).

Therefore, it remains unclear whether (a) each of the five core job characteristics make a unique contribution to the explained variance in the three critical psychological states, (b) each of the three CPS make a unique contribution to the explained variance in the three most commonly studied important dependent variables (job satisfaction, satisfaction with growth opportunities, and intrinsic motivation), or (c) if each of the five CJC make a unique contribution to the explained variance in the three dependent variables. In this paper, I use Johnson’s (2000) Relative Weight procedure to provide a statistical test of these research questions, using the comprehensive meta-analytic results of Behson, et al. (2000) as my data set.

While I do not offer formal hypotheses for this study, the preponderance of the research on the JCM suggests that:

- Skill variety, task identity and task significance should be the primary predictors of experienced meaningfulness
- Autonomy should be the primary predictor of experienced responsibility
- Feedback should be the primary predictor of knowledge of results
- All CPS should be related to the three outcome measures, but with no particular predictions of relative weight
- All CJC should be related to the three outcome measures, with no particular predictions of relative weight. However, the CJC should not be as predictive of outcomes as are the CPS

These predictions are made knowing that, in the past, they have only been tested largely by comparing correlation coefficients or regression-based analyses, which, as will be explained in more detail in the methods section, are prone to bias and, therefore, not the most appropriate analytic strategies for testing such hypotheses. The current study uses Johnson’s (2000) relative weights analysis (RWA) procedure to provide the first test of organizational justice using the most appropriate technique for explaining the unique contribution to $R^2$ among multiple independent variables.

**METHOD**

**Dataset and Measures**

The Behson, et al. (2000) meta-analysis was chosen for this study because it is the most comprehensive recent quantitative review of the JCM. It includes thirteen independent studies that each contained information regarding the full JCM model and reported correlations between CPS and CJC
and/or outcome measures. By comparison, while Friend and Ferris (1987) and Loher et al. (1985) included more studies, they did not contain as many studies that examined the entire JCM. Further, because Behson, et al. (2000) used their meta-analytic results as input into a structural equation model (Viswesvaran & Ones, 1995), their results provide an excellent opportunity to compare the results of the relative weight procedure against those derived from less appropriate regression analyses. Finally, every study contained in the meta-analysis used the Job Diagnostic Survey developed by Hackman and Oldham (1975) to measure all variables in the model. As a result, this meta-analysis did not encounter the potential confound of combining various operationalizations into a single metric. Further, the use of the full Job Diagnostic Survey for all the included studies eliminates the potential problem of having different structural relationships being determined by vastly different sample sizes (Viswesvaran & Ones, 1995). The articles included in this meta-analysis are included in the references of this article, as indicated with asterisks. Please see the original article for a thorough treatment of their analytic methods.

**Analytic Strategy**

Traditional multiple regression maximizes prediction of a dependent variable by assigning weights to predictors in such a way that the sum of squares attributable to error is minimized (Nunnaly & Bernstein, 1994). However, multiple regression does a poor job in sorting out the relative importance of different predictors, especially in the presence of multicollinearity (Johnson, 2000). Hierarchical regression is the most common regression-based method by which tests of incremental explanation of variance or marginal utility of predictors is conducted. However, regression, including stepwise and hierarchical approaches, as well as structural equations models which rely on both factor analytic and regression techniques, are susceptible to suppressor effects, overestimate the importance of the strongest predictors, underestimate the importance of the less important predictors, and allow slight differences in inter-predictor correlations to change the pattern of derived regression weights (Budescu, 1993; Johnson, 2000).

In response to the limitations of multiple regression to reliably and accurately determine the relative importance of predictors, a number of measures of relative importance have been introduced. Instead of focusing simply on a variable’s incremental contribution to $R^2$, as is commonly assessed in hierarchical regression, measures of relative importance focus on a variable’s relative contribution to $R^2$, taking into account both its unique contribution and its contribution in the presence of other predictors. Of these, Budescu’s Dominance Analysis (Azen & Budescu, 2003; Budescu, 1993) and Johnson’s RWA (Johnson, 2000, 2001) are seen as the most valid, as both: (a) contain no logical flaws in their development, (b) are expressed as a proportion of $R^2$ attributable to each independent variable, and (c) consider both direct effects and effects considering the other independent variables in the model (Johnson, 2004; LeBreton, et al., 2007). In this way, these techniques correct for the effects of multicollinearity among predictors and more accurately determines each predictor’s relative contributions to the explained variance of the dependent variable.

The four steps to conducting a RWA are: (1) Transform predictors to uncorrelated variables that are maximally related to original predictors, (2) Regress dependent variable onto the new uncorrelated variables, (3) Regress the original predictors onto the new uncorrelated variables, (4) Combine the indices from Step 2 with the indices from Step 3. Put more simply, this technique is analogous to the use of an orthogonal rotation during a factor analysis. The development and use of RWA is more fully described by Johnson (2000, 2001) and LeBreton, et al. (2007).

In the present study, RWA is applied to the correlation matrices I derived from the Behson, et al. (2000) meta-analysis. Analyses were calculated using an SPSS syntax program composed by Dr. Jeff Johnson and run on the PASW18 (formerly SPSS) statistical software program. By using RWA, this study represents the first time this technique, the most appropriate for explaining the relative contribution to $R^2$ among multiple independent variables, has been applied to job design research.
RESULTS

Table 1 reports the results of the relative weights analysis. Specifically, this table lists the total variance in each dependent variable explained by the three CPS or the five CJC (the total R²), and then lists how much of this total R² can be attributed to each of those constructs. Both the unique R² for each dimension and the percentage of the total R² that the unique R² represents are reported. Thus, looking at the first column in the first set of results, we can see that all five CJC dimensions, taken together, account for 35% of the total variance in experienced meaningfulness. Further, 7.4% of the variance in experienced meaningfulness is uniquely explained by autonomy, representing 21% of total R² explained by all five CJC dimensions.

<table>
<thead>
<tr>
<th>Experience</th>
<th>Meaningfulness</th>
<th>Experience</th>
<th>Responsibility</th>
<th>Knowledge of Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>raw RW</td>
<td>RW as %</td>
<td>raw RW</td>
<td>RW as %</td>
<td>raw RW</td>
</tr>
<tr>
<td>Skill Variety</td>
<td>0.099</td>
<td>28.0</td>
<td>0.045</td>
<td>18.5</td>
</tr>
<tr>
<td>Task Significance</td>
<td>0.103</td>
<td>29.2</td>
<td>0.048</td>
<td>19.5</td>
</tr>
<tr>
<td>Task Identity</td>
<td>0.019</td>
<td>5.3</td>
<td>0.032</td>
<td>13.2</td>
</tr>
<tr>
<td>Autonomy</td>
<td>0.074</td>
<td>21.0</td>
<td>0.071</td>
<td>28.9</td>
</tr>
<tr>
<td>Feedback</td>
<td>0.057</td>
<td>16.4</td>
<td>0.049</td>
<td>20.0</td>
</tr>
<tr>
<td>Total R²</td>
<td>0.351</td>
<td></td>
<td>0.246</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job Satisfaction</th>
<th>Growth Satisfaction</th>
<th>Intrinsic Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>raw RW</td>
<td>RW as %</td>
<td>raw RW</td>
</tr>
<tr>
<td>Experienced Meaningfulness</td>
<td>0.268</td>
<td>57.6</td>
</tr>
<tr>
<td>Experienced Responsibility</td>
<td>0.110</td>
<td>23.6</td>
</tr>
<tr>
<td>Knowledge of Results</td>
<td>0.087</td>
<td>18.8</td>
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<tr>
<td>Total R²</td>
<td>0.465</td>
<td>0.464</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job Satisfaction</th>
<th>Growth Satisfaction</th>
<th>Intrinsic Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>raw RW</td>
<td>RW as %</td>
<td>raw RW</td>
</tr>
<tr>
<td>Skill Variety</td>
<td>0.051</td>
<td>20.3</td>
</tr>
<tr>
<td>Task Significance</td>
<td>0.031</td>
<td>12.4</td>
</tr>
<tr>
<td>Task Identity</td>
<td>0.017</td>
<td>6.7</td>
</tr>
<tr>
<td>Autonomy</td>
<td>0.092</td>
<td>36.6</td>
</tr>
<tr>
<td>Feedback</td>
<td>0.060</td>
<td>24.0</td>
</tr>
<tr>
<td>Total R²</td>
<td>0.251</td>
<td>0.426</td>
</tr>
</tbody>
</table>
In the first set of results in Table 1, we can see that the results are somewhat consistent with Hackman and Oldham’s (1976) model, as well as the Behson, et al. (2000) results. According to the model, experienced meaningfulness should be primarily explained by skill variety, task significance and task identity. Skill variety and task significance explain 28% and 29% of the explained variance in experienced meaningfulness, but task identity explains far less. All three combine to explain 63% of the explained variance, which is not proportionately more than is explained by the two other CJC. Further, according to the original JCM model, only variety, identity and significance should be significant predictors of experienced meaningfulness; yet, 37% of the explained variance in meaningfulness is accounted for by the two other CJC. Thus, the results are mixed.

In terms of experienced responsibility, the results show that autonomy explains 29% of the variance in experienced responsibility. This is single highest result, but is not considerably more than many other CJC. Further, according to the original JCM model, only autonomy should be a significant predictor of experienced meaningfulness; yet, 71% of the explained variance in responsibility is accounted for by the four other CJC. Again, the results are mixed.

In terms of knowledge of results, feedback does explain by far the largest amount of variance (63%), which is consistent with the model. Overall, results provide some support for the model and prior findings, but demonstrate that expected relationships may not be as strong or consistent as commonly hypothesized. In particular, this analysis reveals that the five CJC do not exhibit the degree of discriminant validity proposed by Hackman & Oldham (1976) or Behson, et al. (2000). Thus, the impact of one particular CJC is more difficult to distinguish from the impact of the others. Thus, the five CJC, taken collectively, may be a better predictor of overall reactions than each CJC is in predicting its corresponding CPS.

In the second set of results, we offered no particular expectation for the relative importance of the three CPS on the outcome variables. Results show that experienced meaningfulness is the most important in predicting job satisfaction and growth satisfaction (accounting for 57.6% and 57.1% of explained variance in those outcome variables, respectively). However, meaningfulness plays a much lesser role in explaining variance in intrinsic motivation, which is better explained by the other variables (experienced responsibility explains 39.6% of explained variance in intrinsic motivation and knowledge of results explains 47.8%).

The third set of results examines the job characteristics model as it is commonly tested- without the CPS included. These results show that autonomy plays a prominent role in explaining job and growth satisfaction, while feedback plays a primary role in explaining variance in intrinsic motivation. Task identity explains little variance in any of the dependent variables studied. As expected, the CJC collectively do not explain as much variance in the outcome variables as the CPS do. Further, similar to the first set of results, this analysis reveals a lack of discriminant validity among CJC. Taken together, these results provide some support for the model and prior findings, but demonstrate that expected relationships may not be as strong or consistent as commonly hypothesized.

**DISCUSSION**

Much of the JCM remains robust, and the results of this analysis confirm the importance of such bedrock principles as experienced meaningfulness, autonomy and feedback in explaining reactions to one’s work. However, the model suffers from the fact that many of the elements in the model are closely related and the three-stage model can be considered somewhat redundant (for example, are separate measures of feedback and knowledge of results both needed?). The JCM is an important theory because it illuminates a handful of important concepts, and has been built on by researchers and practitioners for decades.

However, its broad applicability can also be seen as a reason for the muddled and sometimes contradictory results found by many researchers, including those of this study. For example, what would be considered high skill variety for a factory worker would probably pale in comparison to what a white-collar employee considers low-to-medium skill variety. The Behson, et al. (2000) meta-analysis combined
the results from such varied samples as teachers, engineers, sales professionals, enlisted US Navy troops, and work-study students. While their moderator analyses did not uncover any differences among sample types, it is likely that such combinations of samples led to lowered reliability of measures and more muddled responses. The same could be said for the Fried & Ferris (1987) and Loher, et al. (1985) meta-analyses.

Further, the JCM’s rapid ascendance as the dominant theory in job design research may have had unintended consequences. Because of the respect and deference many had towards the JCM, other models and alternate theories were slow to develop (Parker & Ohly, 2009). Johns (2010) contends that the field of job design research has been stuck in the past, and has not adapted to changes in the workplace due to overly strict adherence to the JCM, which was proposed 34 years ago, before the advent of major technological advances.

Oldham and Hackman (2010) themselves have written that they never intended the JCM to be the final word on job design research, and they encourage researchers to expand the scope of their inquiries. This is especially true given how the workplace has changed. The JCM does not take into account several now-common forms of work organization and job design, including telecommuting, virtual teams and distributed work groups. The cultures of many workplaces have made a shift from top-down command-and-control approaches to those that emphasize collaboration and employee decision-making. In a more interconnected world, many jobs are now performed with greater interdependence and constant communication with co-workers, customers, and liaisons from a broad network of other companies. Thus, one would expect the influence of the interpersonal situation of one’s work to be paramount in shaping one’s satisfaction, growth and intrinsic motivation (Grandey & Diamond, 2010, Morgeson, Dierdorff & Hmurovic, 2010).

