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I am submitting herewith a dissertation written by Shaun W. Davenport entitled "Managing Team Conflict Through Perspective Taking." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Industrial and Organizational Psychology.

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MANAGING TEAM CONFLICT THROUGH PERSPECTIVE TAKING

A Dissertation
Presented for the
Doctor of Philosophy
Degree
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Shaun W. Davenport
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DEDICATION

For their unconditional and unwavering love and support this dissertation is dedicated to my wife and dearest friend, Mary Beth, and to my son, Luke. Words are not adequate to describe the profound appreciation and love I feel for you both.

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ABSTRACT

Research has consistently demonstrated that affective conflict leads to poor team outcomes. However, it has proven difficult to limit the occurrence of affective conflict in work teams. Several studies have demonstrated that unhealthy affective conflict seems to routinely emerge along with the healthy debate (i.e., cognitive conflict) that is expected and encouraged in team discussions. This co-occurrence may be due to team members misinterpreting healthy debate as personal attacks. The present study investigated perspective taking and team member schema accuracy as potential mechanisms by which to prevent these misinterpretations. Using Olsen and Kenny's (2006) dyadic SEM approach, an actor partner interdependence model which included perspective taking, team member schema accuracy, affective conflict, and team performance and effectiveness was tested to examine the hypothesized relationships between the variables of interest. The results indicated that, as hypothesized, perspective taking, assessed via a second order factor approach, was positively related to team member schema accuracy. Also, team member schema accuracy was negatively related to affective conflict, which was in turn negatively related to team effectiveness. Affective conflict fully mediated the relationship between team member schema accuracy and team effectiveness. Finally, behavioral training of several behaviors related to perspective taking appeared to lead to better team member schema accuracy compared to the control condition and may thereby provide a means for decreasing the occurrence of affective conflict in work teams.

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CHAPTER 1

INTRODUCTION

Over the last decade there has been an increasing trend in organizational behavior to study team functioning and effectiveness (Cohen & Bailey, 1997; Guzzo & Dickenson, 1996). This is understandable given the increased use of teams in organizations and their relative importance to organizational productivity. Recent research has examined the processes and variables believed to lead to team effectiveness (Amason, 1996; Jehn, 1997). Although there are undoubtedly an infinite number of factors that may influence team effectiveness, one process that is almost inevitable within teams and has therefore received theoretical and empirical attention is conflict (De Dreu & Van de Vliert, 1997).

Early research suggested that conflict had the potential to facilitate and to impair performance; however, it has since been argued that conflict is a multidimensional construct and that two types of conflict exist (Jehn, 1997). Although research on cognitive conflict has produced some inconsistent findings, empirical studies focusing on the second type of conflict, affective conflict, have consistently demonstrated that this socio-emotional conflict is related to poor team outcomes. Interestingly, research has also indicated that these two types of conflict tend to arise together (Jehn, 1994; Pelled, Eisenhardt, & Xin, 1999). Researchers have attempted to explain the relationship between the two types of conflict in terms of the misattributions of team members (Amason & Sapienza, 1997; Simons & Peterson, 2000), and some (Rentsch & Zelno, 2003) have suggested that the key to disentangling and managing conflict may lie in

improved team member schema accuracy. In accordance with some of the assertions made by Rentsch and Zelno (2003), the present study investigates the role that perspective taking, a team member characteristic, may play in improving accuracy and ultimately managing team conflict. Specifically, perspective taking is expected to result in greater team member schema accuracy and thus less affective conflict. As a result teams that engage in perspective taking should have better team outcomes than teams that do not engage in perspective taking. In the next section I discuss the literature relevant to the constructs of interest and the rationale for the present study.

Scope of Literature Review and Present Study

The team literature contains numerous definitions of a team and describes various types of teams (Cohen & Bailey, 1997; Sundstrom, de Meuse, & Futrell, 1990). However, in accordance with much of the research on team conflict, the present study focused on work teams, defined as "a group of two or more individuals who must interact cooperatively and adaptively in pursuit of shared valued objectives" (Cannon-Bowers, Salas, & Converse, 1993, p.222). Another important distinction when discussing teams is the type of task. For the scope of the current literature review and present study the emphasis will be on work teams engaged in complex, ill-defined tasks, such as strategic decision making and problem solving.

The primary process variables to be examined are team conflict, team member schema accuracy, and perspective taking. Conflict, and the commonly cited negative relationship between affective conflict and team outcomes such as satisfaction and performance, is of particular interest. Next, the review will focus on one potential means of decreasing affective conflict, namely, improved team member schema accuracy (Rentsch & Zelno, 2003). Finally, the

literature on perspective taking is reviewed, and the theoretical rationale is laid out for how perspective taking may increase team member schema accuracy.

Team Conflict

The occurrence of conflict is common and expected given the interdependent nature of team members working on complex, ill-defined tasks. However, the impact of conflict on team processes and outcomes may not be as clear. This may be due, in part, to the multidimensional nature of conflict. Jehn (1994) and Amason (1996) identified two factors commonly referred to as cognitive and affective conflict.

Cognitive conflict is defined as "task oriented and focused on judgmental differences about how best to achieve common objectives" (Amason, 1996). Essentially, cognitive conflict, also referred to as task conflict, is the process by which team members disagree with regard to sustentative task issues. As team members debate and question each other's positions they are able to combine their unique information and perspectives in order to maximize their outputs (Tjosvold, Wedley, & Field, 1986; Zelno, 2003). Amason (1996) went even further in suggesting that cognitive conflict may enhance team members' understanding of the rationale that led to their decision, and such conflict may lead members to perceive their team to be open and receptive and thus lead to greater affective acceptance.

Empirical findings on the functionality of cognitive conflict have been mixed. It has been shown to be positively associated with team performance (Jehn, 1994; Pelled et al., 1999), decision quality (Tjosvold et al., 1986), and affective acceptance (Amason, 1996). Despite these positive findings, in their meta-analysis De Dreu and Weingart (2003) reported a negative corrected correlation between cognitive conflict and performance. There is some evidence that

these apparent inconsistencies may be due to poorly specified performance parameters and/or a curvilinear relationship between cognitive conflict and performance (De Dreu, 2006). Clearly, more research is needed to better understand the nature of cognitive conflict and its potentially complex relationship with team performance.

Affective conflict arises out of interpersonal incompatibilities and is characterized by "friction, frustration, and personality clashes" (Zelno, 2003, p. 5). Unlike the research on cognitive conflict, findings in this domain have been quite consistent. Affective conflict hinders team decision making. This may be due to members turning their focus away from task issues to focus on creating team harmony or increasing their own power. It may also be the case that the emotional burden on team members makes processing complex information more difficult. Regardless of the means, affective conflict has been consistently linked with poor team outcomes (Jehn, 1994; Amason, 1996; Pelled, 1996; Janssen, Van de Vliert, & Veenstra, 1999; De Dreu & Weingart, 2003).

Although there is evidence that affective and cognitive conflict are two distinct types of conflict (Amason, 1996; Cosier & Rose, 1977; Jehn, 1994), it appears that more often than not these two types coexist. Simons and Peterson (2000) in a review of 11 previous studies found that there was a positive significant correlation between cognitive and affective conflict, $r = .47$. This is consistent with the findings of Ensley and Pearce (2001) who reported correlations of .48 and .56 on two samples of top management teams. The reasons for this correlation are not as obvious.

Most researchers have conceded that the misattribution of one form of conflict for the other is a potential reason for the consistently high correlations (Baron, 1988; Ensley & Pearce,

2001; Rentsch & Zelno, 2003). One possibility is that team members may mask affective conflict as task conflict by displaying personal attacks in the form of task related behaviors. An example might be repeatedly discounting a given member's ideas or contributions, but framing the criticism as task related rather than personal. However, it seems unlikely that such behavior would be interpreted as cognitive conflict because the conflict behaviors would be consistently directed at the same team member and would remain stable across issues. The more likely explanation and the one that has received empirical attention and support is that cognitive conflict is misinterpreted as affective conflict (Simons & Peterson, 2000).

Essentially, manifestations of cognitive conflict, such as dismissing members' ideas or disagreeing repeatedly with a team member's position, may be misinterpreted as a personal attack (Jehn, 1994; Simons & Peterson, 2000). Team members often have differing values, perspectives, and priorities that increase the likelihood that reasonable criticisms will be misinterpreted and lead to affective responses (Ensley & Pearce, 2001). Findings by Baron (1988) also support the proposition that when an individual improperly attributes a teammate's behavior to internal causes (when there are actually external constraints), it is more likely that affective conflict and competition among team members will occur. Evidence suggests that as long as an individual believes that external constraints truly exist and influence the behavior of the teammates, the individual will be less likely to interpret the behavior as a personal attack and engage in competitive behavior. Thus, what begins as healthy debate, rooted in external constraints, may ultimately be interpreted as socio-emotional conflict, the result of internal aggressive intent. Also, once the affective conflict is aroused it tends to escalate, making it increasingly difficult for the team to be productive (Amason & Sapienza, 1997). As a result,

stimulating debate in an attempt to increase performance may also result in the unwanted affective conflict. It would seem that the next logical step in the study of team conflict would be an investigation into the causes of misattribution and possible remedies for it.

Schema Accuracy

If, in fact, the unwanted affective conflict that often accompanies cognitive conflict is due to misattributions, as suggested above, then the causes of these misattributions need to be explored. A logical starting point for such exploration is the accuracy or inaccuracy of team member perceptions. According to Rentsch and Zelno (2003), whether or not team members misinterpret behaviors that are intended to be task focused (i.e. critiquing an idea) as personal attacks depends on the accuracy of the team members' schemas. The degree of schema accuracy in this case refers to the degree to which team members form accurate mental frameworks with regard to the characteristics of their teammates.

This theory regarding the potential misinterpretation of team member statements and behaviors and thus the importance of schema accuracy is rooted in the belief that groups, like individuals, are imperfect information processors (De Dreu, Nijstad, & van Knippenberg, 2008; Hinsz, Tindale, & Vollrath, 1997). Although previous research has acknowledged that team members' perceptions of their teammates play a role in the use and interpretation of their teammates statements and behavior (Kameda, Ohtsubo, & Takezawa, 1997; Wittenbaum, Hubbell, & Zuckerman, 1999), no one has examined how the degree of accuracy with which team members perceive one another may influence the amount of conflict that teams must navigate in order to effectively and efficiently process the information that their teammates present to them.

Although an individual could, in theory, be accurate or inaccurate about a wide range of individual difference variables such as personality traits and attitudes (Altman & McGinnies, 1960; Hoffman, 1959), intuitively it would seem that team member characteristics that directly impact that team member's viewpoints with respect to the task would be most relevant to task performance (Falk & Johnson, 1977). Rentsch and Zelno (2003) identified three types of team member characteristics on which accuracy would seem most important. These include the teammates' expertise, internal frames of reference, and task related constraints. Accuracy is achieved when a team member's schema of a target matches the target's schema. For clarification, Rentsch and Zelno (2003) give the following example of team member schema accuracy/inaccuracy:

> Donna and Mitch are members of a construction team. Donna is very knowledgeable about the client's financial resources, and Mitch is very knowledgeable about the engineering aspects of construction. If Donna's schema of Mitch contains information that he is an engineering expert, then her schema of Mitch is accurate with respect to his expertise. Mitch's frame of reference as an engineer leads him to suggest the use of high quality materials without regard for their associated cost. In this case, if Donna has an accurate schema regarding Mitch's frame of reference, she will be able to understand why he focuses on quality materials and tends to disregard cost (p.135).

In essence, the more information a team member has about the perspective or priorities of another team member the less likely he or she is to make misattributions about the motivations of the other member and the less likely it is that affective conflict will occur.

Overview of Perspective Taking

One factor that may facilitate the development of accurate team member schemas is perspective taking. Perspective taking, which has also been called role taking, role perception, and empathy, has been defined in several ways (Davis, 1996; Galinsky, 2002; Sessa, 1996). Some definitions focus on the dispositional or stable tendencies of an individual over time, and others focus on a situationally induced process. It is this situational perspective taking that will be the focus of the present review and present study. Relevant definitions of perspective taking include; "the process in which one individual attempts to imagine the world of another" (Davis, 1996, p. 17), "the cognitive process of understanding how another person thinks and feels about the situation and why they are behaving as they are" (Sessa, 1996, p. 105) and "the active consideration of another's point of view and the situation that person faces" (Galinsky, 2002, p. 86).

Defining perspective taking. In an effort to define perspective taking, it is important to distinguish it from related concepts. Perspective taking should not be confused with schema accuracy. In Davis' (1996) organizational model of empathy, schema accuracy is an outcome of the perspective taking process. In theory this distinction seems quite clear; however, in practice it may be quite difficult to separately assess these two constructs. Although empirical researchers sometimes assess accuracy and then make assertions about the process of perspective taking, it should be clear that "accuracy in predicting others' thoughts or emotions is not prima facie evidence of successful role taking, nor is inaccuracy necessarily evidence of role taking failure" (Davis, 1996, p. 23). Schema accuracy, in the present study, refers to the extent to which the observer's schema of the actor is accurate. Perspective taking refers to one process by which the

observer may develop an accurate schema of the actor. Below, I delineate perspective taking from related constructs and discuss the development of perspective taking.

Perspective taking is often confused with empathy. Perspective taking is a cognitive process by which an individual is able to identify the thoughts and/or feelings of another. Empathy, however, has been conceptualized as an affective and cognitive process and/or state (Gladstein, 1983; Rodgers, 1975). Such broad definitions are one reason for its theoretical confusion with perspective taking. For the purposes of this review empathy shall be defined as the process by which an individual shares or experiences the emotions of another (Duan & Hill, 1996; Eisenberg & Strayer, 1987). Thus, perspective taking, a cognitive process, may facilitate empathy (Parker & Axtell, 2001), an affective process.

The acquisition of perspective taking skills. The majority of the early research on perspective taking came out of the field of developmental psychology and focused on the development of perspective taking and empathy in children (Flavell, 1968; Selman, 1971; Selman, 1977). This developmental approach to perspective taking is relevant to the present study because it provides a framework for understanding how perspective taking occurs and how one can be trained to take another's perspective. Flavell (1968) identified four knowledge or skill components that children must acquire in order to take another's perspective. The first of these is the "existence" component, which refers to the individual's knowledge that mental states such as thoughts and emotions exist and that the mental states of others are not always the same as his/her own. This is also discussed as the suspension of egocentric thought (Gladstein, 1983). The second component is "need," and it refers to the individual's knowledge that certain situations call for effort to obtain knowledge about another's mental state. The third component

is "inference" and pertains to the individual's ability to obtain knowledge through inference or other processes such as nonverbal cues and previous experience. The fourth component is "application" and refers to the individual's ability to apply his/her knowledge in specific situations (Flavell, 1968).

It seems intuitive that most adults, through the normal developmental process, would acquire the first component, an understanding of the existence of mental states. However, at certain times and in certain situations, adults may have difficulty suspending egocentric thought and therefore be unable to recognize the thoughts and motives of others. For example, this may happen in situations that are perceived to be risky or involve intense emotions (Johnson, 1971) such as in teamwork situations during times of disagreement. Also, individuals may differ in their ability to recognize "need," in their skills of "inference," and their skills of "application" (Rogers, 1975; Gladstein, 1983).

Training perspective taking. In terms of team process, deficits in any or all of these perspective taking components could cause team members to be inaccurate in their schemas of others and thus lead to misattributions and affective conflict. Yet, team members who have acquired skills with respect to all of these components, either through natural development or training, would likely form more accurate perceptions than those with lower skill levels. It is here that the distinction between dispositional and situational perspective taking becomes important. Although individuals are likely to have a trait level of perspective taking (Davis, 1996) and thus a predisposition towards high or low perspective taking, the skill of taking another's perspective can be situationally induced and trained (Davis, Conklin, Smith, & Luce, 1996; Duan & Hill, 1996; Long, Angera, Carter, Nakamoto, & Kalso, 1999; Sessa, 1996). This

potential for training is one reason that perspective taking is seen as a possible means for reducing schema inaccuracy in team members.

Perspective taking training has been conducted in clinical (Rogers, 1975; Long et al., 1999) and organizational (Ray & Ray, 1986; Sessa, 1996) settings. The methods of training differ greatly across disciplinary fields and across studies. Most training programs address one or more of the components of perspective taking that were described above. That is, trainers often offer an explanation of the differences in an individual's mental states and attempt to emphasize the importance or need for recognizing others' roles. They may also have trainees practice suspending their own thoughts and feelings in various situations while drawing inferences about the perspectives of others (Ray & Ray, 1986; Rogers; 1975; Sessa, 1996). This may even include making trainees more aware and attentive to situational cues such as nonverbal behavior (Long et al., 1999). In some cases researchers have merely induced the perspective taking skills already available to the participants by prompting them to "imagine how [the actor] feels" or "imagine how you yourself would feel if you were [in the actor's situation]" (Davis et al., 1996). Based on the manipulations and subsequent findings of Davis et al. (1996), it appears that having individuals imagine themselves in a target's situation (imagine self) and having individuals imagine what the target is thinking and feeling (imagine target) are equally effective means of inducing perspective taking.

Perspective taking and early measurement. Because perspective taking was first examined from a developmental perspective, the first measures were designed for children. Measures of perspective taking in children have generally focused on one of three domains: cognitive, affective, and perceptual perspective taking (Davis, 1996). Cognitive perspective

taking involves imagining a target's thoughts, motives, and intentions. In contrast, affective perspective taking involves imagining a target's emotional reaction. Perceptual perspective taking involves imagining how an object might appear to someone in a different physical vantage point. However, perceptual perspective taking is not generally of interest in the adult population and the cognitive and affective domains are generally combined into one construct labeled social perspective taking (Davis, 1996; Ickes, 1997). Unfortunately there are relatively few measures of adult perspective taking, and those that are most commonly used are either self-report, or are confounded with measures of outcomes rather than the perspective taking process itself (Davis, 1996).

Perspective taking: Cognition and behavior. Next, I will distinguish between the cognitive processes and the behavioral skills associated with perspective taking. The cognitive process of perspective taking is comprised of any internal process, whether it be imagining the actor's thoughts, motives, and intentions or imagining the actor's emotional reaction. The cognitive process of perspective taking may influence whether or not the observer is accurate in his or her perceptions of the actor and the actor's behavior. However, this internal cognitive process is not necessarily manifest in the behavior of the observer and thus is unseen by the actor.

Attributions are also part of the cognitive process and are one mechanism through which perspective taking may impact schema accuracy. Related to the well known "fundamental attribution error" phenomenon, Jones and Nisbett (1972) showed that actors and observers often differ in the attributions that they make. Actors typically see their behavior as resulting from situational forces, but observers see these same behaviors as resulting from dispositional causes.

As mentioned previously, unwarranted internal attributions (when external constraints exist) with regard to team member behavior are more likely to lead to affective conflict (Baron, 1988).

However, Regan and Trotten (1975) demonstrated that by shifting one's psychological perspective, dispositional explanations could be changed to situational explanations. It appears that observers highly skilled in perspective taking are better able to suspend their egocentric ways of thinking and thus make attributions for the actor's behavior that are more similar to the attributions they would make for their own behavior ("self-like attributions"; Galinsky, 2002). This assertion was also supported in the research of Arriaga and Rusbult (1998), who found that couples induced to take their partner's perspective had significantly less partner-blaming attributions and significantly more external attributions.

Parker and Axtell (2001), in their study of perspective taking in organizations, recognized the importance of attributional explanations as evidence of perspective taking. They therefore used the attributions made by the perceiver as indicative of the level of perspective taking. Parker and Axtell (2001) also measured the empathy of the perceiver (i.e., feelings of concern for the target, understanding or identifying with his/her experiences, and taking pleasure in his/her achievements) in an attempt to determine the perceiver's level of perspective taking. As stated earlier, although perspective taking and empathy are separate constructs, they are closely related. *Understanding* the position and feelings of others at a cognitive level may increase the likelihood that an individual will *feel* an emotional connection with those others (Hoffman, 1975). Previous research supports the assertion that perspective taking is significantly related to empathy, and although the nature of the relationship is not completely understood it is commonly believed that perspective taking results in increased empathy (Eisenberg, Shea, Carlo, & Knight, 1991).

Because perspective taking is a fluid cognitive process, and therefore extremely difficult to measure, I chose to use a triangulation approach to measurement in which several more measurable constructs, strongly related to the cognitive process of perspective taking, were assessed and their common variance used as a surrogate measure of perspective taking. These first-order constructs include self-like attributions, state level empathy, and partner-rated perspective taking. Although all three constructs are theoretically related to perspective taking, each of these has a slightly different relationship with the cognitive process of perspective taking. Therefore the higher-order factor approach was believed to allow for a more complete assessment of the perspective taking construct by tapping into the construct from different vantage points (i.e., self ratings and partner ratings), using different forms of measurement, and by assessing first order factors with different theoretical ties to perspective taking.