For all of these reasons, job design researchers need to expand the scope of their research beyond the JCM. Karasek’s (1979) approach to job design and motivation, which emphasizes one’s job demands, as well as the amount of control and the amount of support given to meet those demands, may be particularly well-suited to exploring the modern workplace. This model also explores how stress and well-being influence one’s reactions to one’s job. In one example of a useful extension of the JCM, Grzywacz and Butler (2005) have examined how autonomy and skill variety influence one’s ability to manage work-family conflict. More research extending the reach of job design through alternate models and an expanded set of antecedents/outcomes is needed to better examine the effects of job design in the modern workplace.

Fortunately, there has been a recent uptick in job design research that has begun to expand the scope of examination and more specifically addresses the modern workplace. Specifically, Grant (2008) and Grant and Parker (2009) have proposed frameworks in which the relationships within and the inherent interdependence of the modern workplace impact the outcomes associated with job design. They also examine boundary conditions- that is, situational variables that affect how job design affects motivation and performance.

Parker and Ohly (2010) review a wide array of organizational literature and reframe job design not only in terms of the JCM, but also integrate such frameworks as social information processing, emotions and stress, and job control and empowerment. They further explore critical job design issues for the modern workplace in which knowledge-based work, distributed work, workplace flexibility, distance-based work and communication technology are all addressed. Finally, Grant, Fried and Juillerat (2011) present a framework comparing the classic and contemporary approaches to job design. All of these new frameworks and perspective hold promise for advancing the field of job design research and practice.

Overall, this paper’s critique of job design research is not as much a critique of the JCM as it is how others have reacted to this model. JCM is still useful, albeit imperfect. The way in which it has been used as the default “final word” in job design research has kept this field from contributing as much as it could have to management research and practice (Oldham & Hackman, 2010), and this problem has only recently begun to have been addressed. Only by critically re-analyzing JCM research do these shortcomings become more apparent, demonstrating the value of such critical re-analysis.
This study provides a methodological contribution to the field of organizational behavior as it is one of only a handful of studies in this field (see Behson, 2002, 2005, 2011 and Johnson & LeBreton, 2004) to revisit prior research using a recently developed and superior analytic technique for determining the unique contribution of independent variables to explained variance of a dependent variable.

The fact that the results of these studies are inconsistent with past findings is most likely attributable to the use of an analytic technique best suited for determining the unique contributions of various independent variables on the explained variance of outcomes. The relative weights procedure corrects for multicollinearity and avoids many of the biases associated with regression-based techniques. However, it is also possible that there were flaws both in the present study and in the Behson et al. (2000) meta-analysis from which the data are taken. Further, while this meta-analysis represents the most recent comprehensive review in on the JCM, it is about a decade old, and necessarily excludes more recent literature.

Another limitation of both studies is that there is no easily calculable method for determining statistically significant differences among relative weights (Johnson, 2001). Instead, Johnson (2004) and Tonidandel, LeBreton, & Johnson (2009) describe a boot-strapping procedure in which one could create a large population of datasets based on the data set in use, and then calculate confidence intervals around relative weight results. The use of this procedure is beyond the scope of this paper, especially considering that this procedure has never been applied to meta-analytic data, and it has not been established that it is valid to do so. I have attempted to be conservative in interpreting these findings and encourage the reader to be similarly conservative so that we do not overstate small differences in relative weight.

In conclusion, this study will hopefully encourage more researchers to utilize relative weights and other analytic techniques that are most appropriate for testing hypotheses of comparative and marginal utility. Multiple regression maximizes the prediction of a dependent variable using a set of data, but is not nearly as useful in determining the differential effects of each of the included independent variables. It is recommended that researchers who are interested in investigating the relative importance (i.e., contribution to explained variance) of predictors utilize the most appropriate methods to do so. Dominance (Budescu, 1993) and relative weights (Johnson, 2000) are two appropriate choices to suit this purpose. Clearly, there are many areas of organizational research in which the relative importance of predictors would be extremely interesting (Johnson, 2001). For example, a measure of relative importance would be appropriate if one is comparing the predictive validities of various employment selection tests and criteria, making decisions for reducing the number of items in a scale, or comparing the contributions of various proposed antecedents to employee turnover.

Finally, this study highlights the importance of re-examining classic organizational behavior theories. Such critical re-analyses are an important but all too infrequently performed part of the scientific process, especially as they relate to research streams in the “consolidation and accommodation” stage of development (Reichers & Schneider, 1990). If researchers fail to question the conceptual underpinnings of their work, potential flaws may not be brought to light, holding back scholarly advancement.

REFERENCES


* Indicates that this study was included in the Behson, et al. (2000) meta-analysis
Not All Organization-Based Self-Esteem is Created Equal: Sources and Consequences of OBSE Fragility

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Existing theory on organization-based self-esteem assumes that high levels of OBSE motivate employees to exhibit outcomes consistent with their OBSE level. That is, high OBSE employees are expected to think and act in a way reflecting a secure sense of high self-worth, consistently exhibiting positive attitudes and behavior across contexts. In contrast, we argue that employees’ OBSE can be more or less fragile, and that higher levels of fragile OBSE will motivate employees to react defensively to circumstances threatening self-worth. Our multidimensional view is unique and important because it offers a possible explanation for inconsistent employee behavior.

INTRODUCTION

Since its introduction and definition by Pierce, Gardner, Cummings, and Dunham (1989) as an individual’s feelings of self-worth associated with organizational membership, organization-based self-esteem (OBSE) has been studied as an antecedent, a mediator, a moderator, and a consequence shaped by work and organizational experiences. (See Pierce & Gardner [2004] for a complete review.) Although past work is insightful, it is important and interesting to note that much OBSE research is based on the a priori assumption that employees are motivated to think and act in a manner consistent with their OBSE level. Yet, research on global self-esteem has revealed that high levels of self-esteem sometimes do not result in theorized outcomes (e.g., Baumeister, Campbell, Kruegar, & Vohs, 2003). In fact, some researchers have noted the counterintuitive finding that high levels of self-esteem can be associated with such unpleasant outcomes as aggression (Baumeister, Boden, & Smart, 1996) and cheating behavior (Lobel & Levanon, 1988). Thus, it appears that current OBSE researchers are faced with a bit of a conundrum: past empirical OBSE work supports the validity of the concept, yet there is a growing body of evidence suggesting that the assumed consistency motive might be overly simplistic. This puzzle has not gone entirely unnoticed in published theoretical reviews. For example, Pierce and Gardner (2004) briefly acknowledged that past OBSE studies do not adequately consider employees’ motives and that some individuals do not always think and behave in a way that is consistent with their level of self-esteem.
Toward this end, we review the theoretical history and basic definitions of the OBSE concept, and we point out that this theory assumes that individuals are motivated to think and act in a way that is consistent with their level of OBSE (Pierce et al., 1989; Pierce & Gardner, 2004). Next, we provide an argument that the consistency assumption is sometimes unrealistic. Based on work by Kernis and his colleagues (e.g., Kernis, 2003; Kernis, Lakey, & Heppner, 2008), we introduce the term “fragile” OBSE to account for the fact that OBSE can be state-like in nature (even among employees with long organizational tenure) and easily influenced by context. We propose that OBSE fragility derives from three sources: the degree to which employees’ OBSE is dispositionally (un)stable (Kernis, 2005; Kernis, Grannemann, & Barclay, 1989), the degree of (in)congruence between explicit and implicit aspects of employees’ OBSE (Franham, Greenwald, & Banaji, 1999), and the degree to which employees’ OBSE is contingent upon meeting a personal standard of performance (Crocker & Wolfe, 2001).

Rather than assuming that individuals are motivated to think and behave in a way that is consistent with their OBSE, we assume that the motives associated with OBSE can vary. We acknowledge that stable and secure OBSE likely causes employees to think and act in a manner consistent with their sense of self-worth; however, we also argue that OBSE will provide employees with the motivation to defend their sense of self-worth to the extent that their OBSE is fragile. We depict these relationships in a model (see Figure 1), and develop propositions to describe them throughout the text. Taken as a whole, viewing OBSE as potentially fragile offers more nuanced predictions and explanations of potentially ambivalent and inconsistent employee behavior. Such a view may allow researchers to shift their focus from studying stable OBSE levels towards studying how an employee’s self-concept fluctuates over time and interacts with the organizational context.

![Figure 1: Sources and Outcomes of OBSE Fragility](image)

**OBSE Theory and the Consistency Motive**

Self-esteem has been explored by organizational researchers since the 1960s, when Korman (1966), conceptualized self-esteem as the overall “…extent to which one sees the self as a competent, need-satisfying individual…” (Korman, 1976, p. 51). This conceptualization described self-esteem, in a global fashion, as the stable end result of success or failure. However, in 1989, Pierce et al. noted that individuals do not experience self-esteem in a strictly global sense. Rather, self-esteem is a hierarchical phenomenon comprised of aspects that are global (general feelings of self-worth), specific (self-worth in reference to a mid-level context or role such as work), and task-specific (self-worth in reference to a micro-level task contained within a context or role). Further, Pierce et al. observed that behavioral variables are most predictive when they are framed within context (Epstein, 1979), and reasoned that a
lack of context specificity was a primary cause of the lack of findings in early organization-related self-esteem research. Thus, these authors concluded that it was appropriate to use organization-specific self-esteem measures when studying organization-related outcomes, and they introduced the concept of OBSE to address this need. According to Pierce and his colleagues, OBSE is an attitude that reflects “…the self-perceived value that individuals have of themselves as organization members” wherein employees with high OBSE “…should perceive themselves as important, meaningful, effectual, and worthwhile within their employing organization” (1989, p. 625).

Current OBSE theory is driven by an assumption that was borrowed directly from early global self-esteem research (e.g., Korman, 1971, 1976): A need for cognitive consistency motivates employees to think and act in a manner that is congruent with their level of OBSE (Pierce et al., 1989). This assumption leads to the prediction that employees with high levels of OBSE will consistently exhibit positive attitudes and behavior across contexts (Pierce et al., 1989; Pierce & Gardner, 2004), thereby emphasizing the importance of OBSE levels. For example, empirical researchers have predicted that high levels of OBSE result in higher degrees of citizenship behaviors (e.g., Tang & Ibrahim, 1998), job satisfaction (e.g., Carson, Carson, Lanford, & Roe, 1997), commitment (e.g., Gardner & Pierce, 1998), and motivation (e.g., Pierce et al., 1989). Yet, recent counterintuitive findings have complicated a straightforward interpretation of past findings.

OBSE FRAGILITY AND THE PROTECTION MOTIVE

Drawing on findings that high levels of self-esteem do not always result in positive outcomes (e.g. Baumeister et al. 2003) and that high levels of self-esteem can be associated with reactive and dysfunctional outcomes usually associated with low self-esteem (e.g., Baumeister et al., 1996; Lobel & Levanon, 1988), some researchers have recently concluded that individuals’ self-esteem can be either more “secure” or more “fragile” in nature (Kernis, 2003; Kernis et al., 2008). Self-esteem that is highly secure represents the traditional conceptualization of self-esteem as a trait-like construct that is resistant to context effects and results in positive attitudes and behaviors (Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003; Kernis et al., 2008). In strong contrast, self-esteem that is highly fragile represents feelings of self-worth that are more state-like, influenced by context, and cause individuals to react defensively to any circumstance threatening their sense of worth (Jordan et al., 2003; Kernis et al., 2008).

Defensive reactions to self-esteem threats come in a variety of forms. These may be immediate emotion-laden responses such as self-consciousness (Oosterwegel, Field, Hart, & Anderson, 2001), anger (Waschull & Kernis, 1996), and self-doubt (Lupien, Seery, & Almonte, 2012). Or, defensive reactions may be behaviors intended to protect one’s self-worth, such as avoidance of social situations so as to insulate oneself from awkward comparisons (Oosterwegel et al., 2001) and reduced curiosity along with preference for challenge so as to pre-empt a potentially poor performance (Waschull & Kernis, 1996). Or, defensive reactions may be behaviors intended to boost one’s self-worth such as rationalization of poor performance (Jordan et al., 2003), a preference for in-groups (Jordan et al., 2003), or downplaying the importance of a threat (Borton, Crimmins, Ashby, & Ruddiman, 2012).

Given the growing body of evidence demonstrating that individuals’ global self-esteem can be more or less fragile, we believe it is prudent to consider that organizational members’ OBSE will also vary in this way. Further, we propose that organizational members will tend to exhibit defensive reactions to the extent that their OBSE is fragile because many aspects of the organizational context potentially threaten members’ sense of self-worth. For example, there is evidence that performance feedback can threaten employees’ self-esteem (e.g., Kluger & DeNisi, 1996) and that employees respond negatively to this kind of feedback with anger and discouragement (e.g., Smither, London, & Reilly, 2005). Also, organizational members are often faced with social comparisons that threaten their sense of worth by drawing attention to more capable and better compensated individuals (Greenberg, Ashton-James, & Ashkanasy, 2007). These threatening comparisons have been linked to negative outcomes such as jealousy and loss of self-esteem (Vecchio, 2000). In addition, employees’ sense of self-worth may be threatened by judgmental
and critical individuals, thereby resulting in a variety of antisocial behaviors and attitudes (Aquino & Douglas, 2003).

**Proposition 1:** To the extent that it is fragile, high levels of OBSE will cause individuals to react defensively to events threatening self-worth.