In addition to the cognitive process of perspective taking, there are numerous behavioral skills that are associated with perspective taking. These behaviors are most likely reciprocally related to the cognitive processes previously mentioned. That is, perspective taking behavioral skills may facilitate the cognitive process of perspective taking which in turn may drive such behaviors. Particularly, when performed in a team context, these behaviors may facilitate the observer's perspective taking efforts and perspective taking by others.

First, behavioral skills that have been shown to enhance perspective taking on the part of the observer include role reversal techniques, and direct questioning of the team member's position. Both of these methods should provide the observer with more information about the actor's viewpoint. Because the observer has more information about the actor's viewpoint and

feelings at his or her disposal, the likelihood increases that the observer will make situational, self-like attributions about the actor's behavior.

Role reversal involves having both parties involved in a discussion present the other's position, rationale, and feelings in an accurate, warm, and authentic way (Johnson, 1971). By paraphrasing the actor's position and feelings, the observer provides the actor with an opportunity to correct misunderstandings or informational deficiencies. Thus, the information held by the observer should improve. Accordingly, Johnson (1971) found that those who engaged in role reversal understood their target's messages better and their target's characteristics more accurately than those who did not perform role reversal techniques. Falk and Johnson (1977) also found that paraphrasing improved observers' understanding of teammates' information.

Although role reversal utilizes paraphrasing as a means of enhancing information quantity and quality, direct questioning simply involves asking the actor questions to determine his or her thought processes and feelings. Again, Falk and Johnson (1977) reported that such behaviors were related to an improved understanding of others' information.

Second, because individuals high in perspective taking typically disclose more information about their positions and feelings, and frame their information in a manner that is easy to understand and interpret, teammates of high perspective takers are better able to understand their viewpoints. For example, Feffer and Suchotliff (1966) found that individuals high in perspective taking were more prone to self-disclose information about themselves and frame information in a way that is easier to understand than those low in perspective taking. In accordance with these findings, Falk and Johnson (1977) reported that on high perspective taking

teams, team members had a better understanding of one another's information than on teams comprised of low perspective takers. Interestingly, it appears that a greater amount of self information disclosed by high perspective takers leads to a greater amount of information disclosed by others (Sermat & Smyth, 1973). So in essence, by attempting to help others understand their unique positions better, high perspective takers actually help themselves gain additional information about the positions and views of others.

Third, high perspective takers may also gain necessary information by reminding teammates that they are considering their ideas and by occasionally referring to teammates' ideas (Falk & Johnson, 1977). If these behaviors are done with warmth and authenticity as suggested by Johnson (1971), then high perspective takers will likely communicate their interest in their teammates. The result is likely to be increased information exchange by the teammates leading to improved team member schema accuracy. A second and equally important consequence of acknowledging the contributions of teammates is an overarching sense of good will and social support on the team (De Dreu & Van de Vliert, 1997; Johnson, 1971). Although this social support and good will may not directly influence team member schema accuracy, it is logical to assume that such an environment would decrease the likelihood that behaviors associated with open debate would be misinterpreted as having malicious intent. In this way perspective taking, or rather the related behavioral skills, might directly decrease affective conflict.

Based on previous research it appears that certain behavioral skills are commonly linked with high perspective taking. Therefore, in the present study, I used these visible behaviors as evidence of perspective taking. One would expect that role reversal (paraphrasing in a warm and authentic manner), direct questioning, offering more complete information about self, framing

information to be understood by another, and assuring others of the importance of their information would be indicative of high levels of perspective taking.

Previous Empirical Research

There are relatively few studies that have empirically evaluated the relationship between perspective taking and schema accuracy, and even fewer that have examined perspective taking and team outcomes. Perhaps one reason for this is the general lack of theoretical and conceptual integration across disciplines and subdisciplines. Another is methodological and measurement problems that have resulted in inconsistent findings and difficulty with interpretation (Duan & Hill, 1996; Davis, 1996).

Perspective taking and schema accuracy. Perhaps the most commonly cited research on the relationship between perspective taking and accuracy was conducted by Bernstein and Davis (1982). The purpose of Bernstein and Davis' (1982) two studies were to determine if participants high in perspective taking would be more accurate in their perceptions of others as they hypothesized. Perspective taking was characterized as a trait and thus was not manipulated. The measure used to assess perspective taking was the perspective taking scale on the Interpersonal Reactivity Index, a self-report measure developed by Davis (1980). This is perhaps the most commonly used measure of perspective taking in the literature.

The measure used to assess accuracy in person perception was more complex. Bernstein and Davis (1982) developed a forced choice measure for the study. Participants were asked to describe themselves in three words but they were not to use physical characteristics. The participants were then randomly assigned to groups and participated in a group discussion. The

discussion was videotaped and the observers were instructed to watch the tapes and to try to correctly match the self-descriptions with the participants.

In general, the results of the study supported the hypothesis that high perspective takers were more accurate in person perception than low perspective takers. However, it should be mentioned that two studies were conducted, each with different groups of participants, and in the second study the group interacted for a shorter period of time than in the first study. In this second study perspective taking was actually negatively related to accuracy. This interaction was discovered through post hoc analyses, but appears to suggest that high perspective takers are more accurate when given a sufficient amount of time to observe (in this case a mean of 8 minutes). Yet, when given insufficient time to observe, high perspective takers actually are less accurate than low perspective takers. Bernstein and Davis hypothesized, post hoc, that the high perspective taker's need to make inferences resulted in an over reliance on projection when sufficient information was not present (1982).

The findings of Bernstein and Davis (1982) have been replicated in subsequent studies. Reimer (2001) found that when individuals fell into the fundamental attribution error and self-serving bias, which have been shown to be related to poor perspective taking (Regan & Trotten, 1975), their partner spaces (i.e., team member schemas) had low accuracy. Kilpatrick, Bissonnette, and Rusbult (2002), in a study of married couples, found perspective taking, measured via self-report, to be related to empathetic accuracy, although they argued that accuracy may cause perspective taking. In a measurement study, Ickes, Stinson, Bissonnette, and Garcia (1990) found perspective taking, measured using a trait level self-report, to be unrelated to accuracy. However, it is believed that this finding may be the result of measurement

deficiencies. Overall, there appears to be sufficient evidence that perspective taking should be related to improved team member schema accuracy.

Perspective taking and team conflict/team outcomes. The only empirical study that has examined perspective taking in work teams, and in particular perspective taking and affective conflict, was performed by Sessa (1996) in her study of nursing teams. Sessa (1996) hypothesized that teams using perspective taking would view conflict as more task oriented and less people oriented than those teams that did not use perspective taking. In this study, perspective taking was treated as state or process and was manipulated by the researcher.

The researcher conducted a three hour perspective taking training for the 15 teams that were in the experimental condition. This training consisted of role reversal, an information importance grid, and a discussion of situational application. The information importance grid was designed for this study and involved having teams learn and practice quantifying the positions and preferences of team members. Finally, the teams discussed what they had learned and how it might be applied to their own work situations.

Self-report and observational measures were collected for both perspective taking (Davis, 1980; Riggio, 1986) and perceived conflict. Although it appeared that the manipulation was successful, there was no main effect for training condition on cognitive conflict, nor training condition on affective conflict. However, when perspective taking was measured as a trait (using self-report and ignoring condition) there was evidence that team perspective taking was significantly positively related to cognitive conflict, $r = .46$, $p < .05$, and negatively related to affective conflict, $r = -.40$, $p < .05$. Thus Sessa (1996) concluded that higher average perspective

taking teams are more likely to have task oriented perceptions of conflict and less likely to have affective perceptions of conflict than lower average perspective taking teams.

Although their study did not focus on work teams and conflict, the findings of Falk and Johnson (1977) draw a supportive link between perspective taking and group outcomes. Rather than using a self-report measure as Sessa (1996) did, Falk and Johnson (1977) had observers code the following behaviors related to perspective taking: asking questions that explored why others thought the way they did, paraphrasing information presented by others, telling others that their information is being considered, and referring to others' information. Groups were manipulated to be high or low perspective taking and were then asked to generate solutions to an intellective group task. As hypothesized, high perspective taking groups had more creative solutions, and greater trust, commitment, and satisfaction than low perspective taking groups. Also, high perspective taking groups reported a higher degree of conflict over ideas reflecting open debate than over whose idea to accept.

Less direct measures of perspective taking on group outcomes include Reimer's (2001) finding that better partner spaces (i.e., team member schema accuracy), which were found to be related positively to fewer blaming attributions (i.e., perspective taking), led to better objective performance. Also, in a study of empathy training with couples, Long et al. (1999) found perspective taking to be positively related to relationship satisfaction. Although there have been some conflicting findings, there appears to be some evidence that perspective taking may be negatively related to affective conflict and positively related to various desirable group outcomes (i.e., viability, trust, satisfaction).

Limitations of Previous Research and Potential Improvements

There are numerous limitations to the current research on perspective taking and team outcomes, the most obvious of which is the lack of empirical studies. The existing empirical studies have four primary limitations presenting opportunities for future research. First, measurement issues have consistently plagued the study of empathy and perspective taking (Davis, 1996). In several of the studies mentioned above perspective taking was assessed via self-report (Ickes et al., 1990; Kilpatrick et al., 2001; Long et al., 2001; Sessa, 1996). This is understandable given the difficulties in measuring an individual's internal processes. However, respondents' perceptual errors limit the validity of self report measures (Duan and Hill, 1996). For example, the respondent may believe that he or she understands the target's position or that he or she generally takes into account others' situational constraints, but the target may not see it that way at all. Also, social desirability may implicitly influence the respondent's perception of whether or not he or she is able to "look at everybody's side of a disagreement before [making] a decision" (Davis, 1980, p.85). Overall, there is evidence that individuals lack metaknowledge with respect to their own empathic skills. Thus, it may be no surprise that the reported findings from studies using self-report measures of perspective taking are somewhat inconsistent (Ickes et al., 1990; Kilpatrick et al., 2001; Long et al., 2001; Sessa, 1996). In contrast, the studies that relied on attributional and behavioral measures have reported stronger, more consistent effects for perspective taking (Falk & Johnson, 1977; Parker & Axtell, 2001; Reimer, 2001).

Second, the alternative to self-report has often involved measures of the observer's ability to predict or infer something about the actor or the actor's behavior. Unfortunately, measuring the accuracy of predictions and inferences confounds two distinct constructs, the process

(perspective taking) and the outcome (schema accuracy). In contrast, by measuring constructs that have been shown to be theoretically and empirically related to the cognitive processes involved in perspective taking, such as attributions and empathy, one may be able to reliably assess perspective taking without erroneously measuring accuracy.