**SOURCES OF OBSE FRAGILITY**

Given that OBSE can lead to defensive reactions to the extent that it is fragile, we describe three sources of fragility that explain how and why OBSE outcomes are likely to vary as a result. Sources of fragility include: the degree to which employees’ OBSE is dispositionally (un)stable (Kernis, 2003, Kernis et al., 2008; Kernis et al., 1989), the degree of (in)congruence between explicit and implicit aspects of employees’ OBSE (Franham et al., 1999; Kernis 2003; Kernis et al., 2008), and the degree to which employees’ OBSE is contingent upon meeting a personal standard of performance (Crocker & Wolfe, 2001; Kernis 2003; Kernis et al., 2008).

**Disposition for (In)stability**

Drawing heavily from Korman’s (1966; 1976) description of global self-esteem, Pierce et al.’s (1989) proposed that OBSE is an attitude that develops over time into a stable characteristic, and subsequent researchers have operated from this stability premise. In a recent literature review, Pierce and Gardner (2004, p. 593), drawing on Campbell (1990), state: “Early in one’s tenure with an organization, OBSE is an outer level conceptualization of the self – state-like, reflecting unstable feelings of self-regard. With increasing tenure, self-esteem evolves from a primarily outer level to a less changeable inner level self-concept. Thus, for most job experienced employees, OBSE is highly stable.” Despite this focus on trait-like stability, there are compelling reasons to believe that individuals’ OBSE can be more or less stable as a function of individual differences even if an employee has significant organizational tenure.

To begin, dispositional characteristics influence the degree to which attitudes, even those central to individuals’ self-concept, are stable or unstable (Briñol & Petty, 2005), and some of these attitude-influencing characteristics may cause individuals to have OBSE that is more state-like and readily responsive to contextual changes. In addition, the findings of global self-esteem research corroborate the influence of dispositional characteristics on self-esteem stability (e.g., Greenier, Kernis, McNamara, Waschull, Berry, Herlocker, & Abend, 1999; Greenier, Kernis, Waschull, 1995; Kernis, 2005), and a recent meta-analysis provides evidence that level and degree of instability are distinct (although sometimes related) dimensions of self-esteem (Okada, 2010). This research provides evidence that individuals may not experience consistent, long-term feelings of self-worth. Rather, both high and low self-esteem individuals can experience large degrees of instability in their sense of self-worth (Greenier et al., 1999; Greenier et al., 1995; Kernis, 2005; Kernis, Cornell, Sun, Berry, & Harlow, 1993).

Finally, although extant theory presents OBSE as a trait-like variable for experienced employees, there is a lack of empirical evidence demonstrating that this is the case. To be sure, Pierce et al.’s (1989) research did provide some empirical support for the notion of OBSE stability. However, of the seven different studies described in their work, the samples of the two studies purported to assess OBSE stability were relatively small. In fact, only Study One, with a sample of 32 summer school teachers, and Study Two, with a sample of 45 MBA students, address the issue of within-person OBSE variation (Pierce et al., 1989, p. 633). In addition, only Study Two appears to have had a longitudinal design, and this design involved the distribution of only two surveys spaced at a five-week interval (Pierce et al., 1989). Thus, not only might the scale and scope of this research not have been large enough to identify individuals inclined to experience unstable OBSE, but the interval at which OBSE was measured might also have been too long to capture short-term fluctuations.

In sum, there are compelling reasons that suggest organizational members can experience considerable variation in OBSE: 1) evidence demonstrating individuals’ dispositions influence attitude stability (Briñol & Petty, 2005); 2) global self-esteem research demonstrating that individuals’ self-worth
can vary (Kernis, 2005); and 3) the lack of research demonstrating OBSE stability. Our view is that dispositional instability is an important but overlooked source of fragility in OBSE and that differences in OBSE stability among employees will be noticeable even after controlling for differences in organizational tenure.

Further, we propose instability is likely to cause individuals’ OBSE to be fragile in nature and cause individuals to feel more vulnerable to circumstances threatening their self-worth (e.g., negative feedback, unflattering social comparisons, co-workers who degrade others), thereby inspiring defensive reactions. Supporting this assertion, researchers have found that instability in global self-esteem motivates defensive emotions, attitudes, and behaviors. More specifically, higher degrees of instability are associated with stronger reactions to unfair treatment (Meier, Semmer, & Hupfeld, 2009); self-consciousness, anxiousness, avoidance (Oosterwegel et al., 2001); defensive exaggerations (Kernis, Greenier, Herlocker, Whisenhunt, & Abend, 1997); reduced curiosity, reduced preference for challenge, a greater tendency to become angry (Waschull & Kernis, 1996); and immature psychological self defense such as denial, passive aggression, acting out, and projection (Zeigler-Hill, Chadha, & Osterman, 2008). There is also evidence indicating that self-esteem instability can be a stronger predictor of negative outcomes than level of self-esteem (Franck & De Raedt, 2007).

To illustrate the importance of considering (in)stability as a source of OBSE fragility, consider the attitudes and behaviors of two hypothetical employees. Both Employee A and Employee B have substantial and equally long organizational tenure and have high levels of OBSE. Currently, OBSE theory predicts that both Employee A and Employee B would exhibit positive outcomes that are consistent with their OBSE level (Pierce & Gardner, 2004). However, a more nuanced prediction can be made when the notion of dispositionally unstable OBSE is taken into consideration. Assume, for example, that Employee A’s OBSE tends to be very stable such that at any one time his/her level of self-esteem will be characteristically high while Employee B’s generally tends to be unstable such that at any one time his/her level of self-esteem might be considerably lower or higher than what is usually observed. In a situation that threatens feelings of self-worth (e.g., failing to meet a performance goal, being outperformed by a rival, embarrassing mistakes, etc.), Employee A would still be expected to exhibit the positive attitudes and behaviors that are consistent with a high OBSE level while Employee B would be expected to react defensively, sometimes avoiding and/or withdrawing from the situation. Employee B would also likely respond negatively to criticism at times (e.g., making excuses, blaming others, minimizing the importance/degree of a bad performance).

**Proposition 2:** Dispositional instability will cause OBSE to be fragile, thereby leading to defensive reactions to events threatening self-worth.

**Cognitive (In)congruence Between Explicit and Implicit OBSE**

Since Pierce et al.’s (1989) original work, there have been many published studies of OBSE utilizing the original self-report measure and involving thousands of respondents (Pierce & Gardner, 2004). Each of these studies has independently verified the robustness of the OBSE scale, and even shortened versions of the measure have been used with success (e.g., Chattopadhyay, 2003). Based on these results, one might assume that the existing self-report measures of OBSE adequately capture the entire phenomenon of OBSE. However, cognition-oriented researchers (e.g., Nosek & Smyth, 2007) have observed that: 1) attitudes have an explicit component that is associated with effortful conscious thought; 2) attitudes have an implicit component associated with automatic and sometimes unconscious thought; 3) these components can be more or less congruent (i.e., aligned); and 4) the implicit component is an important predictor of outcomes. For example, Thrash, Elliot, and Schultheiss (2007) found that the explicit and implicit aspects of an individual’s need for achievement tend to be less congruent among high self-monitors and individuals with a low preference for consistency.

Similarly, some researchers conceptualize global self-esteem as having two components that are not always in agreement. The first component is explicit self-esteem resulting from an individual’s conscious and deliberate self-evaluation, which can be measured directly (Jordan, Logel, Spencer, & Zanna, 2006;
Karpinski & Steinberg, 2006). The second component is implicit self-esteem, which operates in an automatic fashion, often outside of immediate conscious awareness and must be measured indirectly (Jordan et al., 2006; Karpinski & Steinberg, 2006). Lack of congruence occurs when there is a mismatch between levels of implicit and explicit self-esteem. Possible mismatches include low explicit/high implicit, referred to in the global self-esteem literature as discrepant low self-esteem, and high explicit/low-implicit, referred to as discrepant high self-esteem. Owing to the evidence demonstrating that attitudes can have implicit and explicit components that are not always aligned (e.g., Nosek & Smyth, 2007) and given that this finding is mirrored by global self-esteem research (e.g., Zeigler-Hill, 2005), we believe that an important source of self-esteem fragility being overlooked by organizational researchers is the degree to which explicit and implicit aspects of individuals’ OBSE are incongruent. We also propose that incongruence between explicit and implicit aspects of OBSE is likely to cause individuals to become more vulnerable to circumstances threatening their self-worth (causing OBSE to become more fragile) and to inspire defensive reactions.

Again, a body of evidence supporting this proposition exists within global self-esteem research. Researchers have found that incongruence can cause individuals’ self-worth to be more easily threatened and lead to greater degrees of in-group bias (Jordan et al., 2003); rationalizations of poor performances (Jordan, Spencer, & Zanna, 2003); greater degrees of narcissism (Zeigler-Hill, 2005); and poor interpersonal relationships (Zeigler-Hill, 2006). Although the condition of low explicit/high implicit self-esteem has received much less attention by researchers, the research that does exist indicates a similar pattern. For example, Schröder-Abé, Rudolph, and Shütz (2007) found that low explicit/high implicit individuals tended to display more anger and have poorer psychological health.

To illustrate the importance of considering (in)congruence as a source of OBSE fragility, consider hypothetical Employee C and Employee D who both have high levels of dispositionally stable OBSE. However, Employee C’s OBSE explicit and implicit OBSE are highly congruent while Employee D’s are highly incongruent. In a situation in which a negative self-evaluation arises, Employee C’s feelings of self-worth are secure because his/her explicit and implicit OBSE levels are high. Consequently, this employee would still be expected to exhibit the positive outcomes that are traditionally associated with high levels of OBSE. However, Employee D’s feelings of self-worth are likely to be fragile because, although his/her deliberate and conscious feelings of organizational self-worth are high, his/her automatic and unconscious feelings of self-worth are a source of uncomfortable self-doubt. As such, Employee D would be expected to exhibit a defensive reaction to any situation threatening his/her feelings of self-worth (e.g., failing to meet goals, being outperformed by a rival, embarrassing mistakes, etc.).

**Proposition 3:** Incongruence between explicit and implicit aspects of OBSE will cause OBSE to be fragile, thereby leading to defensive reactions to events threatening self-worth.

**Contingence of OBSE on Performance of Self-Relevant Tasks**

As early as 1890, William James observed that the nature of an individual’s self-concept is heavily influenced by the domains to which that individual assigns value and worth. While this observation is now well over 100 years old, contemporary global self-esteem researchers have only recently started using the concept of “contingent self-esteem” (e.g., Crocker, Luhtanen, Cooper, & Bouvrette, 2003; Crocker & Wolfe, 2001; Kernis & Goldman, 2006) to take into consideration how an individual’s self-concept can be linked to idiosyncratic standards of self-worth. According to this body of research, individuals’ self-esteem is contingent on particular activities in which they are engaged. This research also provides a growing list of activities upon which self-esteem can potentially be contingent, including: task competence and interpersonal relationships (Johnson & Blom, 2007) and maintaining group membership (Amiot & Hornsey, 2009).

When individuals feel as if they have met a self-imposed standard of success in an activity central to their self-concept, they experience stronger feelings of self-worth. However, failure to meet personal expectations in these important activities threatens self-esteem by calling into question one’s self-worth
and results in a variety of defensive outcomes. Among other things, contingent self-esteem has been linked to deviant workplace behavior (Ferris, Brown, Lian, & Keeping, 2009); narcissism (Zeigler-Hill, Clark, & Pickard, 2008); hostile interpersonal style (Zeigler-Hill, 2006); dysfunctional achievement orientation, greater desire for affiliation, and dependence on others (Johnson & Blom, 2007); and intergroup bias (Amiot & Hornsey, 2009). Additionally, the effects of contingent self-esteem have been shown to be empirically distinct from those of implicit self-esteem (Bos, Huijding, Muris, Vogel, & Biesheuvel, 2010).

Considering the evidence cited above, we believe that the degree to which organizational members’ OBSE is contingent is yet another important source of fragile OBSE being overlooked by organizational researchers. We propose that greater degrees of contingency will cause OBSE to become more fragile (i.e., more state-like, more easily influenced by context). Thus, any circumstance that calls into question the individual’s performance on activities central to one’s self-concept constitutes a threat to be defended against.

To illustrate, consider Employees E and F who both have high levels of generally stable, congruent OBSE. Both of these employees may understand that “good customer service” is an important contributor to organizational success. However, the act of providing this service may or may not be linked to each employee’s self-worth. As such, Employee E’s OBSE may be highly secure and not based on meeting a personal standard of performance on any activity. Thus, this employee may not respond defensively to any situations that call into question his/her self-worth (e.g., supervisor criticisms, irate customers, critical co-workers). However, Employee F’s OBSE may be highly fragile because his/her self-worth is contingent upon providing customers with the best service possible. Consequently, Employee F can be expected to exhibit a defensive reaction to any customer service related situation that potentially threatens his/her self-concept (e.g., avoiding difficult customers, getting angry when criticized, making excuses, etc.).

Proposition 4: Contingence will cause OBSE to be fragile, thereby leading to defensive reactions to events threatening self-worth.