Third, in a team context, behavioral skills related to perspective taking (i.e., role reversal, direct questioning, offering complete information, framing information, and recognizing the importance of others' information) might be as important as the mental processes involved in perspective taking. That is, behaviors associated with perspective taking may influence the amount and quality of information that is available to the team and thus increase schema accuracy. Also, these behavioral skills might influence the perceptions of social support and thereby decrease affective conflict. The behaviors linked with perspective taking can be trained, observed, and measured (Davis et al., 1996; Long et al., 2001).

Fourth, Sessa's (1996) study sought to measure a direct relationship between perspective taking and team conflict. However, in doing so she neglected to measure or evaluate the potential role that schema accuracy plays in determining the type of conflict that is engendered.

Present Study

This review of the literature led to several conclusions regarding the role of perspective taking in team conflict and performance. First, empirical research has supported the assertion that by managing conflict, team performance and satisfaction can be improved (Amason, 1996; Jehn, 1994). Second, affective conflict may result from the misinterpretation of behaviors associated with team debate. Third, team member schema accuracy has the potential to prevent such misinterpretations (Rentsch & Zelno, 2003; Simons & Peterson, 2000). Fourth, the

cognitive process of perspective taking should facilitate schema accuracy (Bernstein & Davis, 1982; Kilpatrick et al, 2002; Reimer, 2001). Fifth, a significant negative relationship exists between perspective taking and affective conflict (Falk & Johnson, 1977; Sessa, 1996). Sixth, perspective taking has been found to be positively related to desirable group outcomes (Falk & Johnson, 1977; Long et al., 2001; Parker & Axtell, 2001).

Based on these conclusions I created a model for dyadic teams that sought to explain the relationship between perspective taking, team member schema accuracy, affective conflict, and team outcomes (see Figure 1, Appendix A; all figures/tables are presented in Appendix A). The model, which is based on the general actor-partner interdependence model (APIM) contains variables for two team members and thereby allows for actor and partner effects. *Actor effects* refer to those instances in which a team member's behaviors or attributes affect his or her own outcomes. By contrast *partner effects* describe relationships in which one team member's behaviors or attributes affect the other team member's outcomes (Kenny, Kashy, & Cook, 2006). The hypotheses for the present study are reflected in the model and are described below.

The first antecedents represented in the model include the cognitive processes of perspective taking and the behavioral skills related to perspective taking. As stated previously, perspective taking refers to the internal cognitive processes associated with imagining someone else's situation, and indicators of these cognitive processes include self-like attributions, self-reported empathy, and partner-rated perspective taking. It was expected that these team members' indicators would be related to their own team member schema accuracy.

Hypothesis 1: Indicators of the cognitive processes associated with perspective taking (i.e., self-like attributions, partner-rated perspective taking, and empathy) will have a positive *actor effect* on team member schema accuracy.

The other type of indictor associated with perspective taking is behavioral. Behaviors related to perspective taking include; role reversal, direct questioning, offering more complete information about self, framing information to be understood by another, and assuring others of the importance of their information. For the present study half of the teams were trained to utilize these behaviors in their team interactions and half of the teams were not. I proposed that training the behavioral skills related to perspective taking would be positively related to team member schema accuracy.

Hypothesis 2: Perspective taking behavioral skills training will be positively related to team member schema accuracy.

Also, because the behaviors related to perspective taking should create a sense of good will and a supportive work environment, the training condition was expected to be negatively related to perceptions of affective conflict.

Hypothesis 3: Perspective taking behavioral skills training will be negatively related to affective conflict.

Team member schema accuracy refers to the degree to which team members form accurate mental representations of their partners. Such accuracy was expected to result in fewer perceptions of conflict for both team members and better team outcomes.

Hypothesis 4a: Team member schema accuracy will have a negative *actor effect* on affective conflict.

Hypothesis 4b: Team member schema accuracy will have a negative *partner effect* on affective conflict.

Hypothesis 5: Team member schema accuracy will be positively related to team outcomes.

Also, in accordance with previous findings, I anticipated that affective conflict would have a negative relationship with that individuals team outcomes, and serve as a partial mediator between team member schema accuracy and team outcomes.

Hypothesis 6: Affective conflict will be negatively related to team outcomes.

Hypothesis 7: Affective conflict will partially mediate the relationship between team member schema accuracy and team outcomes.

CHAPTER 2

METHODS

Participants

Participants were 210 undergraduate students at a large southeastern university, who received course credit in exchange for their participation. Participants were randomly assigned to same-sex teams of two and assigned to one of two conditions. The sample consisted of 57 males (44.9%), 68 females (53.5%), and two participants of unreported gender. Participants ranged in age from 17 to 31, with an average age of 19.67 (SD = 1.8). Also, 64.1% were freshmen and sophomores, and 35.9 % were juniors and seniors. 79.0% of the participants were Caucasian, and 43.8% were currently employed. Data from five cases were dropped as outliers.

Experimental Task

The experimental task was a version of a multi-player negotiation role-play entitled "Porsche Exercise" (Greenhalgh, 1984). The original task was designed for four participants who took on the roles of four vice presidents from the following departments within Porsche of America: Sales, Marketing, Production, and Research and Development. The simulation materials were fairly extensive, with each participant receiving four pages of general background information. The vice presidents were members of a task force assembled to recommend a product strategy for the following year. The team was asked to make recommendations regarding the total production volume, body styles, and performance options of several lines of Porsche

cars. The materials were designed to elicit natural conflicts among the roles with regard to the desired outcomes.

The task was modified such that, participants filled the roles of Sales and Marketing. The participants were told in advance that the other vice presidents (Production and Research and Development) were unable to attend the meeting and the participants were given condensed copies of the missing vice presidents' information and positions. This information was to be incorporated into the decisions that were made by the task force members in attendance (see Appendix B).

Measures

Control variables. Participants completed a brief background survey, in which they will provide demographic information (age, gender, race, major, grade point average, class rank), and information regarding their work experience, team experience, and familiarity with their team members (see Appendix C).

Perspective taking. Three measures were used to assess the participants' level of perspective taking. First, a modified version of the Empathic Understanding Subscale from the Barrett-Lennard Relationship Inventory was used to assess the degree to which participants' partners took their perspective following the completion of the decision making task (Barrett-Lennard, 1962; see Appendix D). Please note that although the subscale is entitled Empathic Understanding it assesses what I have defined as the cognitive processes of perspective taking (i.e., imagining the actor's thoughts, motives, and intentions or imagining the actor's emotional reaction) through partner ratings. The subscale was kept in its original form except the verbs were changed to the past tense. Also, due to an error when creating the computer interface

program item 9 (i.e., “His/Her own attitudes toward some of the things I said, or did, stopped him/her from really understanding me”) was not included. Participants were asked to rate the extent to which their partners understood their thoughts and feelings by assigning a value (+1 = I feel that it is probably true; +3 = I strongly feel that it is true; -1 = I feel that it is probably untrue; -3 = I strongly feel that it is not true) to each of 15 statements about the their relationship with their teammate (e.g., “He/she understood my words, but not the way I felt”). Two items (Items 8 and 15) were negatively correlated with the other items in the scale and therefore removed from subsequent analyses. These were the only two items that contained the phrase “point of view”, and thus it is possible the wording may have led to an unexpected interpretation by the participants. The internal consistency estimate of the remaining 13 items was .80, comparable to Barrett-Lennard’s original estimate of .86 (1962). The scale score for this measure served as one of the first-order factors (i.e., observed variable) for perspective taking in the subsequent measurement and structural models.

The second measure used to assess the perspective taking construct, the Task Specific Empathy Scale, was developed specifically for this study (Appendix E). This measure consists of six items designed to assess the degree to which each participant identifies emotionally with his/her teammate’s task-related needs on the experimental task (e.g., “I was emotionally affected by how my teammate felt about our decisions”). State level empathy was measured by having each participant rate how much he or she agreed/disagreed with these items on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). The reliability estimate was .63, and this measure served as the second observed variable for the perspective taking latent variable.

Team member attributions were assessed using the Attribution Scale, a measure designed specifically for this study (Appendix F). This measure required the participants to list the five "best," and five "worst" task related actions performed by his or her teammate. The participant then rated the extent to which four external factors (e.g., "time constraints") and four internal factors (e.g., "effort") explained the good or bad behaviors performed by the teammate on a 4-point Likert scale (1 = not at all; 4 = to a great extent). Items were scored such that higher scores are reflective of self-like attributions. For the positive behavior subscale, items 1, 4, 6, and 8 (i.e., external attributions) were reversed scored. Similarly, for the negative behavior subscale, items 2, 3, 5, and 7 (i.e., internal attributions) were reverse scored. Unfortunately the reliability estimate was lower than expected and indicated psychometric issues with the original scale. Exploratory factor analyses suggested that the items were breaking along the subscales. Internal consistency estimates for the subscales indicated that participants conceptualized internal items as similar and distinguished between the positive behaviors attributed to internal causes (.63) and the negative behaviors due to internal causes (.74). However, participants appeared unable to see any commonality in the external items for either the positive behaviors (.09) or negative behaviors (.20). As a result, only two subscales (i.e., the positive behaviors attributed to internal causes and the negative behaviors attributed to internal causes), each consisting of four items, were retained as potential first-order factors for the structural equation modeling analyses.

Affective conflict. Affective conflict was measured using four items from Jehn's (1994) Intragroup Conflict Scale (Appendix G). Participants were asked to respond to each item on a 5-point Likert scale (1 = none; 5 = a great deal). The reliability estimate for this measure was .68

for the present study, compared to .86 for previous studies (Amazon, 1996; Amason & Sapienza, 1997).

Team member schema accuracy. Team member schemas were assessed using two different measures. The first measure, the TMSA Difference Score, developed by Small (2004; Appendix H), consists of 11 items representing the task constraints (e.g., "dealer satisfaction") and frame of reference (e.g., "providing a turbo option") of each of the roles represented in the experimental task. Participants were asked to complete a matrix by rating how important each item was to the arguments they made and to the arguments made by their team member (i.e., Sales or Marketing). All ratings were made on a 7-point Likert scale (1 = Very Unimportant; 7 = Very Important).

The degree of team member schema accuracy was calculated by comparing each team member's ratings of a given role with the ratings from the team member who played that role (i.e., the target). Each team member's accuracy was therefore calculated using difference scores. For example, for each of the 11 items rated by the Vice President of Sales about his/her own role, a difference score was computed (i.e., the squared difference between the VP of Sales' own ratings and his or her team member's ratings about the VP of Sales). These difference scores were then summed across all 11 items, to arrive at a total accuracy score for each individual ($\overline{X}$ = 16.49, SD = 6.25), with smaller values indicating greater accuracy. This total score served as one potential indicator for the team member schema accuracy latent construct.

A secondary and more open-ended measure of team member schema accuracy was also used. This measure, Task Specific TMSA (see Appendix I) was developed specifically for this study and asked each team member to answer, in his or her own words, three questions

concerning the needs or wants of the other team member, the other member's constraints, and how the team member perceived the final decisions that were made (e.g., "To what degree did your final decisions meet your teammate's wants and needs?"). After completing this portion of the measure the participants were asked to exchange answers and rate how accurately their teammate answered the three questions on a 4-point Likert scale (1 = very inaccurate; 4 = very accurate). The internal consistency estimate was .64.

Performance measure. An objective scoring system had previously been created for the experimental task based on the assessments of expert raters. Experts were asked to determine what solution for each of the three decisions (production volume, body style, turbo option) would be made by a team that was able to effectively communicate and integrate the information presented to them while still considering the constraints placed upon each participant.

Each expert identified what he or she believed to be the best, feasible, and worst solutions for both the production volume and the body styles decisions. For the turbo option decision, which was a simpler "yes-no" issue, each expert identified the best and worst solutions. Items were scored based on expert ratings. The team score for each decision was intended to serve as an observed variable loading on the latent "team performance" construct.

Team Effectiveness. Following Hackman's (1987) multifaceted conceptualization of team effectiveness, several items developed for this task assessing satisfaction, consensus, and perceived decision quality were used. First, team member satisfaction was assessed using an item created for this task by Zelno (2003; Item 1 of Appendix J). This item was designed to assess each participant's satisfaction with the three decisions made by the team. Participants were asked to respond on a 7-point Likert scale (1 = very unsatisfied; 7 = very satisfied).

Second, by examining the degree to which team members agreed with the team's final decisions (i.e., consensus), an assessment of productive output was gathered. Consensus was assessed using an item created for this task by Zelno (2003; Item 3 of Appendix J). This item measured team member agreement on all three decisions from the perspective of the company as a whole. Responses were made on a scale from 0% (no agreement) to 100% (complete agreement).

Third, perceived decision quality was assessed with an item created for this task (Zelno, 2003; Item 2 of Appendix J). Participants were asked to rate how effective their teams' decisions were using a 7-point Likert scale (1 = very ineffective; 7 = very effective).

These three items satisfaction, agreement, and effectiveness were used as observed variables when assessing the latent construct team effectiveness in the subsequent SEM analyses.

Manipulation Check. In an effort to determine if the behavioral skills training component resulted in learning of the behavioral skills, a manipulation check was included in the present study (see Appendix K). Following the completion of the experimental task and all subsequent measures, participants were asked to complete a short five item multiple choice measure that asked participants to match a behavioral description with the corresponding name of the behavioral skill. This knowledge test did not measure deep level understanding or transfer of training, but did provide a basic measure of whether trained participants were better able to identify the five behavioral skills on which they were trained than participants who received no training (i.e. control group).

Pilot Work

Because a large portion of the present study involved interpersonal interaction and more specifically a detailed training component, the training was first implemented using five pilot teams. The participants for the pilot teams were undergraduate students enrolled in an organizational behavior course who completed the training exercises as part of a decision making application. Once the pilot teams completed the training exercise they were debriefed and asked to provide feedback (e.g., was the training clear, were the examples relevant, what could have been done to improve the training). Also, the pilot teams provided estimates of the amount of time needed for each part of the training. Following the pilot work, the training was revised to incorporate the feedback.

Design and Procedure

An experimental design was employed in order to investigate the potential role of behavioral skills related to perspective taking and the potential for perspective taking training. More specifically, the manipulation was designed to assess whether or not affective conflict could be reduced, either directly, or indirectly through TMSA, by training participants on a set of skills that in past research has been positively associated with perspective taking. Participants were randomly assigned to same-sex dyadic teams that were then randomly assigned to one of two conditions: a perspective-taking behavioral skills training condition and an interactive control condition. There were an equal number of male and female teams in each condition. Teams assigned to the training condition received a brief lecture on the importance of perspective taking and a discussion of the behavioral skills that are involved. These behavioral skills were then modeled in a training video, after which the experimenter followed up with

questions and feedback, and allowed the participants to try and identify the behaviors that were presented in the video (see Appendix L).

Conversely, the teams in the control condition did not receive perspective taking behavioral skills training. However, in order to provide the participants with an opportunity to interact with each other and the experimenter, and thus limit the possibility that any subsequent significant findings might be attributable to social interaction rather than the training itself, participants in the control condition were also provided with an interactive activity. Participants in the control condition were asked to watch a fact based travel video on Ireland. They were instructed to watch the video and independently take notes on the facts presented. At the end of video an experimenter had the participants read off the facts they listed and briefly discuss the video. Both conditions thus contained a similar level of interaction and lasted approximately the same amount of time (i.e., 35 minutes).

Once the training/control portion of the study was completed all participants were given 20 minutes to read the general background information and role specific information related to the experimental task. Once the participants had read the background materials, they were given instructions on how to complete the experimental task. Teams were not given a time limit, and the mean time to completion was 27 minutes. When the participants finished they were asked to record their decisions on each of the three issues and then complete the remaining measures that were outlined above. The script for the data collection session is presented in Appendix M. See Figure 2 in Appendix A for a summary of the procedure.

SEM for Dyadic Data Analysis

The actor-partner interdependence model (APIM) was used to test most of the hypothesized relationships illustrated in Figure 1, Appendix A. The APIM is best suited for dyadic data when it is expected that a team member's behaviors or attributes will affect his or her own outcomes (i.e., actor effect) and the other team member's outcomes (i.e., partner effect; Kenny et al., 2006). Although the APIM may be estimated using several methods including pooled regression, structural equation modeling (SEM), and multilevel modeling, SEM contains several unique advantages that made it the most attractive choice for the present study. First, SEM allows for estimation of the entire structural model. Thus, a given variable can be treated as both an outcome and a predictor simultaneously, and each path or relationship is estimated while controlling for all other variables in the model. Second, some of the hypotheses include only actor effects (which can not be estimated using pooled regression; Kenny et al., 2006). Third, latent constructs can be modeled allowing for correction of measurement error (Olsen & Kenny, 2006; Wendorf, 2002). For the present study, AMOS 7 was used for all SEM analyses.

Not only does SEM make possible the modeling of latent constructs, but it also supports a triangulation or higher-order factor approach to the measurement of perspective taking. Because of the inherent difficulty in measuring perspective taking, a cognitive process, several related, and more measurable constructs (i.e., partner-rated perspective taking, self-like attributions, and state level empathy) were assessed and their common variance used as a surrogate measure of perspective taking. SEM allows for the modeling of such shared variance while correcting for the unique variance (i.e., measurement error).

Although SEM was chosen to analyze the data, the fact that participants were analyzed as dyads (i.e., likely violating assumptions of independence), and were indistinguishable (i.e., no meaningful factor may be used to order the two team members) required some adjustments to be made to the traditional SEM approach. Recently Olsen and Kenny (2006) addressed these issues and outlined a method for dealing with such data within an APIM framework. Their method uses a maximum likelihood approach and accounts for the interdependence that is expected to exist within dyads by allowing the predictor variables from both members to correlate and estimating the predictor intraclass covariance, and by allowing the error terms to correlate, and estimating the residual intraclass covariance. This interdependence is also taken into account in the estimation of variances and standard errors.

The reason indistinguishable dyads require additional constraints and adjusted model comparisons stems from the fact that the designation of Member 1 and Member 2 in the present study is random. For example, if one were to calculate a Pearson correlation for a given variable that correlation could differ greatly depending on which team member was assigned to be "Member 1" and which was assigned to be "Member 2". The same is true when estimating parameters within a structural model. For this reason equality constraints are placed on many parameters including the actor and partner effects, predictor means, predictor variances, outcome intercepts, and residual variances (Kenny et al., 2006).

Evaluation of Model Fit

Also, adjustments must be made to the fit measures (specifically chi-square and the corresponding degrees of freedom), because a lack of fit may be due not only to specification error but also to the arbitrary assignment of participants as Member "1" or "2". To remove the

effect of arbitrary assignment of persons from the chi-square, Olsen and Kenny (2006) recommend developing an alternative saturated model (I-SAT). The I-SAT model consists of the means, variances and covariances among the observed variables. In this model the means and variances of a given variable are constrained to be equal for both members, as are covariances between variables, both within and across members. This I-SAT model reflects the arbitrary assignment of participants to "Member 1" and "Member 2" and is subtracted from the initial chi-square value of the substantive model to derive the adjusted chi-square ($\chi^{2\prime}$). The degrees of freedom are similarly adjusted (df′) by subtracting the I-SAT degrees of freedom from the substantive degrees of freedom. Following the example of Olsen & Kenny (2006), the use of the prime symbol (′) after any fit statistic indicates that the statistic has been adjusted using I-SAT.

The NULL or independence model, which is also used in many comparative fit indices, must also be adjusted. Again the chi-square and degrees of freedom of the I-SAT are subtracted from the original NULL model chi-square and degrees of freedom. Other fit indices such as the root-mean-square difference test (RMSEA), comparative fit index (CFI), and Tucker-Lewis index (TLI) require similar adjustments and are calculated using the adjusted chi-square and degrees of freedom for the substantive and NULL models (see Olsen & Kenny, 2006 for greater detail).

For the present study goodness-of-fit was evaluated using both absolute and relative indices. Absolute fit was assessed using chi-square (χ^2), the normed chi-square ratio (χ^2/df), and the root-mean-square error of approximation (REMSEA). The comparative fit index (CFI) which has been recommended for small samples (Bentler, 1990) was used as a relative measure of fit.

Although the χ^2 test is the most common method of examining the fit of measurement models, χ^2 tests have been shown to be sensitive to large sample sizes. Specifically, χ^2 tests tend to produce significant results even with a relatively small degree of specification error and thus may be overly conservative tests (Kline, 2005). The normed chi-square is an attempt to take sample size into account by dividing chi-square by the degrees of freedom. Guidelines for practical significance have not been established, but 3.0 or less has been suggested as indicating reasonable fit (Bollen, 1989). Browne and Cudek (1993) suggested that RMSEA represents a measure of lack of fit per degree of freedom and takes sample size into account, noting that a value of .05 or less represents close fit whereas values up to .10 represent reasonable fit. The CFI is a relative fit statistic that evaluates model fit relative to a null model, and takes into account the overall number of model parameters estimated. The CFI can range from zero to one with values closer to 1.0 indicating better model fit. A rule of thumb is that CFI values greater than .90 indicate reasonably good fit (Hu and Benter, 1999). In models tested with small samples ($N < 200$), REMSEA and CFI are less likely than some other fit indices to overestimate goodness of fit (Fan, Thompson & Wang, 1999).