DISCUSSION

Current OBSE theory predicts that employees with a high level of OBSE will develop and maintain favourable work attitudes and behaviors consistent with this level of OBSE, while employees with a low level of OBSE will exhibit unfavourable work attitudes and behaviors (Pierce & Gardner, 2004; Pierce et al., 1989). In effect, OBSE researchers have hypothesized a simple and straightforward relationship: High OBSE leads to positive outcomes and low OBSE leads to negative ones. However, in a meta-analysis, Dalal (2005) found that positive and negative discretionary behaviors are only modestly negatively correlated, and an employee who is helpful and compliant at one time might also be uncooperative and deviant at another. Our multidimensional view is unique and important because it offers a possible explanation for this ambivalent and inconsistent behavior by employees. Namely, we conceptualize high OBSE as a neutral variable that is capable of producing both positive and negative outcomes when it is fragile.

We believe that this work represents a logical step towards developing a more nuanced theory of OBSE. Yet, our efforts are by no means comprehensive, and there are likely to be additional avenues of inquiry that can further increase our understanding of OBSE. While some potential research areas are somewhat obvious (e.g., How prevalent is unstable, incongruent, and/or contingent OBSE? To what degree can these dynamics be managed?), we believe that there are four issues that warrant further clarification: the question of what constitutes optimal OBSE, the relationship and theoretical distinction between narcissism and fragile OBSE, measurement difficulties that are likely to be encountered by researchers who examine fragile OBSE empirically, and the practical implications of fragile OBSE.
Optimal OBSE

In response to evidence demonstrating that high levels of self-esteem can have negative consequences, Kernis (2003) described the concept of optimal self-esteem. Optimal self-esteem is proposed to be dispositionally stable, non-contingent, and congruent (Kernis, 2003), and it is optimal in the sense that it represents a state of high self-worth that is authentic and not associated with defensive reactions. We believe that the notion of optimal may be applicable to OBSE. However, Kernis’s (2003) view may not translate directly to OBSE theory because what constitutes optimal can vary depending on the answer to the question “Optimal for what?” (Crocker, 2006).

To clarify, although the vast majority of global self-esteem research focuses on undesirable outcomes, there has been limited documentation of fragile self-esteem being associated with the exertion of extra effort (Crocker, Karpinski, Quinn, & Chase, 2003; Crocker et al., 2003b). In addition, research has demonstrated that situations threatening individuals’ self-concepts can result in two different kinds of defensive reactions. On one hand, when individuals believe that they are incapable of surpassing a rival’s performance, the threat to self-evaluation can cause them to defend their self-concept through disagreeable means (Pemberton & Sedikides, 2001; Tesser & Smith, 1980). On the other hand, when individuals believe that they can surpass their rival’s performance, the self-evaluation threat can cause them to defend their self-concept by performing at higher levels (Buunk, Peiró, & Griffioen, 2007). Therefore, although it seems likely that many of the defensive reactions exhibited by employees with fragile OBSE will be dysfunctional, it is possible that some of the defensive outcomes associated with fragile OBSE may actually benefit employees and their organizations. That is, there may be some optimal form of fragile OBSE that causes organizational members to exhibit performance-oriented defensive reactions aimed at maintain or increasing feelings of self-worth, and research that explores this possibility has the potential to be quite interesting.

Fragile Self-Esteem and Narcissism

Narcissism is generally considered to be a negative trait that denotes an overly positive sense of self. It reflects an individual’s desire to be in a position of authority, preoccupation with self-image, feelings of arrogant superiority, and a tendency to feel entitled and exploit others (Emmons, 1987). Similar to our proposed outcomes for fragile OBSE, research has found that narcissists tend react negatively to threatening social comparisons and have a greater potential for ethical misconduct (Bogart, Benotsch, & Pavlovic, 2004; Brown, Budzek, & Tamborski, 2009). Further, in the context of organizational research, narcissism has been referred to as “false self-esteem” (e.g., Gardner & Pierce, 2011). Thus, there is potential for confusion between the concepts of fragile OBSE and narcissism and the distinction between the two concepts needs to be highlighted. Specifically, while narcissists have an aggrandized sense of self and a willingness to exploit others (Gardner & Pierce, 2011; Raskin & Terry, 1998), these characteristics are not necessary conditions or characteristics of fragile OBSE. It is entirely possible that a person with unstable, incongruent, and contingent OBSE could still have a very modest sense of self and still tend to defer to others’ interests. Indeed, researchers studying self-esteem (at the global level) have already found that fragile self-esteem is empirically distinct from narcissism and that the two concepts can have outcomes that are quite different (Bosson, Lakey, Campbell, Zeigler-Hill, Jordan, & Kernis, 2008). That being said, future organizational researchers may want to draw a distinction between fragile OBSE employees who are and who are not narcissistic. In particular, it seems that the defensive thoughts and actions associated with fragile OBSE might take a particularly unpleasant form when they are combined with the narcissistic tendencies of arrogance and exploitation.

Measurement

The dynamics described in this paper present special measurement challenges that will require creative research methods. Rather than relying on the current measure of OBSE level, new measurement methods are needed to tap the three sources of OBSE fragility proposed in this paper. We provide general directions and suggestions that could be taken to develop a measure of OBSE that captures the construct in a more dynamic way.
To measure how (in)stability affects OBSE, researchers might obtain multiple measurements of OBSE rather than relying on one point-in-time survey. Respondents could be asked about aspects of OBSE at several points over a period of time (cf., Kernis, 2005; Meier et al., 2009). In addition, experience sampling methods could be used. For example, “beepers” programmed to go off at designated intervals signalling employees to fill out OBSE measures at those times might better capture variance in OBSE associated with particular work situations (cf. Kernis et al., 1989). These methods are already being employed successfully by global self-esteem researchers, as well as by organizational researchers studying emotion (Amabile, Barsade, Mueller, & Staw, 2005; Fisher & Noble, 2004).

To measure how contingency affects OBSE, researchers may benefit from using qualitative methods such as semi-structured interviews to reveal personal standards of performance and work domains that are most relevant to employees. Interviewees could be asked to list and rank work-related tasks, outcomes, and processes that are most central or important to their self-concept. Diary studies could ask employees to note throughout the work day circumstances in which they feel threatened or defensive. In this way, researchers could learn which specific organizational domains contribute to OBSE (cf. Crocker et al., 2003a; Crocker et al., 2003b). Once key areas of contingency are identified, it may be possible to develop self-report psychometric scales for use in empirical studies (e.g., Kernis & Goldman, 2006).

To measure how (in)congruence affects OBSE, researchers will need to move beyond self-reports and explicit measures to assess implicit aspects of an employee’s OBSE. Currently, researchers are exploring implicit global self-esteem through use of implicit association tests (IATs) (Albers, Rotteveel, & Dijksterhuis, 2009; Greenwald & Farnham, 2000; Karpinski & Steinberg, 2006), and evidence regarding the validity and value of these tests is accumulating (Bosson, Swann, & Pennebaker, 2000; Greenwald & Farnham, 2000). With IATs, the speed with which respondents categorize pairs of items (e.g., self-other) with other pairs of items (e.g., pleasant or unpleasant) is measured. Self-esteem is then estimated based on how quickly (easily) respondents are able to categorize self items with pleasant rather than unpleasant items. The IAT then overcomes the problems of self distortion because it does not rely on introspection but rather on spontaneous responses (Greenwald & Farnham, 2000).

Practical Implications

The overarching pragmatic implication of our discussion is one of caution. Managers should be careful when drawing conclusions about employees based on their levels of OBSE as it may be unrealistic to assume that a high self-esteem employee will consistently exhibit altruistic and compliant attitudes and behavior across time and events. Rather, because high OBSE can be fragile due to at least three different contingencies, there are likely to be many different kinds of high self-esteem individuals for whom optimal management practices are likely to vary. More specifically, we believe that there are at least four things managers should keep in mind.

First, some employees may exhibit high levels of OBSE with very little fragility. These individuals may be relatively rare, but they are also the ones who are most likely to consistently exhibit the beneficial outcomes documented by past research. Thus, it may be beneficial to strategically place these individuals in jobs where these tendencies can be leveraged. Second, as noted in our discussion of optimal OBSE, individuals with fragile self-esteem are sometimes motivated to defend their self-concept by performing at higher levels (Buunk, Peiró, & Griffioen, 2007). These situations seem to occur when an interest in a particular task is combined with confidence in one’s ability to improve. We suggest that managers carefully match these individuals to the tasks they care about so that these motivational tendencies can emerge. Third, some employees may have high OBSE that is exceptionally fragile. These kinds of individuals are the most likely to exhibit unhelpful defensive reactions to organizational events threatening self-worth. Thus, it may be best to shelter them (where possible) from tasks where unflattering social comparisons or lower performance seem likely. Fourth, we believe that managers should be cautious when instituting employee-development programs aimed at raising employee OBSE levels. Managers should have evidence as to what kind (stable and confident vs. fragile) of OBSE is being nurtured before implementation of such a program begins.
CONCLUSION

While the study of OBSE holds considerable promise, we believe it has been impeded by the assumption that the OBSE-related behavior of employees is driven by a consistency motive and by the view that OBSE can be defined and measured simply by assigning a value of “high” or “low.” As an alternative, we have argued that OBSE can be more or less fragile, and we have proposed a dynamic and multi-dimensional view that allows for both positive and negative outcomes. We have proposed three sources that contribute to the fragility of OBSE and, ultimately, to defensive responses to protect self-worth. We believe this expanded view will problematize the study of OBSE and thereby open up interesting avenues for future research. Further, our model is an important step in helping researchers to better understand how and why OBSE fluctuates and with what effect.

REFERENCES


**ABOUT THE AUTHORS**

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Janelle R. Enns holds a PhD in Organizational Behavior and Human Resource Management from the Rotman School of Management at the University of Toronto, in Toronto, Ontario. Her research interests include group identification, justice, counterproductive work behavior, organizational citizenship behavior, and group processes.
The purposes of this study are to examine the relation between proactive personality and intention to leave a career and to test a boundary condition (i.e., career commitment) in which the effect does and does not hold. Participants consist of 1,527 full-time working adults from multiple organizations in the oil and gas industry. Results reveal a negative relation between proactive personality and intentions to leave a career that is moderated by career commitment. This finding suggests that career commitment may be an increasingly important construct to examine when considering various forms of turnover.

INTRODUCTION

In today’s society there is a premium placed upon attracting and retaining individuals that are capable of adapting to the rapid pace of change in organizations and industries. Unlike the previous decades where jobs were characterized as highly defined and structured (Campbell, 2000), 21st century jobs require greater initiative due to the changing nature of jobs (Frese and Fay, 2001). Coupled with these changes has been the rise of contemporary career perspectives (e.g., protean, Hall and Mirvis, 1996; boundaryless, Arthur, 1994; Arthur and Rousseau, 1996) that focus heavily on the individual rather than the organization. Today’s economic climate adds additional complexity. With many jobs being outsourced or otherwise becoming obsolete (i.e., advances in technology reduces the need for actual incumbents in a given job), incumbents voluntarily, and sometimes involuntarily, leave not only their current employers but their respective professions altogether. Taken together, there is a trend toward increased emphasis on identifying the “right” person to operate in such an evolving environment. Several authors suggest that proactive personality is precisely the personality trait that may allow individuals to flourish in this increasingly demanding, and changing, organizational environment (see Erdogan and Bauer, 2005; Fuller et al., 2010; Fuller and Marler, 2009).

Bateman and Crant (1993) conceptualized proactive personality as individuals who are relatively unaffected by situational forces. Moreover, people with proactive personalities look for opportunities to
initiate change in their environment. Proactive personality has been related to positive career outcomes such as engagement (Dikkers et al., 2010), performance (Crant, 1995; Thomas et al., 2010), satisfaction (Thomas et al., 2010), extrinsic (objective) and intrinsic (subjective) career success (Fuller and Marler, 2009; Seibert et al., 1999), career management behaviors (Chiaburu et al., 2006), affective organizational commitment (Thomas et al., 2010), work adjustment (Kammeyer-Mueller and Wanberg, 2003), and creativity (Kim et al., 2009). Despite speculation that proactive personality may, in fact, predict mobility, Briscoe et al. (2006) demonstrated that having a proactive personality did not predict changing jobs or employers frequently. The present study contends that because proactive people have greater intrinsic career success and become embedded in their careers, they are precisely the people that will not leave their profession. Specifically, this study seeks to test the relation between proactive personality and intention to leave their current profession. It also seeks to determine when proactive personality leads to positive outcomes (i.e., reduced withdrawal cognitions). Studies, with few exceptions (e.g., Erdogan and Bauer, 2005; Fuller et al., 2010), have ignored moderators of proactive personality. Thus, this study tests the role of career commitment as a moderator of the proactive personality – intention to leave the profession relation. The present study proposes that people higher on proactive personality who also have strong career commitment will be the most dedicated and therefore the least likely to intend to leave their profession. In short, the purposes of this study are to first establish that people higher on proactive personality are less likely to leave their profession than people lower on proactive personality, and second, to provide a boundary condition (i.e., career commitment) in which this effect does and does not hold.

**Proactive Personality and Career Change**

Proactive personality is rooted in social cognitive theory (Bandura, 1977) that suggests the person, environment, and behavior constantly influence one another. Over the past twenty years, there has been an increase in interest regarding proactive personality. Bateman and Crant (1993) proposed that proactive people are those who are capable of creating their own environment by demonstrating initiative and seizing opportunities often resulting in positive change. In sum, proactivity is about “making things happen” (Bindl and Parker, 2010). For instance, proactive people are likely to identify inefficient or ineffective aspects of the work environment and effect change. Whereas individuals who lack proactive personality (i.e., passives) are likely to take a reactive approach to their environment and subsist in current situations (Bateman and Crant, 1993). Perhaps, not surprisingly, a growing literature demonstrates that people with proactive personality attain high job performance (e.g., Fuller et al., 2010; Thomas et al., 2010) and career success (Fuller and Marler, 2009). A recent meta-analysis highlighted the positive relations between proactive personality and objective (e.g., salary, promotions) and subjective career success (e.g., job satisfaction, perceived career success), contest (e.g., job performance) and sponsored mobility (e.g., taking charge), as well as relationships with supervisor and employability (e.g., learning goal orientation; Fuller and Marler, 2009). Such comprehensive work undoubtedly demonstrates that proactive people are likely to experience greater work and life success than passive people. The specific behaviors that proactive people engage in include, for example, networking, career planning, accumulation of political knowledge, and high quality exchange relationships with supervisors. There is some debate regarding proactivity as being a stable tendency or a pattern of behaviors at work. In this research, the focus is on proactivity as being a stable disposition.

Despite these seemingly overwhelming positive outcomes of proactive personality, there has been speculation that proactive persons will be likely to leave their organizations or professions in their pursuit to create constructive change. Allen et al. (2005, p.982) suggested persons with proactive personality may “make changes, act to solve problems, and actively pursue possibilities that could advance their interests and careers” often that involve quitting. Crant (2000) also suggested that proactives may be less likely to adapt to less than ideal circumstances and therefore may seek to identify new circumstances that better accommodate their needs. Thus, there is some evidence that proactive personality is related to increased likelihood of both organizational and career turnover. In order to understand the rationale behind this suspicion, this study addresses the contemporary conceptualizations of careers.
A protean career has been conceptualized as the psychological success derived from individual career management determined by the interactive effects of two meta-competencies: self-awareness and adaptability (Hall, 2004). High self-awareness and adaptability result in pro-activity or “smart performance.” Ultimately, the protean career is defined by employability and a drive to learn (Briscoe et al. 2006; Hall and Mirvis, 1996). Similarly, boundaryless careers also emphasize proactivity, but directed more towards building and sustaining work-relationships across organizational boundaries. Although protean and boundaryless career attitudes arguably lend themselves toward greater employment mobility, the developers of these career conceptualizations have suggested that while mobility is an aspect of these contemporary careers, it does not have to be physical employment mobility (Briscoe et al., 2006; Hall, 2004). For example, Briscoe et al., (2006, p.32) suggested that “a person could embrace a boundaryless mindset, yet rely on one organization to develop and foster his or her career.” Thus, although proactivity is inherent to protean and boundaryless attitudes, it does not mean that a proactive person is constantly looking for (or taking) new job or career opportunities (Briscoe et al., 2006). In effect, Briscoe et al. (2006) emphasized that proactivity is not synonymous with quitting.

In part to address this speculation, Briscoe et al. (2006) found a null effect on the relation between proactive people and job change, and proactive people and number of employers per year. The absence of a significant effect between mobility preference and affective commitment was also revealed by Briscoe and Finkelstein (2009) debunking the notion that proactives lack interest in committed employment relationships. And, interestingly, Fuller and Marler (2009, p.340) echoed this finding by demonstrating a correlation between people with proactive personality and organizational commitment, concluding “employers should not fear people with proactive personalitites will necessarily exhibit cross-organizational mobility.” Along the lines of Fuller and Marler’s (2009) rationale, this study contends that proactive people’s behaviors and attitudes may, in fact, allow them to be increasingly engaged in their work and embedded in their organization and career. For example, proactives seek novel, challenging experiences so perhaps engaging in developmental work experiences fulfills that need. Similarly, proactives have high learning goal orientation so jobs that provide cross-functional training opportunities may again fill this desire. In sum, there is a growing body of research that contradicts earlier findings regarding the deleterious effect of proactivity on relevant organizational outcomes (e.g., organizational commitment, turnover).

Given that today’s work environment is “boundaryless,” Weick (1996) posited that employees are likely to have opportunities for “new beginnings” in their careers. Career change is an example of one such new beginning and has been defined in a variety of ways (i.e, intra-organizational change, cross-organizational change; Sullivan, 1999). The current research examines proactive personality and its influence on career change. Using the protean career perspective, this study posits that proactives may develop strong connections with a network of individuals related to the career that simply draw the proactive person closer to the profession rather than luring the individual elsewhere. Previous research has typically examined the relation between proactive personality and job change rather than career change. This study seeks to test the notion that proactive people are not always looking for career change, and in fact may be precisely the individuals who engage in opportunities and experiences that embed them in their organization and profession. Thus,

**Hypothesis 1:** Proactive personality predicts intention to leave career such that individuals who are higher on proactive personality are less likely to intend to leave career than individuals who are low on proactive personality.

**Role of Career Commitment**

Commitment is considered to be attitudinal in form (Mowday et al., 1979), defined by an enduring emotional attachment and alignment of goals (Cooper-Hakim and Viswesvaran, 2005). The general construct of commitment is very broad; however, it becomes more specific when considering its five foci: job, organization, work-group, career, and value-driven (Blau, 1989; Morrow and McElroy, 1986). Although organizational commitment is often the construct of interest in the literature, career commitment...
may be increasingly important as employees are becoming more committed to their careers than to their respective organizations (Somers & Birnbaum, 2000). Blau (1985) conceptualized career commitment as an individual’s attitude regarding his or her profession or vocation and a “willingness to remain present in one’s career.” Aryee and Tan (1992, p.289) further defined career commitment as the “…identification with a series of related jobs in a specific field of work that is behaviorally expressed in an ability to cope with disappointments in the pursuit of career goals.” Previous research reveals a number of important outcomes associated with high levels of career commitment. For instance, high career commitment is related to high job satisfaction (Siu, 2002), performance, and career success (Mrayyan and Al-Faouri, 2008). Similarly, Jones and Whitmore (1995) found a positive relation between career commitment and promotions. Likewise, Day and Allen (2004) found a link between career commitment and performance. More relevant to the current research, career commitment has been shown to be negatively related to withdrawal intentions and turnover (Aryee & Tan, 1992; Blau, 1989). In effect, individuals who are low on career commitment may be motivated to seek a different type of career. Thus, there is clear evidence that career commitment is related to a number of positive outcomes.

This study proposes that when the role of career commitment is considered, there may be a change in the nature of the relation between proactive personality and intentions to leave. This study suggests that proactive people who are also committed to their careers will be the least likely to experience withdrawal cognitions. These people are likely the employees who demonstrate initiative and seek ways to improve their current organizational and professional environment, rather than seeking new or different careers. Where it is possible to see proactive people leaving, as suspected in the literature, is when they lack commitment to their career. Perhaps these individuals “fell” into their career at an early age, or given the growing orientation to boundaryless or protean careers, they are tempted to seek alternative paths. The proactive individuals who experience low levels of commitment to their career may seize external opportunities whereas proactive individuals with high levels of commitment may seek out internal opportunities for change. Therefore, it is important to consider career commitment in concert with proactive personality in order to more fully understand the type of employees that potentially experience withdrawal cognitions, and ultimately change in careers. Thus,

Hypothesis 2: Career commitment moderates the relation between proactive personality and intention to leave career such that the negative relationship is strongest when career commitment is highest.

METHOD

Participants

The final sample of participants consisted of 1,527 full-time working adults from multiple organizations in the oil and gas industry nationwide who were members of the American Association for Professional Landmen (AAPL). Participants were recruited for participation through their local association and were provided with a link to the online survey that was housed on the AAPL homepage. A landman (a term inclusive for both men and women) negotiates deals and trades with other companies and individuals, drafts contracts, acquires leases, and ensures compliance with governmental regulations. Landmen, in this sample, were full-time employees for large oil and gas companies (e.g., ExxonMobil, BP). The response rate for this study was approximately 22% (with a total of 1,527 complete responses) out of approximately 7,000 AAPL company landmen members.

The sample was predominantly male, 70% (n = 1,063). Participants ranged from 20 to 91 years of age, with a median of 42 years of age. The majority of participants reported earning a bachelor’s degree, 65% (n = 992), and 10% reported earning a master’s degree (n = 145) and juris doctorate (n = 146), respectively. Participants reported a wide range of experience ranging from six months to 51 years with a median of 18.5 years. Participants lived across the United States (i.e., New York, Pennsylvania, West Virginia, Alabama, Tennessee, Mississippi, Kentucky, Ohio, Indiana, Michigan, North Dakota, Montana,
Kansas, Louisiana, Arkansas, Oklahoma, Texas, Colorado, Wyoming, Utah, New Mexico, and California), but approximately half of participants (48%) were from Texas.

**Procedure**

Participants who agreed to participate in the study clicked on a link to an online survey. The survey took approximately 15-20 minutes to complete. Participants answered a series of closed-ended items regarding perceptions and attitudes towards their current organization and career, as well as a series of questions related to demographic information.

**Measures**

*Proactive Personality*

Proactive personality was measured using Bateman and Crant’s (1993) scale. The proactive personality scale consists of 10-items that included, for example, “If I see something I don’t like, I fix it.” Participants responded on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) (α = 0.85).

*Career Commitment*

Career commitment was measured using eight items from Blau’s (1985) scale. Sample items included: “I definitely want a career for myself in the Land Profession,” “If I had all of the money I needed without working, I would probably still continue to work in the Land Profession,” and “If I had it to do all over again, I would not choose to work in the Land Profession.” Participants responded on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) (α = 0.84).

*Intention to Leave Career*

Intention to turnover was measured using three items based upon the research of Mobley et al. (1978) and Mobley et al. (1979). The items included: “I think about quitting the Land Profession,” “I will actively look for a new Profession,” and “I intend to change professions within the next five years.” Participants responded on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) (α = 0.81).

*Covariates*

Because this study was interested in perceptions of career commitment and intentions to leave career, it was important to recognize that the sample’s demographic composition may have affected the findings. Thus, to control potential confounds, participants’ age, years of experience, and gender were utilized as covariates in the regression analysis.

**RESULTS**

Overall scale means, standard deviations, and intercorrelations are reported in Table 1.

In order to test Hypothesis 1, age, years of experience, and gender were entered as controls in Step 1. Proactive personality was entered in Step 2. Hypothesis 1, individuals who are higher on proactive personality are less likely to intend to leave career than individuals who are low on proactive personality, was supported (β = -1.05, ΔR² = 0.01, p < 0.01). The results confirmed Hypothesis 1 and suggested that proactive personality influences intention to leave the profession. Specifically, individuals who were higher on proactive personality reported reduced withdrawal cognitions relative to those individuals who were low on proactive personality.
Moderated regression was used to test Hypothesis 2 (Aiken and West, 1991). The controls in Step 1 included age, years of experience, and gender. In Step 2, the main effects were entered, proactive personality and career commitment; and, in Step 3, the interaction term of proactive personality X career commitment was entered. Hypothesis 2, career commitment moderates the relation between proactive personality and intention to turnover such that individuals who are higher on career commitment and proactive personality report reduced intention to leave career than individuals who are lower on career commitment, was supported ($\beta = -0.05$, $\Delta R^2 = 0.003$, $p < 0.05$). See Table 2.

This finding suggests that there was a difference in intention to leave the profession based upon an individual’s career commitment. Individuals who were higher on proactive personality and career commitment (i.e., dedicated to the Landman career) report lower intentions to leave career than individuals lower on career commitment. Thus, career commitment is a key variable when examining who experiences withdrawal cognitions. See Figure 1.
FIGURE 1
INTERACTION OF PROACTIVE PERSONALITY AND CAREER COMMITMENT ON INTENTION TO LEAVE CAREER

DISCUSSION

The current study sought to examine the relations between proactive personality, career commitment, and intentions to leave one’s career. As expected, results reveal support for a strong relation between career commitment and intentions to leave one’s career. Furthermore, the current study provides a test of the relation between proactive personality and intention to leave career as well as examines the extent to which career commitment influences this relation. This is the first study to address this relation, and suggests that the assumption that proactive people are more likely to seek new careers is incorrect. In fact, people with proactive personality (who are also high in career commitment) may be precisely the people who are likely to remain in their career. This study also examines the role of career commitment in this relation to determine when this effect may and may not hold. The present research suggests that low levels of career commitment attenuate the relationship between proactive personality and intentions to leave career. Conversely, high levels of career commitment strengthen the negative relation between proactive personality and withdrawal cognitions, enhancing the likelihood proactive people will remain in the current career. This is a potentially important finding as it has been assumed that commitment was not a factor in the extent to which proactive individuals change jobs. However, it is also important to note that regardless of degree of proactive personality, there is a significant and negative relation between career commitment and intentions to leave career. In effect, individuals who report greater commitment to their career are less likely to leave their careers than those who report lower levels of career commitment. This study contributes to what Briscoe et al. (2006) and Fuller and Marler (2009) suggested, which is that commitment may influence the attitudes and behaviors of proactive people. Motivational theories have suggested a number of ways for organizations to structure jobs in order to increase organizationally relevant constructs. However, there is little research that specifically examines how these theories may be used to influence career commitment, in general, and more specifically, for proactive individuals in particular. Future research needs to specifically address how employers can foster such career attitudes among their proactive employees.