CHAPTER 3

RESULTS

Descriptive Statistics and Correlations

Means and standard deviations were calculated for all variables of interest. Bivariate correlations were also calculated to determine the relationships among these variables. The relationships are generally consistent with the path weights that were generated using the structural equation modeling analysis. The individual level correlation matrix is presented in Table 1 (see Appendix A).

As expected the three indicators (i.e., partner rated perspective taking, task specific empathy, and internal attributions for positive behaviors) of perspective taking were all significantly correlated, reflecting their common theoretical link to perspective taking. Internal attributions for negative behaviors were not correlated with the other indicators, and this is also reflected in the factor loadings of the SEM model. Also, the three observed indicators of team effectiveness (i.e., satisfaction, decision effectiveness, and agreement) were significantly correlated, consistent with their factor loadings in the SEM model.

Unexpectedly, the three decisions (i.e., production volume, body style, and turbo option) made by the teams were not statistically intercorrelated. Although the task materials were structured such that a decision on one issue might affect the decision on another issue, the task was not designed to require that decisions had to follow and be interrelated, and the correlation matrix indicates that the decisions were, in fact, not related. The lack of interrelationships was

also evident in the SEM model, in which the three decisions failed to load on a single latent factor.

Preliminary Analyses

To determine if there were significant differences between conditions with respect to demographic and work history variables, *t*-tests were conducted on age, gender, race, major, grade point average, class rank work experience, team experience, and familiarity with team members. Results indicate no significant differences by condition (see Table 2). Prior to conducting the SEM analyses, correlations were also run between demographic and work history variables and the variables of interest (i.e., partner rated perspective taking, task specific empathy, internal attributions for positive behaviors, internal attributions for negative behaviors, task specific TMSA, TMSA difference score, affective conflict, production volume decision, body style decision, turbo option decision, satisfaction with decision, decision effectiveness, and agreement with decision) to check for any potential confounds. No significant relationships were detected.

Also, as a preliminary check to determine if the behavioral training resulted in any differences between the training group and interactive control group, I tested for mean differences on several variables of interest. First, to determine if the behavioral training resulted in increased learning, differences in the mean scores on the manipulation check variable were tested using an independent samples *t*-test. The resulting value was significant, $t(170) = -12.13$, $p < .01$, with the training group scoring significantly higher, and thus indicating greater knowledge of the perspective taking behavioral skills than the interactive control group. Given the apparent differences between groups, *t*-tests were then run for all the variables of interest to determine the

effect of condition. As shown in Table 3 (see Appendix A), there was a significant difference in the level of team member schema accuracy (TMSA) by condition, $t(198) = -2.17$, $p < .05$. This was one of the two variables that the behavioral training was hypothesized to influence, the other was affective conflict. There was no statistically significant difference between mean levels of affective conflict for the members of trained versus interactive control teams, $t(198), = .32$, $p =$ ns.

Because t-tests performed on individual level data require an assumption of independence (an assumption that is likely violated when using dyadic data), mean differences between groups were also assessed using a latent mean structure analysis within SEM taking into account dependence in the data. For those variables comprised of multiple items, and containing unique data points for Member 1 and Member 2, measurement models were created and the resultant latent variables tested for mean differences. Controlling for dependence in the data attenuated the group differences slightly. However, the results, listed in Table 4 (see Appendix A), are similar to those obtained from the independent samples t-test.

Measurement Model 1

Two sets of criteria, team performance and team effectiveness, were collected and available to serve as team outcomes for the present investigation. Thus two research models, one including team performance (M1), and one including team effectiveness (M2) were examined. I will first discuss the findings with respect to Model 1.

Prior to any examination of the path model and the associated hypotheses, the measurement model (MM1) was established and examined to assess model fit (McDonald & Ho, 2002). The a priori measurement model (see Figure 3, Appendix A), was theoretically identified

with at least two indicators for each latent construct and more degrees of freedom than parameters to be estimated (Kenny et al., 2006; Kline, 2005). MM1 contained four latent variables perspective taking, TMSA, affective conflict, and team performance.

Based on the demonstration of adequate psychometric properties (see Methods section), four scale/subscale scores (i.e., Empathic Understanding Subscale, "partner PT"; Task Specific Empathy Scale, "task empathy"; Internal Attributions for Positive Behaviors Subscale, "P-I attributions"; Internal Attributions for Negative Behaviors Subscale, "N-I attributions") were deemed suitable for inclusion in the MM1 as indicators of the latent variable perspective taking. It has previously been argued that the use of item composites (aggregate-level indictors formed from two or more items) may be appropriate if the focus of the analyses is the relationships among latent constructs rather than the relations among items (Bagozzi & Edwards, 1998. Also, composites typically increase the reliability of the indicators and decrease the likelihood of biased parameter estimates due to item-specific variance (Lance, Woehr, & Fisicaro, 1991; West, Finch, & Curran, 1995).

Individual items served as indicators for the remaining latent variables. TMSA was to be assessed with the three items from the Task Specific Accuracy Scale (i.e., "success", "cause", and "want"), and the TMSA Difference Score (i.e., "matrix"). Likewise affective conflict was to be assessed with four items from the Intragroup Conflict Scale. Finally, scores for each of the three decisions reached by the team served as indicators of team performance.

In order to account for interdependence in the team members' scores, the model allowed for the predictor variables and error terms from both members to correlate. Also, because the

members are indistinguishable, all loadings, variances, and intercepts were constrained to be equal across members (Olsen & Kenny, 2006).

The model fit for the a priori MM1 with all of the proposed scales/subscales and items included was poor, $\chi^2(327, N = 100) = 409.55$, $p < .001$ ($\chi^2/df = 1.25$, RMSEA = .05, CFI = .78). An examination of the factor loadings suggests that some of the proposed indictors did not load as expected on the latent constructs. The Internal Attributions for Negative Behaviors subscale, whose items were reverse scored and was expected to load positively on perspective taking construct, did not load highly (.06). Similarly, the TMSS Accuracy Difference Score failed to load on the TMSA construct (-.07). These poor loadings may be attributed to psychometric issues (i.e., frequently noted difficulties with combined error in difference scores) and scale development (i.e., the attribution scales were developed specifically for this study). These items were therefore removed from the measurement model and all subsequent analyses. One item, Item 5, from the Intragroup Conflict Scale, was found to be highly kurtotic (30.74) and was also removed from future analyses. This item included the term "anger" when describing conflict and was endorsed by very few participants ($\overline{X} = 1.10$, SD = .44). Finally, two of the three decision items (i.e., body style, turbo option) expected to load onto the team performance construct had insignificant weights of .21. However, because this latent construct had only three observed variables these items were retained for the revised MM1.

Once the aforementioned changes were made to MM1, the revised model was run again and new fit indices were generated (see Figure 4, Appendix A). This revised MM1 model resulted in good fit, $\chi^{2\prime}(97, N = 100) = 98.01$, $p =$ ns ($\chi^2/df = 1.01$, RMSEA = .01, CFI = 1.00). Note that these and all subsequent fit statistics reported are based on the adjusted chi-square

(Olsen & Kenny, 2006). For the unadjusted fit statistics see Table 5, Appendix A. Seventy-five percent of the lambda values exceeded an absolute value of .35 and the median estimated lambda value was .57. However, this median was severely attenuated by the factor loadings for the two performance items, turbo option and body style, which remained insignificant ($\lambda = .20$ and $\lambda = 18$, respectively).

Structural Model 1

Despite the small factor loadings on the team performance latent variable, the acceptable fit of the revised model led me to investigate the corresponding structural model. This structural model maintained the relationships between the observed and latent structures from the measurement model, but added directional paths between the latent variables as specified by the hypotheses. Also, correlated disturbances replaced the correlations between the same latent variables from the two different members, per Olsen & Kenny (2006).

The a priori SM1 model initially allowed for covariance among the observed indicator error terms and the disturbance error terms. However this model failed to converge, and, given the fact that there was no significant difference in the model fit for MM1 with or without correlated error, $\Delta\chi^2(9, N = 100) = 7.57$, p = ns, the model was adjusted such that the error from the observed indictors was not allowed to covary between members. The revised model did converge, and the resulting fit indices for SM1 indicated a reasonable but not close fit, $\chi^2{}'(118, N = 100) = 162.22$, $p < .05$ ($\chi^2/df = 1.38$, RMSEA = .06, CFI = .82). Three of the five standardized path coefficients were significant (see Figure 5, Appendix A). The actor effect, or relationship between one's own perspective taking and TMSA was significant, which was predicted in Hypothesis 1. Also, significant path coefficients from TMSA to affective conflict suggested the

presence of actor (Hypothesis 4a) and partner (Hypothesis 4b) effects. However, the two insignificant path weights, which both involved the team performance variable (i.e., affective conflict predicting team performance, and TMSA predicting performance), prevented the full model from being interpreted. Also, the factor loadings for the two team performance items, turbo option and body style, which were insignificant in the measurement model, remained so in the structural model.

The lack of initial convergence, the lack of close fit, and the small factor loadings (in both MM1 and SM1), taken in concert, suggest potential psychometric problems with the team performance criterion that prevented an adequate test of the proposed model. However, a second set of outcome variables were also collected, and thus permitted an alternative investigation of the proposed model.

Measurement Model 2

The second measurement model (MM2; see Figure 6, Appendix A) was identical to MM1 in terms of the factor structure of the predictor variables, including perspective taking, TMSA, and affective conflict. Proposed items/scales that were shown in MM1 to be problematic or unrelated to the assigned latent variables were omitted from the MM2 model. The only difference between MM1 and MM2 concerned the outcome variables which were included. Unlike MM1, which had a single latent team performance variable comprised of three team decision scores (i.e., both team members had the same score for each item), MM2 included a latent team effectiveness variable for each member that consisted of three indicator items. These items assessed the degree to which each member perceived the decisions they made to be

effective, how satisfied they were with the team's decisions, and how much they agreed with the team's decisions.

Also, once again, in order to account for interdependence between team members the model was specified to allow predictor variables and error terms from both members to correlate. All loadings, variances, and intercepts were again constrained to be equal across members (Olsen & Kenny, 2006).

The fit for the a priori MM2 was quite good, $\chi^{2\prime}(92, N = 100) = 91.93$, p = ns (χ^2/df = 1.00, RMSEA = .00, CFI = 1.00; note that these values do not imply "perfect fit" (Kline, 2005). An examination of the factor loadings also supported the overall fit of the measurement model. All lambda values were statistically significant for their respective latent constructs. Ninety two percent of the lambda values exceeded an absolute value of .40 and the median estimated lambda value was .62. As such, MM2 was deemed an appropriate starting point for examining the hypothesized constructs of interest.

Structural Model 2

As with the first structural model, the structural model that corresponded to MM2 (SM2; see Figure 7, Appendix A) included not only the relationships between the observed and latent structures from the measurement model, but also the hypothesized directional paths between the latent variables. Correlated disturbances replaced the correlations between the same latent variables from the two different members, per Olsen & Kenny (2006), and unlike with SM1 the a priori SM2 model converged without any further adjustments. All path coefficients for SM2 were significant, with the exception of TMSA to team effectiveness, which was the result of complete mediation by affective conflict. All factor loadings were also significant.

Perspective Taking. Hypothesis 1 predicted that perspective taking, measured as a second-order latent factor, would be positively related to TMSA, such that higher levels of perspective taking for an individual would result in higher levels of TMSA by that same individual (i.e., actor effect). Given the statistically significant positive path coefficient between the latent perspective taking variable and the latent TMSA variable (within team member), this hypothesis was empirically supported.

Team Member Schema Accuracy. TMSA was hypothesized to be negatively related to affective conflict, via both actor (Hypothesis 4a) and partner (Hypothesis 4b) effects. That is, greater team member schema accuracy, was believed to lead to less affective conflict for the individual and his/her teammate. Hypotheses 4a and 4b were both supported because the negative actor and partner path coefficients from TMSA to affective conflict were statistically significant.

It was also hypothesized that TMSA would be positively related to team effectiveness (Hypothesis 5). Although the positive path coefficient from TMSA to team effectiveness failed to reach statistical significance within the a priori SM2 model, this was due to the presence of affective conflict in that model, which fully mediated the TMSA to team effectiveness relationship.

Affective Conflict. Hypothesis 6 proposed that affective conflict would be negatively related to team effectiveness. This hypothesis was supported in the form of a statistically significant negative path coefficient leading from affective conflict to team effectiveness within team member (i.e., actor effect).

I also expected affective conflict to partially mediate the relationship between TMSA and team effectiveness (Hypothesis 7). The results, however, suggest that rather than a partial mediation, affective conflict fully mediates the relationship between TMSA and team effectiveness. That is, with affective conflict in the model, all of the influence of TMSA on team effectiveness goes through affective conflict, and the best fitting, most parsimonious model includes both TMSA and affective conflict with no statistically significant direct relationship between TMSA and team effectiveness (see Tables 6 & 7, Appendix A).

Perspective Taking Behavioral Skills Training. The training of behavioral skills related to perspective taking was hypothesized to be positively related to TMSA (Hypothesis 2) and negatively related to affective conflict (Hypothesis 3). Preliminary *t*-test results indicated that the mean level of TMSA for those in the trained group was significantly higher than those in the interactive control group $t(198) = -2.17$, $p < .05$, supporting Hypothesis 2. An analysis of the latent mean structure of SM2 using the SEM framework confirmed a significant difference in TMSA, such that those trained in perspective taking behaviors had a higher TMSA mean than those who participated in the interactive control condition ($\Delta\bar{X} = .15$, $p < .05$). Thus Hypothesis 2 was supported. However, neither the preliminary *t*-test, $t(198) = .32$, p = ns, nor the latent mean structure analysis within the SM2 model ($\Delta\bar{X} = .28$, p = ns) indicated any significant difference in the mean level of affective conflict by training condition. Therefore, the results do not provide support for Hypothesis 3.

Overall Fit. Table 5 (see Appendix A), presents the goodness-of-fit indices for the SM2 model. These fit indices suggested a close fit for the a priori SM2 model, $\chi^{2\prime}(111, N = 100) = 142.16$, $p < .05$ ($\chi^2/df = 1.28$, RMSEA = .05, CFI = .93). These results along with the significant

path coefficients and factor loadings provide support for the assertion that the SM2 model closely fit the data, and therefore interpretations of path relationships regarding hypotheses are warranted.

CHAPTER 4

DISCUSSION

The purpose of the present study was to investigate perspective taking as a potential means of decreasing the occurrence of affective conflict and thus improving outcomes for work teams. The study included an experimental design component and relied on structural equation modeling within a dyadic actor-partner interdependence model framework to examine the relationships among perspective taking, team-member schema accuracy, affective conflict, and team outcomes. Overall model fit and significant path estimates between the variables of interest support the hypothesized direct and indirect relationships. In the discussion that follows, the empirical findings are first summarized. Second, the study's contributions are highlighted, and limitations are addressed. Finally, the study's implications are discussed, emphasizing the need for future research.

Summary of Empirical Findings

Overall, the results of the present study support the proposition that perspective taking plays an important role in the development of TMSA, affective conflict, and team effectiveness. In accordance with Figure 1, perspective taking was positively related to TMSA. Also, findings support the positive relationship between TMSA and team effectiveness and the negative relationship between TMSA and affective conflict. Lastly, affective conflict was negatively related to team effectiveness and mediated the relationship between TMSA and team effectiveness. Although not pictured in Figure 1, the training of behavioral skills related to

perspective taking resulted in significantly higher mean levels of TMSA for trained teams than control teams.

The first SEM model tested, which included expert derived scores for each of the teams' three decisions as observed variables loading on the latent variable team performance, did not demonstrate adequate fit for the measurement model or the structural model. However, a second model, which included participants' ratings of satisfaction, consensus, and decision quality as observed variables loading on the latent variable team effectiveness, did show evidence of good model fit. Thus, the hypotheses, which articulated the expected relationships between the variables of interest, were evaluated using this second structural model.

Hypothesis 1 predicted a positive relationship between perspective taking and TMSA. This relationship was estimated by measuring three separate indictors (i.e., partner-rated perspective taking, self-like attributions, and empathy), which, based on theory and previous research, were believed to be associated with the latent construct perspective taking. The zero order correlations (see Table 1) between these three indicators support this assertion. The scale scores from these three indicators served as observed variables for the second order latent factor, perspective taking.

As predicted by Hypothesis 1, perspective taking had a positive actor effect on TMSA. Stated differently, an individual's own level of perspective taking, an unseen cognitive process, was positively related to his or her own level of TMSA. Interestingly, this relationship was not evident from the zero order correlations between each of the three indicators (i.e., partner-rated perspective taking, empathy, and self-like attributions) and the scale score for TMSA (i.e., Task Specific TMSA). These correlations ranged from .00 to .14 (see Table 1), and were not

significant. However, within the SEM framework, the path estimate was significant. By pooling the shared variance of the indicators, in the form of the latent perspective taking variable, and by removing variance unique to each indicator the SEM technique provided a more powerful method for testing the relationship between perspective taking and TMSA. Also, the SEM technique appropriately improved the probability of finding a significant relationship if one exists by correcting for measurement error in the observed variables (i.e., the Task Specific TMSA items).

Hypotheses 2 and 3 focused on five types of behavioral skills theoretically linked to perspective taking. Despite early theoretical and empirical research linking this behavioral skill set and the cognitive process of perspective taking (e.g., Falk & Johnson 1977; Feffer & Suchotliff, 1966; Johnson, 1971; Sermat & Smyth, 1973), few studies have included these behaviors when examining the relationship between perspective taking and other constructs. To remedy this, the present study trained half of the participants on the five behavioral skills (i.e., role reversal, direct questioning, offering complete information, framing information to be understood by another, and assuring others of the importance of their information) and hypothesized that teams that were trained to use the behaviors would demonstrate higher levels of TMSA (Hypothesis 2) and lower levels of affective conflict (Hypothesis 3) than teams that were not trained to use the behaviors. Preliminary analyses compared the trained and interactive control teams using independent t-tests. Results revealed a positive relationship between behavioral skills training and TMSA, but did not support the hypothesized relationship between behavioral skills training and affective conflict. An examination of the latent mean structure

within the SEM framework yielded similar results (i.e., significant positive relationship between training and TMSA, and no relationship between training and affective conflict).

These empirical findings regarding perspective taking have significant theoretical and practical implications. First, the fact that both perspective taking (measured as a state-level cognitive process) and the behavioral skill set thought to be related to perspective taking demonstrated positive significant relationships with TMSA adds support to previous claims that these behavioral skills are in fact closely tied to what has been traditionally considered perspective taking. Second, the results of Hypotheses 1 and 2 acknowledge that, not only are perspective taking and TMSA positively related, but also that we can manipulate perspective taking through training and thereby explain the occurrence of TMSA and improve upon it. Third, the results indicate that perspective taking, in either form, is positively related to TMSA and is therefore a potential mechanism by which to increase TMSA in work teams.

The hypothesized direct negative relationship between the behavioral skills and affective conflict was based on the belief that certain behavioral skills (e.g., acknowledging the contributions of teammates) would create an overarching sense of good will and social support on the team (De Dreu & Van de Vliert, 1997; Johnson, 1971), and that this environment would decrease the likelihood that behaviors associated with open debate would be misinterpreted as having malicious intent. The results did not support this assertion. Although it could be that the performance of behaviors such as the one listed above do not, in fact, create an environment of support and good will, it is also possible that not enough of these behaviors were performed in a short time frame (approximately 30 minutes) to generate such an environment.

It was predicted that TMSA would be negatively related to affective conflict, as an actor (Hypothesis 4a) and partner effect (Hypothesis 4b), and that TMSA would be positively related to team outcomes (Hypothesis 5). The zero order correlation between the TMSA Task Specific scale score and the affective conflict scale score was negative and significant (see Table 1). Consistent with this preliminary finding, the SEM analysis detected the same significant relationship, and confirmed that the relationship existed both as an actor and partner effect. In other words, the greater an individual's level of TMSA, the less likely he or she was to perceive affective conflict on the team and the less likely his or her teammate was to perceive affective conflict. Previous empirical literature on team schemas has largely ignored accuracy in favor of other forms of schema similarity such as congruence, but the findings with respect to Hypotheses 4a and 4b clearly support the proposition that TMSA may play an important role in the management of affective conflict in teams.

Although at first glance TMSA did not appear to be related to team effectiveness as hypothesized (Hypothesis 5), a closer examination of the structural model revealed that, rather than the partial mediation predicted in Hypothesis 7, affective conflict fully mediated the relationship between TMSA and team effectiveness. As a result, the full mediation by affective conflict masked the relationship between TMSA and team effectiveness. Therefore, I concluded that Hypothesis 5 was supported.