Implications

Even in the face of an economic slow-down, turnover remains costly to organizations. Given the tightening of budgets and, in many cases, the slashing of resources dedicated to recruitment, selecting employees who will not only perform, but also remain at the organization becomes increasingly important. From a selection perspective, one way to reduce turnover is to hire individuals who have “strong personality” traits, as these individuals are less likely to be influenced by situational factors
(Locke & Latham, 2004). Moreover, there are many “weak” situations in the workplace where personality likely influences behavior (Seibert et al., 1999) therefore reinforcing the importance of hiring individuals with the “right” personality traits. The growing body of research on proactive personality, including this study, demonstrates that proactive people are the right people; they are likely to achieve job and career success and this study also shows that they are less likely to leave their career than passives. This study echoes the call by Briscoe and Finkelstein (2009) for employers to avoid stereotyping proactive people as “risky investments.” The current research demonstrates that proactive people may, in fact, be the safe investment, particularly when these individuals are committed to their career.

The findings suggest that career commitment may be an increasingly important construct to examine when considering various forms of turnover and therefore educating all individuals about a given profession may be more important than an organization offering a wide-array of opportunities or benefits to entice and retain employees. Perhaps professions should consider creating a selection process, of sorts, when it comes to helping individuals make career decisions that involve gathering of data, informational interviewing, and developing an in-depth understanding of what day-to-day life will be like in a specific career field. In addition, organizations might consider continuing education initiatives for employees that enable them to stay current in their respective fields thereby providing them with a deeper understanding of their career. In effect, professions should provide prospective workers with realistic career previews in order to ensure future workers have a full understanding of the opportunities that do and do not lie ahead. If there is, ultimately, lack of career commitment, people may leave the profession. Therefore, greater consideration may need to be given as to not only how employers compete to attract and retain talent, but also how professions compete to attract and retain talent.

Moving beyond the recruitment and selection phases, organizations may need to provide comprehensive career development opportunities in order to retain the proactive persons who are very career-oriented and committed to the careers. For example, Verbruggen et al. (2007) examined the relationship between organizational career management (i.e., practices concerned with the career development of employees such as a training course or career action plan) and external career counseling (i.e., counseling done independent of the employer), revealing a complex relationship. The authors’ suggested organizational career management partly led to employees’ seeking external career counseling through individual career management. In effect, employees who received career support from their employer were more satisfied with their career and less likely to seek external counseling. However, findings also revealed that organizational career management partly reduced the need to seek external career counseling due to enhanced career satisfaction of the employees. It can be argued that proactive individuals who are committed to their profession would likely be the individuals who receive organizational career management (i.e., career action plans) resulting in enhanced career satisfaction rather continuing to seek external career counseling. Similarly, Chiaburu et al. (2006) revealed that proactive personality positively predicted career self-management behaviors, mediated by career resilience. Therefore, organizations that offer career management and/or counseling may be able to appropriately satisfy and advise proactive people, ultimately resulting in the retention of these individuals. In summary, organizations may facilitate the retention of proactive people by creating organizational career management practices as well as internal career counseling.

Limitations

In the present study, caution should be used when generalizing the findings. Although the sample consisted of working adults, it consisted of only one type of career – landman. Therefore, it is unclear whether these findings will translate to other careers. It should also be noted that the occupation of landman should be considered a career, as there is a professional orientation that takes into consideration their education, training, and professional associations. Blau (1985) makes a similar case in his study using a sample of nurses. Therefore, although the findings may generalize to other careers, it is important to replicate these findings in a more diversified sample of careers. A second limitation is that this study does not report actual turnover, only intentions to leave. Therefore, the comments related to actual departure from careers must be interpreted with caution, as these findings do not capture actual turnover.
The findings also cannot answer the question of whether people change careers or simply change organizations within their chosen profession. However, although withdrawal cognitions are an imperfect predictor of turnover, they are consistently found to be one of the best predictors (Griffeth et al., 2000). Third, it is important to note that there is a significant correlation between career commitment and intention to leave career (-.66) which may be indicative of multicollinearity. Although the two variables (career commitment and intention to leave career) are correlated, they are different conceptually: career commitment is a variable that could vary according to state-based variables, such as pay in the career and opportunities to advance in this career, while the variable proactive personality should be more stable over time. Thus, although they are highly correlated, conceptually, they are fundamentally different. Finally, it is important to acknowledge that the response rate for this study was 20% which was lower than anticipated. Although this is a seemingly low response rate, current methodological reports indicate that the average response rate for online survey research is 30% (Marsden & Wright, 2010). Thus, keeping in mind this average response rate helps to reduce concerns over the response rate for the current research.

**Future Research**

Future research should seek to replicate these findings in other career fields in order to demonstrate the validity of this study. It is important to demonstrate the reliability of this finding before fully accepting that proactive people are indeed less likely to leave than passives. Future research should also test the findings at the organizational level, rather than career level. Turnover research typically considers the job, or organizational level (Mobley, 1977). Given that there is a different set of referents for determining job versus career attitudes, it is important to test for differential effects in future studies. Future research should also explore the proposed mechanisms to reduce withdrawal cognitions. Engagement and embeddedness are the likely mechanisms for retaining people with proactive personality; however, this has not been tested. Broader models identifying the mediators of this relation could clarify why proactive people have reduced withdrawal cognitions. This is important for organizations, as it will help to clarify how organizations can foster such mechanisms that result in proactives remaining in the career.

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China’s Socio-economic Transformation and Sino-U.S. Joint Venture Companies in China

Osman Ozturgut
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China’s socioeconomic transformation resulted in enormous opportunities as well as tremendous challenges for joint venture companies. China continues to present a highly complex environment for most foreign firms. As the number of the joint ventures increase in China, certain conflicts appear. This study explores the political, economic, and socio-cultural challenges of Sino-U.S. joint venture companies in China. It is concluded that there are many challenges and there is no immediate solution. China is willing to open up its doors but at the same time struggling to maintain its social, cultural, economic, and political norms and values.

INTRODUCTION

Everyone knows of the Great Wall. It fascinates Chinese and foreigners alike, and at both the popular and official levels. By the late nineteenth century Westerners were even developing a whole romantic representational genre based on the Wall. There was once a remarkable claim first made explicitly by Geil in 1909 that “The Great Wall would be visible from the moon” (p. 17). The Great Wall was a symbol of Chinese cultural nationalism, a phenomenon as an attempt to create, support, and foster integration by means of putting it forth as a cultural and historical symbol. It represented (and still represents) the encounter between “modernity” and “tradition” that has dominated Chinese intellectual discourse, setting the terms of cultural and political debate (Geil, 1909).

Even though China is one of the oldest nations in the world, it has never been totally colonized by Western powers (Selmer, 2001). Few medieval contacts with Europe disturbed or influenced the Chinese scheme. Travelers such as Marco Polo or Frior Odoric found that there was much they could take away with them, but little they could leave behind (Purcell, 1936). The Great Wall of China protected China from external interferences, both physically and symbolically. However, with the increasing developments at this information age, China is struggling with the entrance of Western ideas and ideologies. For this reason, by opening its doors willingly, China is trying to control the expansion of western ideas. This study explores the political, economic, and socio-cultural challenges of running a Sino-US joint venture in the ‘Middle Kingdom’. The Middle Kingdom is what the Chinese call their country: Zhongguo.

BACKGROUND

There is extensive literature on the operational challenges of ‘Sino-Foreign joint ventures’. Many studies discuss a wide range of issues pertaining to joint ventures. (Boisot & Child, 1988; Willis, 2000a;
Little, 2000; Child, 2000; Hofstede, 1980). However, even such studies have shortcomings and need for extensive research to add knowledge to the current literature is imperative. China’s socioeconomic transformation resulted in enormous opportunities as well as tremendous challenges for joint venture companies. China continues to present a highly complex environment for most foreign firms. As the number of the joint ventures increase in China, certain conflicts appear. First, Westerner’s individualistic orientation and the Chinese partner’s collectivistic orientation create conflict (Jen, 2001). Second, Chinese laws are not written as tightly as U.S. laws, so even if partners feel they are complying with the laws, they may be interpreted more broadly in such a way that partners are considered not to be in compliance (Atkinson, 2004). One consideration is that Chinese industry is characterized by strong subcultures. People identify closely with particular work units, regions and municipalities (Child, 1994). These subcultures, generally stronger than those found within less diversified and less traditional societies “challenge the cohesion of any large Chinese conglomerate” (Child, 2000, p. 40). A widely held perception persists among foreign managers that the conditions for doing business in China are highly unpredictable.

Even though international joint ventures are rapidly growing organizational form and there is substantial research on the operation of such organizations, academic understanding of joint ventures is still limited in scope and in depth. Previous studies have reported high failure and instability rates among joint ventures (Franko, 1971; Harrigan, 1986; Kogut, 1989; Levine & Byrne, 1986; Jing, 2012), and the factors predicting successful venture performance remain unclear (Geringer & Hebert, 1991; Parkhe, 1993). Table 1 presents some of the problems in managing East-West Joint Ventures.

<table>
<thead>
<tr>
<th>Western Partner</th>
<th>Eastern Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of knowledge and understanding of the environment, market and specific company</td>
<td>Lack of understanding of Western business practices</td>
</tr>
<tr>
<td>Profit expectations too high</td>
<td>Pay expectations too high</td>
</tr>
<tr>
<td>Superiority complex</td>
<td>Inferiority complex</td>
</tr>
<tr>
<td>Stereotyping</td>
<td>Stereotyping</td>
</tr>
<tr>
<td>Lack of Communication</td>
<td>Lack of communication</td>
</tr>
<tr>
<td>Lack of intercultural management</td>
<td>Lack of basic management skills</td>
</tr>
<tr>
<td>“Plantation syndrome”</td>
<td>Militant, politicized trade unions</td>
</tr>
<tr>
<td>Poor negotiations skills</td>
<td>Poor negotiations skills</td>
</tr>
</tbody>
</table>

(Source: Kozminski, 1995, p. 121)

JOINT VENTURE COMPANIES IN CHINA

Since the reopening of China for business in 1978, joint ventures have been the most frequent entry mode for small and medium-sized international firms, and various leading multinational companies (Child, 2000; Jing, 2012). China has embarked on a further major phase of enterprise reform in which the promotion of giant enterprises, new forms of corporate governance, entrepreneurship and internationalization are to be the key elements. Child asserts that this evolution will have an impact on foreign-invested firms in China, many of which are already in the process of reevaluating China as an investment environment and their policies on partnership with domestic firms in that country. Table 2 outlines the motivations of Chinese and Foreign firms in forming a partnership.
TABLE 2
REASONS WHY FOREIGN AND CHINESE FIRMS ESTABLISH JOINT VENTURES

<table>
<thead>
<tr>
<th>Foreign Firms</th>
<th>Chinese Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huge market potential</td>
<td>Government objectives to attract foreign investment</td>
</tr>
<tr>
<td>Possible advantage of being ‘first in’</td>
<td>Access to technology and skills</td>
</tr>
<tr>
<td>Competitor pressure</td>
<td>Learn modern management skills</td>
</tr>
<tr>
<td>Fits in with business portfolio</td>
<td>Export opportunity</td>
</tr>
<tr>
<td>Partner has local knowledge</td>
<td>Probably, much needed finance provided by foreign firm</td>
</tr>
<tr>
<td>Understand macro environment</td>
<td>Increase market share</td>
</tr>
<tr>
<td>No need to spend time building Guanxi</td>
<td>Access to marketing expertise</td>
</tr>
<tr>
<td>(Chinese partner already has Guanxi)</td>
<td></td>
</tr>
</tbody>
</table>

*Adapted from Daniels et al., (1985)*

Alvez, Manz and Butterfield (2005) speculated that the twenty-first century is going to be characterized by an increasing influence of Chinese companies, business persons, and leadership styles in the global economy, and that this will alter existing conceptions of business, management, and organizations, at least as they have been viewed in the West. Since 1978, the rate and pace of cooperation has accelerated and gathered even more momentum.

CHALLENGES OF RUNNING SINO-US JOINT VENTURE COMPANIES IN CHINA

Xuan and Graf (1996) argued that when investing in China it is important to know about the economic, legal [political], and the socio-cultural environment in the country. This study will explore the political, economic, and socio-cultural challenges of running a Sino-US joint venture company in China.

Political Challenges

Dunne (1995) explained that “The ‘Middle Kingdom’ has been locked to outsiders for 5,000 years, and Western traders since the 18th century have been struggling in search of the keys” (p. 14). However, since 1978, China has approved more than 212,000 joint ventures, reflecting the nation’s strong preference for cooperative development projects. For Westerners, they have finally found a hole to go through the Great Wall, but they are rarely aware of the challenges inside the Wall, and their excitement does not last long. Now, they have to find their ways through the Chinese political, economic, and socio-cultural puzzle. For example, any company expanding into China must identify which government agencies are in charge of their industry as “nowhere are the ambiguities of operating in China more pronounced than in the legal sphere” (p. 16).

China did not actually have a law pertaining to companies that operated on Chinese soil until 1904. Kirby (1995) explained that it was not until January 21, 1904 that the Chinese had a company law outlining the operation of companies on Chinese soil. This date, the Ministry of Commerce [newly established then] issued China’s first company law. These laws were structured so that China would no longer suffer the humiliations at the hands of Japan and the Western powers. Qing government’s new reformist policies were initiated as a tool to promote China’s industrial development. It was only then that the Chinese accepted modern industrialist capitalism which demanded the Chinese to do business with Westerners. Li (1974) argued that the major goal was to promote the creation of Chinese companies to compete with the foreigners who were producing and marketing their goods on Chinese soil. Over the years, different governments made changes to the Law. Qing reformer’s idea was that adopting the Western model for the development of private Chinese enterprises would be a mistake, in the sense that Western models cannot be taken as they are, but, need to be changed according to the overall cultural and political structure. That is, Western models were designed for the Western countries and adoption of the
Western models for Chinese companies would not be beneficial. With the government officials who are trained and schooled in an entirely different ideology, joint venture managers are often puzzled. Enormous potential for misunderstanding influence the daily operations, and quick decision-making becomes but a dream. Even though China is enjoying its smoothest days for regulatory environment and relative stability, clashes between foreign companies and Chinese government still occur daily, strengthening the mindset of Chinese officials.

Existence of the CCP structure in each enterprise, operating parallel to the administrative structure, is the most prominent problem. The Party secretary has always been powerful and has significant decision-making power. Chen (1995) pointed out that factory directors, managers, workshop heads and production team leaders have the authority to direct and command their subordinates. However, they are supposed to be red (ideologically loyal to the CCP) and specialist (in managing their own fields). In this case, being red is more important.

Tse, Au, and Vertinsky (1996) argued that the choice of levels of government interference may bear greater significance in China than in other market economies because they represent different risks to the investing forms. Generally speaking, the higher the level of government involved, the more secure the ventures. “This is because higher level governments have more authority in approving projects, interpreting government policies, and exercising controls” (p. 144).

Chinese government still has an extensive role in the Chinese economy. Therefore, bureaucracy has exceptional power when conducting any form of business. Osland and Cavusgil (1996) state that U.S. managers in China needs to have a better recognition of the importance of understanding of how government functions and how they can influence government decisions. For example, having a local partner certainly enables foreign companies to develop close connections with government decision-makers. They have finally realized that they had to adapt their policies in accordance with the ideology of the CCP, without abandoning the real purpose of their presence in China. “Foreign firms had to understand and deal with a complex, often confusing web of government entities to ensure that their business operations were not adversely impacted by changes in government policies or bureaucratic whims” (Sanyal & Guvenli, 2001, p. 41).

Su (1999) pointed out that China is experiencing a dynamic reconstruction where disorder is an integral part of the society. This consists of “an absence or lack of effective laws, increasing problems of business ethics, bureaucracy, and the government’s ambiguous role in the economy with respect to enterprises” (p. 1). With regard to joint ventures, the Chinese local authorities too often tend to intervene in management and consider the international joint ventures as state companies and therefore under state control.

The influence of the CCP is ensured in all business organizations through assigning members to such organizations. Foreign-owned firms are required to have a Chinese citizen, nominated by the CCP, as chair of the joint venture’s board of directors. Having a representative from the Chinese Communist Party in the administration becomes a challenge for the U.S. managing representatives. These managers, in this context, are not necessarily familiar with the political agenda, coming from a democratic society, and usually are not aware of the challenges of having a representative from the CCP, prior to their arrival. Politics is one of the topics that they are not allowed to talk about, as instructed by their employers in the United States. Also, managerial skills of these American managers depend extensively on structured communication systems (Williamson & Zeng, 2004) and minimal government intervention whereas in China such infrastructure for communication does not exist, and uncertainty of the laws and regulations make it frustrating for American managers. Due to the sensitivity of the political discourse in China, American managers are also not ‘going there’ but focusing on the economic concerns related to their duties. This uncertainty and silence creates a gap in the current literature exploring the political context of running a joint venture in China.

**Economic Challenges**

Holton (1990), after interviewing several joint venture managers in China, found that a major hurdle in the negotiating process leading to the establishment of the joint venture was the question of the number
of the employees to be hired. The Chinese wanted the joint venture to employ far more workers than did
the foreign partner. “Iron rice bowl” employment system, established by the state assures that employees
have permanent employment and job security until they decide to leave their positions willingly. This
overstaffing, a legacy of “iron rice bowl” system is still present in Chinese state owned enterprises
partners in Sino-US joint ventures disturbs American managers for which they may result in low levels of
productivity (Glover & Siu, 2000).

Holton (1990) further added that the workers in the joint venture continue to be employees of the
Chinese partner and are essentially seconded to the joint venture itself. That is, Chinese staff is not as
willing to cooperate with the American administrators as they are with their actual employer, the Chinese
partner. Chinese staff considers the Chinese partners as main employers and are loyal to them and rather
unwilling to take orders from American partners. This is mostly due to the fact that most Chinese
employees are hired by the Chinese partners, except in some cases of mid-management and top
management positions. In hiring, priority is given to children, friend, and relatives of existing employees
(Verma & Zhiming, 1995) and sometimes because of the political affiliations and/or military background.

Another economic challenge that the American managers face in a Joint Venture is the wages of its
employees. Holton (1990) found that most American managers of joint ventures in China are especially
unhappy with the policy requiring Chinese counterparts of U.S. managers to be paid salaries comparable
to the Americans. Chinese culture emphasizes harmonious interpersonal relationships in the workplace
and avoids interpersonal competition within the organization. This wage gap between the local and
foreign staff certainly becomes a handicap in the cases of such partnerships. The Chinese argue that there
should be equal pay for equal work. Under the former socialist system, income polarization in China was
discouraged, and spiritual incentives were preferred to material rewards. American managers usually get
9-10 times more than what their Chinese counterparts are getting in terms of wages within the joint
venture. Most get a free furnished apartment with utilities paid. Even though food is relatively
inexpensive in China, some joint ventures pay for the food, as well. In addition, they are given at least one
round-trip flight ticket from and to their country of residence. American partner’s justification is that,
even paying 9-10 times more than what the Chinese are getting is not enough compared to what they
would be getting back in America. Also, Americans living abroad have to support their families back
home and maintain their health insurance, social security, mortgage, student loans, car payments, etc.

While the Chinese economy has grown rapidly over the past 20 years, the rate of growth has varied
greatly among different provinces. Average annual total income per capita in Southern Provinces is
1243.87 Yuan ($1= approximately 6.2 Yuan). National average total annual income per capita is 882.03
Yuan. It gets as low as 649.51 in Guizhou (National Bureau of Statistics of China, 2005). In Henan, total
income per capita is 721.10 Yuan and “a teacher’s salary at Qinghua [in Henan Province] is generally a
little more than 1,000 Yuan and some teachers may make more than 2,000 Yuan (Gu, 2000, p. 4). Thus,
when the American managers receive wages and other benefits totaling 9-10 times more than what the
Chinese are receiving, it evokes certain negative feelings with the Chinese partners. Sovic (2006) explains
that many Sino-foreign joint ventures lose their local employees to local companies after providing them
with extensive training. Chinese employees consider that opportunities for career development and
promotion are much greater in Chinese companies than in such joint ventures. Especially with the
existence of two-tier pay systems, Chinese employees do not see a visible career with Sino-foreign joint
ventures (Rein, 2007).

However, gap in pay structures does not necessarily cause the major disturbance for the Chinese in
state owned companies as Chinese pay structure (compensation levels) is also determined by seniority,
political orientation, and nepotism (Ding et. al., 1997). It causes a problem when working for foreign
companies that the Chinese demand to be compensated according to Deng Xiaoping’s principle, which he
established after 1978, as each person should be compensated according to his/her work (Easterby-Smith,
Malina, & Yuan, 1995).
Socio-Cultural Challenges

Chinese culture has a long history, showing great persistence and coherence. The roots are primarily in the religio-philosophical traditions of Confucianism, Buddhism and Taoism (Shi & Westwood, 2000). Harmony is a core element, central to the main religio-philosophical traditions and critical in orientations to the self, environment and social relationships. “A ‘harmony-with’ the environment is prescribed rather than the ‘mastery-over’ prescribed in the western tradition” (p. 191). This entails a non-interventionist, outer-directed and situation-accepting orientation (Leung, 1992) in contrast to a Western problem-solving orientation (Adler, 1991). Adler (1991) has also compared leadership theories. Having examined two kinds of leadership theories, Adler concluded that participatory management models, which are widely encouraged by American theorists and managers, are not appropriate for many cultures.

In his 2004 article Xiaohua argued that dealing with cultural differences is a major concern to international business scholars and practitioners. He suggests that encouragement of cultural adaptation or learning process may increase the congruence between culturally different partners and ultimately improve the effectiveness of international business relationships. However, business people from certain national and cultural backgrounds may have a stronger or weaker tendency toward cultural adaptation. Adaptation is a key mechanism for coping with negative diversities in ongoing interactions with alliances, and participants in cross-cultural alliances need to adapt to each other on both business and cultural levels. Functioning in a foreign culture with a reasonable comfort level requires a general understanding of the concept of culture and a generalized understanding of the national norms with which the partners have to deal. Knowledge from this cultural understanding process is useful to the manager trying to predict cultural events. Tinsley and Pillutla (1998) and Simintras (2000) argue that when individuals conduct business across national borders, they often bring to the negotiation table diverse cultural predispositions when they are interacting with the local partners. Therefore, interaction between international partners cause issues since cultural differences in beliefs, attitudes, values, and behavior patterns often lead to “misunderstanding, misconception, and miscommunication” (Xiaohua, 2004, p. 37).

Xiaohua further argued that cultural adaptation goes beyond simply adapting business practice, but involves understanding, adjusting to, and learning about the other party from a cultural standpoint. Li et al. (1999) suggested that managers in the parent firms need to consider how the characteristics of the managers they send to the Joint Venture will affect the functioning of the Joint Venture leadership team and the venture’s overall success. Tsang (1999) explained this challenge as: “Managers from industrialized countries are ready to teach native Chinese staff, but seldom do they realize that they can learn something from the locals” (p. 94). Westerners are anxious to “teach the rest of the world” (Xiaohua, 2004, p. 39).

Age and experience may even complicate the situation further. The Chinese managers expect age and general life experience to be given some priority in discussions and decisions, whereas the foreign managers usually place more importance on expertise and experience specific to the nature of the joint venture. Chinese joint venture managers are generally older than their counterparts. In traditional Chinese culture, elders are respected. As a result, older Chinese managers expect younger members to respect them. However, for Westerners, respect for age will not even be an issue, resulting in friction and strain (Li, Xin & Hambrick, 1999). Chinese partners judge the expertise and credibility of the foreign partners first on the reputation in the industry they are in and the second, by the most senior person appointed by the foreign partner to the venture to manage the operations in China. This senior person needs to be an expert in the field and also have the capability to gain the respect and the trust of the Chinese partner.

Chinese social systems are characterized by hierarchical but networked leadership patterns. Chinese managers/leaders occupy “pivotal positions and have legitimized power to make decisions and allocate resources, but such decisions must reflect and balance network members’ interests and sustain good relations” (Shi & Westwood, 2000, p. 205). They believe that groups are more powerful than individuals. Groups have more wisdom and individuals should not contradict the opinions of the groups, especially the opinions of the group leader. Also, Street and Matelski (2003) explained that “unlike Westerners, the Chinese do not analyze things by viewing them as parts to be added together, as ‘one plus one equals
two,’ but that the whole is more than the sum of the parts (as in the Yin-Yang symbol or in contemporary Western ‘Systems Theory’)” (p. 119).

Yin-Yang, explains how one thing stands in relation to another. It suggests the interdependence of proximate things in the world. The yin and yang is a concept used not only to help representing ‘parts’ of the world, but also to suggest ways in which these parts may be correlated. For example, as Ames (2003) noted, in Classical Chinese philosophy there is no distinction between ‘reality’ and ‘appearance,’ which contrasts with the Western idea that “objective knowledge is truth; subjective knowledge is mere opinion” (p. 847).

Stewart and Bennett (1991) argued that the Chinese way of thinking emphasizes more of the “synthetic” while the Americans focus more on the “analytical” (p. 43-44). They noted that whereas the American way of thinking is essentially analytical, the Chinese way is “strongly relational and for this reason it lacks clarity from a Western point of view” (p. 43-44). Hall and Ames (1995) noted that the Chinese emphasize analogical and correlative thinking whereas Westerners draw on more causal thinking.

Nevis (1983) has summarized eleven major cultural assumptions underlying Chinese management:

1. The nation has priority over everything; loyalty to the country is of the utmost importance.
2. Consideration for the family is very important.
3. Personnel selection (leadership) is based upon exploits or ideological contribution.
4. One should have great respect for age.
5. Equity is more important than wealth.
6. Saving and conserving (money, resources, etc.) is to be valued, as is high respect for traditional ways.
7. It is considered unhealthy for individuals to stand out or to take personal credit for their accomplishments.
8. Every decision must take ideology into account.
9. Communal property is more important than private possessions; collectivism is the best economic mechanism.
10. Emphasis focuses upon group forces for motivational purposes.
11. Emphasis focuses on central planning and the powerful state. (p. 255)

Role of Guanxi

Guanxi refers to a special kind of relationship characterized by implicit rules of obligation and reciprocity (Chen, 1994). Cultural roots of Guanxi reside in the Confucian legacy. According to Confucianism, an individual is fundamentally a social or relational being. Social order and stability depend on a properly differentiated role relationship between particular individuals.

Five cardinal role relationships (called wu lun) are identified by Confucius: emperor-subject, father-son, husband-wife, elder-younger brothers and friend-friend. The term wu lun in the Confucian ideology is analogous to the contemporary concept of guanxi (Tsui & Farh, 2000). Yang (1993) described wu lun as follows:

As a highly formalistic cultural system...[requiring] each actor to perform his or her role in such a way that he or she should precisely say what he or she was supposed to say, and not to say what he or she was not supposed to say. In order to be a good role performer, the actor usually had to hide his or her free will...This is why Chinese have been said to be situation-centered or situationally determined. (p. 29-30)

Chinese nationals rely heavily on personal relationships (Guanxi) in business interactions (Chen, 1994). For them, Guanxi is the lubricant to get through life, including business negotiations. It is a social investment. No local or foreign company in the Chinese business world can succeed unless it integrates the essentials of Guanxi in their business dealings. Luo (1995) argues that even Guanxi brings obligations and costs to its beneficiary, these are mainly social obligations and not necessarily economic ones.
Such relationships can grow into complex networks that constitute a “highly differentiated intricate system of overt or covert as well as formal and informal social subsets governed by the unwritten law of reciprocity” (Wilpert & Scharpf, 1990, p. 647). Alston (1989), however, argues that guanxi is a viable mechanism for coping with China’s highly personalistic and non-codified social order. For Americans, personal relationships are less important when dealing with business partners. They would like to “get to the point”, even thought this might be misunderstood by the Chinese and cause them to lose face publicly (Huang, 2000; Low & Christopher, 2000). For Chinese trust and mutual respect are important values where also families still control most businesses and made-in China bureaucracy is still very powerful business tool to maintain some sort of control over foreigners in China (Low & Christopher, 2000).

Guanxi can further be defined as a special type of relationship that contains “trust, favor, dependence and adaptation, and often leads to insider-based decision making in the business world” (Chan, Cheng & Szeto, 2002, p. 327). Under conditions of poor legal infrastructures, guanxi might result in unethical business practices (in the western sense of “unethical”) rendering privileged treatments to members within the same guanxi network and under-table dealing. Chan et al. (2002) explained that “a guanxi network may represent the only efficient means to conduct business in countries where distribution and legal systems are far from fully developed” (p. 328). This unique Chinese way of resolving business conflicts should inform the practices of foreign companies of the importance of establishing guanxi with Chinese officials to protect corporate interests. While Westerners perceive certain business practices (e.g. gift giving) as bribery, their Chinese counterparts may regard them as totally “acceptable and necessary for cultivating mutual trust and long-term relationship” (p. 328). Therefore, coping with complexity in China is thus closely tied with foreign investor policy on local partnerships, that is, establishing and maintaining guanxi. Osland (1990) suggested that “Chinese cultural values are largely formed and created from interpersonal relationships and social orientations” (p. 7). To a certain degree, the human relationship network acts as the most important strategy in operating management and administration in China (Sun, Vandenberghe, & Creemers, 2003).

Face

Face is another important consideration for the joint ventures in China. Hwang (1987), Alston (1989), and Chen (1995) suggested that even though Face might exist in any society, it has special importance in Chinese societies because of its centrality in social life and business transactions. Shi and Westwood (2000) explained that for the Chinese, face concerns one’s dignity, respect, status and prestige; thus social and business interactions should occur without anyone losing face. Sun et al. (2003) confirmed that face for a Chinese is very important. It is even more important than dignity for a Westerner because dignity is only associated with an individual person but face is associated with the dignity of the individual’s family, relatives, and a group of people. When a manager criticizes an employee, whether in private or in presence of others, she or he causes that employee to lose face. Holton (1990) said that then the manager also looses face because she or he caused the subordinate to lose face. This means that criticism of performance on the job must be handled in a very delicate way, with criticisms disguised as suggestions for improvement. The foreign manager who is accustomed to dealing with workers in a straightforward way, open and blunt, must be aware of the Chinese employees’ concern for Face if she or he is to be effective.

DISCUSSION AND CONCLUSION

Managing a Sino-U.S. joint venture in China is not an easy task. It requires a broad understanding of the host country and a significant amount of flexibility. Understanding of the host country, China in this case, which has a long and complicated historical and cultural background is a challenge for the U.S. scholars, business people, and policy makers. China still maintains its mystery to the West. Western researchers have tried to understand the Chinese from various perspectives. They were scholars, educators, business people, anthropologists, and politicians. However, they were all looking into the “Chinese puzzle” from a Western perspective, with Western standards.
China is open to new ideas and willing to experiment. In *The Analects of Confucius*, translated and annotated by Waley (1989), “Tzu-kun asked saying, Why was K’ung Wen Tzu called Wen (The Cultured)? The Master said, Because he was diligent and was fond of learning that he was not ashamed to pick up knowledge even from his inferiors” (p. 110). That is, they have finally operationalized the idea that they should learn more about the West so that they can better succeed. Even though their transition from rural and agricultural to urban and industrialized economy will take its tolls from the Chinese, they are willing to make changes in their political, economic, and socio-cultural structures for the purpose of leading the Chinese civilization to lead the world.

However, being exposed to different cultural norms and beliefs and different political and social systems, does not mean that they are willing to accept democracy, and open-market economy with Western cultural and moral values, but China is willing to gain strength through Western ideas while maintaining their political, and most importantly moral and cultural values. The question remains, “Is this possible?” Is it possible to stay competitive with a significant shortage of skilled workers, which is not only confined to professional and managerial positions but also significant shortages in non-managerial positions (Qiu, 2005)? Is it possible to lead the world with enormous shortcomings of their human resource management practices? Is it possible to gain acceptance by the west with their ineffective regulatory measures against trade practices? Is it possible to stay in the same bed with the west while feeding off their arrogant and unprecedented business ethics with west’s hunger for China’s relatively inexpensive products? Is it possible for China to be a leading figure in the world, or safeguard their present role in the world trade if they insist on maintaining their a few thousand years old cultural values and just over fifty years old political system? Is it possible for China to be as strong and sought after in hundred years?

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There is current debate in the literature about the meaning of “tacit knowledge.” The debate can be seen as forming three schools of thought. We used Ambrosini and Bowman’s (2001) method to operationalize tacit knowledge from a sample of senior managers. We chose this method because it does not violate the basic tenets of any of the three schools of thought and allowed us to analyze the data from all three perspectives. Finally, we compare the perspectives. We found that two of the schools of thought are entirely compatible and enrich each other. The third is not.

INTRODUCTION

Tacit knowledge is a widely used construct in management, education, and psychology literature. The study of tacit knowledge begins with a physical chemist and philosopher named Michael Polanyi. Polanyi (1962) formally introduced the term and the theory, in his book, Personal Knowledge. Since then, tacit knowledge has become of interest to many disciplines including management, psychology, education, and theology. Theorists in management, psychology, and education believe that tacit knowledge plays a vital role in performance. More specific to this paper, management strategy theorists argue that tacit knowledge plays a key role in an organization’s sustained competitive advantage. With the role that tacit knowledge is believed to play in sustained competitive advantage, it is remarkable that there is such disagreement about its nature.

There is current debate in the literature about the meaning of “tacit knowledge.” The debate can be seen as forming three schools of thought. The original school of thought is based on Michael Polanyi's work. Polanyi believed that, “All knowledge falls into one of these two classes: it is either tacit or rooted in tacit knowledge” (Polanyi, 1969, p. 195). Tacit knowledge cannot be made explicit in any meaningful sense. Stated another way, tacit knowledge cannot be transformed into explicit knowledge that does not rely on tacit knowledge for meaning. Tacit knowledge is what makes explicit knowledge meaningful, and further, tacit knowledge is always personal to the knower requiring personal commitment.

The currently popular school of thought, characterized by Nonaka and colleagues within the Knowledge Management literature, contends that tacit knowledge is “highly personal and hard to formalize, making it difficult to communicate or share with others” (Nonaka & Nishiguchi, 2001, p. 14). A primary point of their work is to set out a method for making tacit knowledge explicit. A key point they make is that once tacit knowledge is made explicit, it can be understood by anyone and incorporated into
rules and procedures by the organization. According to this school of thought, once tacit knowledge is made explicit, it no longer has a tacit component.

Recent effort by critical theorists presents a third school of thought. They present a form of radical constructionism as an alternative way of understanding and making sense of tacit knowledge. (Ray, 2009; Ray & Clegg, 2007). Radical constructionism is a theory of learning and knowing that views the learner as constructing knowledge without requiring reference to objective truth. Knowledge is not measured in terms of how “right” or how “accurate” it is, rather knowledge is more or less “reliable.” According to this school of thought, tacit knowledge made explicit will need to be evaluated by the subject in question, with the evaluation involving personal sense-making and assessment of reliability.

We used Ambrosini and Bowman’s (2001) method to operationalize tacit knowledge from a sample of senior managers. We chose this method because it does not violate the basic tenets of the any of the three schools of thought and allowed us to analyze the data from all three perspectives.

METHODOLOGY

Ambrosini and Bowman (2001) recommend an interesting methodology for operationalizing the type of tacit knowledge that is argued to lead to sustained competitive advantage. Their recommended methodology requires the researcher to use a variety of techniques including self-Q, storytelling, and metaphoric analysis in order to generate a causal map of the organization’s top management team. Ambrosini and Bowman (2001) argue that the causal map, representing the top management team’s knowledge structure, should also make explicit some of the team’s tacit knowledge.

Our setting involved two MBA Health Care Strategic Management classes. These students were enrolled in an Executive MBA Program, all participants were practicing professionals in Health Care organizations. We used a combination of Self-Q Technique and Semi-Structured Interviews, as recommended by Ambrosini and Bowman (2001), to elicit and create the Causal Maps. A unique outcome of this method is that the concepts are derived from the mapping process itself, not predetermined by the researcher. If the Causal Map makes tacit knowledge explicit, the subject will know. According to Ambrosini and Bowman (2001) evidence will come in the form of one or more of the following:

- The subject to express, “oh, yes, that is right,” or, “ah-ha, I hadn’t realized that.”
- The subject to express that the Map explains something important that she knows but wouldn’t have been able to express easily or at all.

We used two qualitative measures of tacit knowledge content in the Causal Map as a check on the elicitation method. We reviewed the completed map with the subject and ask him to reflect on

- The extent to which he would have been able to narrate the “Map” if asked.
- What is interesting or surprising about the content, concepts, or linkages in the Map.

RESULTS

Examples of elicited maps are shown in Figures 1 and 2. Following is an excerpt of a resulting conversation between the researcher and the subject regarding the maps. We found strong qualitative evidence that the combination Self-Q and Structured Interview method of creating a Causal Map does indeed capture and express tacit knowledge.

Figure 1 Excerpts

SUBJECT: “For me, the results were not exactly what I was expecting to find. But mapping the concepts involved helped to visualize what has seemed to work...”
“The connections weren't necessarily obvious, or directionally obvious until we talked it out and tried to "logic" it.”
“The connections going from team to project and such ‘should’ be a positive effect, but from my stories they were not. So it was counter intuitive to what I am ‘taught’ that teams = success. I, of course, no better that I can do it better alone!”

**Figure 2 Excerpts**

SUBJECT: “The map is a good visual representation. I probably knew what went into it from our leadership updates, but explaining it to someone outside the company was difficult. You have to understand our business process to understand what leads to success.”
RESEARCHER: “So, it communicates the more "tacit" parts better than you could verbally?”
SUBJECT: “Exactly. I can describe the process but we have buzz words that make more sense on the map. It’s also easier to see how the strategic pieces fit together. It did for me because I really had to consider how our cost strategy differs from value creation. The connections were the most difficult part.”

**FIGURE 1**

**SAMPLE ELICITED CAUSAL MAP 1**
DISCUSSION

**Polanyi School of Thought**

From the perspective of the Polanyi school of thought, the subjects changed their focal object from explicit to what had been tacit. The tacit knowledge they had been looking through became the explicit focus. They were able to better understand the tacit knowledge they had been using. They did not, however, create explicit knowledge that did not require tacit knowledge for its interpretation. They made explicit a set of knowledge which had been tacit, which, in its turn, requires another set of tacit knowledge for its interpretation. For the subject in Figure 1, the new realization that teams tended to impact project success negatively, can only be understood within the context of his team and related tacit knowledge. This is precisely what Polanyi’s theory would predict.

**Nonaka School of Thought**

We found that from the perspective of the school of thought recommended by Nonaka, there is no doubt that tacit knowledge can be understood and mechanized – as long as the tacit knowledge you are looking for is “technique” - but any attribute of “meaning” is lost. The technique is a corpse; it cannot possibly have the same meaning to everyone, or anyone. In this sense it cannot be considered knowledge, explicit or implicit. A person’s technique can be extracted and mechanized, but tacit knowledge is not converted into universal explicit knowledge as this school of thought would suggest.
Radical Constructionist School of Thought

From the perspective of the radical constructionist perspective, the subjects appeared to unpack a personal construction of a “truth”, which was more or less reliable, as predicted by this school. Interestingly, this is entirely consistent with the Polanyi school as well.

REFERENCES