Hypotheses 6 and 7 addressed the role of affective conflict as an antecedent and mediator. Although there remains a great deal of debate and uncertainty regarding the effect of cognitive conflict on team outcomes, the negative relationship between affective conflict and team outcomes has been well documented (Jehn, 1994; Amason, 1996; De Dreu & Weingart,

2003). This finding was replicated in the present study with the zero order correlations (see Table 1) and the path coefficients from the structural model, demonstrating a significant negative relationship between affective conflict and team effectiveness.

As mentioned previously, it was predicted that affective conflict would partially mediate the relationship between team member schema accuracy and team outcomes such as effectiveness (Hypothesis 7), but the structural model supported full mediation. In other words, affective conflict plays such an important role in explaining the TMSA to team effectiveness relationship that when affective conflict is included in the model the direct affect of TMSA on team effectiveness, which was previously significant, becomes nonsignificant. This finding suggests that, although accuracy about one's teammate may appear to directly facilitate team effectiveness, this model is incomplete. Rather being accurate about one's teammate decreases the occurrence of affective conflict, which in turn facilitates team effectiveness. It should be noted that partial mediation was tested first, in part, because of the relatively high occurrence of partial mediation compared to full mediation, and in part due to the belief that TMSA would have a significant direct influence on team outcomes. However, in retrospect, it might have been more prudent to hypothesize and test full mediation first, given its more parsimonious explanation and the limited research on TMSA.

Contributions

This study has a number of strengths and makes theoretical, methodological, and statistical contributions to the literature on work teams and team processes. With respect to theory, the overall literature on perspective taking in teams is scant. Although isolated studies have sought to examine perspective taking and team conflict (Sessa, 1996), and perspective

taking and some form of accuracy (Bernstein & Davis, 1982; Kilpatrick et al., 2002; Regan & Trotten, 1975), none have investigated these relationships simultaneously. Specifically previous studies have not examined accuracy, or more specifically TMSA, as a potential means for decreasing or eliminating affective conflict. Also, wide variations in what is meant by "perspective taking" and "accuracy", and a lack of empirical studies focusing on interdependent work teams have made it difficult to draw theoretical conclusions on the role of perspective taking and TMSA in work team settings.

The present study also included actor and partner affects, adding to the richness of the theoretical explanations for the relationships among the variables. Moreover, the use of actor and partner effects allowed for conjecture about not only the strength of the ties between perspective taking, TMSA, and affective conflict, but also the nature of those ties. As hypothesized one's own perspective taking influenced one's own TMSA. Whereas, one's own TMSA influenced perceptions of affective conflict for both the individual and his or her partner.

A second area of contribution is methodology. The present study included methodological advantages not typical for research in this area. For example, perspective taking is a fluid multifaceted cognitive process and extremely difficult to measure. Therefore, rather than relying on a single self report scale, as has been commonly used in previous research, I chose a triangulation approach to measurement. I assessed several measurable constructs that have been shown to be related to the cognitive process of perspective taking and used their common variance as a potentially superior measure of perspective taking. These first-order constructs included self-like attributions, state level empathy, and partner-rated perspective taking. Although all three constructs are theoretically related to perspective taking, each of these

is believed to have a slightly different relationship with the cognitive process of perspective taking. Therefore the higher-order factor approach arguably enables a more complete assessment of the perspective taking construct relative to single measures. The higher-order factor approach assesses the multifaceted construct from different vantage points (i.e., self ratings and partner ratings), using different forms of measurement, and by assessing first order factors with different theoretical ties to perspective taking.

Second, the experimental design component (i.e., having two conditions, training and interactive control, with random assignment to each) allows for inferences of causality with respect to the behavioral skills and their influence on TMSA. Thus, in this instance we can move beyond correlation to causation. Although this experimental design required the use of student lab teams, which are commonly criticized as being less desirable than functioning work teams for purposes of generalizability, some of the present findings suggest that the results from these student lab teams may generalize to real world settings. For example, conventional wisdom would suggest that student teams, meeting only once, with no long term investment in the decisions made by their team, should be less likely to experience affective conflict and less likely to have such conflict hinder their effectiveness. However in this lab environment affective conflict did occur and did negatively influence team effectiveness.

Third, the statistical methodology outlined by Olsen and Kenny (2006) that was implemented in the present study has numerous advantages including, the simultaneous estimation of all paths in the model, a recognition and accounting for nonindependent and interchangeable dyadic data, and the ability to parcel out actor and partner effects. This was a departure from previous examinations of perspective taking and enabled the evaluation of a

complex and potentially more complete model of the role of perspective taking and team effectiveness.

Limitations

Threats to internal validity. Given the lack of previous empirical research and thus the exploratory nature of the present study, I sought to limit threats to internal validity with an emphasis on experimental design applied in a lab setting. However, it is difficult if not impossible to eliminate all threats. One potential threat involves uncertainty about the direction of causal inference (Campbell & Stanley, 1963). Theory and previous empirical findings support the hypothesized model in which perspective taking influences TMSA, which in turn affects affective conflict, which in turn affects team effectiveness. However, it is certainly possible that the causal order of these events is incorrect (e.g., perceptions of affective conflict on the team influence the level of TMSA).

Measurement issues. As with many cognitive processes, the measurement of perspective taking has been and remains quite challenging. Self-report measures, which are subject to limitations such as self-awareness and social desirability for most all constructs, are even more limited when assessing constructs such as state level perspective taking due to the fluid nature of cognitive processes. The present study included a somewhat novel, unique and complex measurement strategy with the hope of better capturing the construct of interest.

First, although the methodology used in this study avoided sole reliance on self-report and the associated pitfalls, several of the measures used were developed specifically for this investigation. These measures had not been psychometrically validated in previous research, and therefore replication of the results is, as always, strongly advised. Also, not all of the newly

developed measures functioned exactly as expected. The Attribution Scale, developed specifically for this study, originally contained items designed to assess the degree to which positive and negative behaviors were attributed to internal and external causes. However, analysis of the psychometric properties of the items revealed that the scale was not unidimensional as expected. As a result two subscales (i.e., internal attributions for positive behaviors, and internal attributions for negative behaviors) were included in the first measurement model, only one of which, internal attributions for positive behaviors, was significantly related to perspective taking. It is unclear why items that assessed internal attributions for positive behaviors were significantly related to perspective taking while those assessing internal attributions for negative behaviors (which were reverse scored) were not related to perspective taking.

Furthermore, the items that were designed to reflect external attributions (i.e., task difficulty, role expertise, luck, role pressures) for positive and negative participant behaviors were not seen as strongly related to one another. That is, the internal consistency estimates for these items were so low that these "subscales" were not used in the SEM analysis.

Second, as is the case with many team based research studies, sample size was a limitation for the present study. Although the sample for the present study included 200 data points and was large enough to detect significant paths for the hypothesized relationships, model stability is a concern when using SEM. Thus, we encourage replication of the present study to confirm that the relationships detected in the present study are stable.

Threats to external validity. The paltry number of empirical studies on perspective taking and work teams, and a desire to implement a complex measurement strategy, dictated the use of

a laboratory setting for the present study. A traditional strength of lab studies is the limitation of threats to internal validity and this study was no exception. However, as is typically the case with lab studies, limitations exist in terms of generalizability. The present study demonstrated the positive impact that perspective taking and related behavioral skills can have on TMSA, conflict, and team effectiveness for short-term decision-making teams. Yet it is difficult to ascertain to what extent these findings will generalize to other types of teams and to teams that interact on a long-term basis.

Another limitation of the present study is the issue of maintenance. The participants for the present study completed the training component and thirty minutes later began the decision-making task. It is unclear what impact, if any, a time lag between the training and task would have. Also, because these participants were not required to meet at some later date and work together again, it is unclear how well the training would be retained and utilized during future team interactions. It is worth noting that, although longitudinal research on training related to perspective taking is certainly limited, some previous studies have demonstrated the maintenance of perspective taking training effects over time (Grizenko, Zappitelli, Langevin, Hrychko, El-Messidi, Kaminester, Pawliuk, & Stepanian, 2000; Long et al., 1999).

Future Research

Along with the understood need to replicate the current findings in future research is the need to ascertain the effects of the number of high perspective taking members on a given team. The present study trained both members of each team and the results supported the hypothesis that training was positively related to TMSA. This is an excellent and promising start, in that it appears that training the behavioral skills related to perspective taking is one way to improve

accuracy and thus decrease affective conflict. However, if perspective taking skills do lead to increased accuracy for the actor and the observer, as has been theorized previously (Falk & Johnson, 1977; Feffer, & Suchotliff, 1966), then perhaps training *all* team members in the behavioral skills associated with perspective taking is unnecessary. If the performance of these skills by the actor can improve the TMSA of everyone involved in the team interaction, organizations might be able realize the benefits of perspective taking training by training only select team members. However, each individual study can only seek to answer a finite number of research questions, and the questions of how many team members should be trained, and which team members should be trained was outside the scope of the present study. Similarly, the present study only examined perspective taking within the context of decision-making work teams, and future research might investigate the role of perspective taking in other types of teams in various work environments (e.g., Sundstrom et al., 1990).

Future research might also include a more in depth examination of the five behavioral skills that were included in the training to determine the relative importance of the behaviors. Although in theory all of these behaviors should be related to perspective taking and should result in improved TMSA, the present study examined the training in its entirety, rather than examining specific behaviors or components of training. It is certainly possible that some behaviors are more potent or have a greater impact on TMSA than others.

Implications

From a theoretical perspective the results of the present study offer some insights into the means by which perspective taking can influence affective conflict and team effectiveness. First, the findings generally support the assertion that perspective taking is positively related to TMSA.

In other words, the cognitive process of perspective taking may facilitate the development of schemas about one's teammate that more closely approximate the teammate's schema. Although previous research suggested that accuracy and perspective taking are related, the forms of accuracy assessed in previous research have been varied and in many cases included domains that were less applicable to work teams (e.g., Bernstein & Davis, 1982). The present research effort focused on accuracy within the context of task related domains, because of the interest in work teams and the apparent strong ties to task behavior and outcomes (Falk & Johnson, 1977).

Second, five types of behavioral skills, theoretically related to perspective taking, were found to be positively related to TMSA, and moreover, to improve TMSA through training. This finding offers empirical support for the purported relationship between the five behavioral skills and the development of TMSA. Also, although only one of the three observed indicators of perspective taking demonstrated a significant relationship with the behavioral training (see Table 3), the fact that both the cognitive process of perspective taking and the behavioral skills were positively related to TMSA suggests that a common link between these entities, is likely (Feffer & Suchotliff, 1966; Johnson, 1971). Future research should examine in detail the relationship between each of the five behaviors and the cognitive process of perspective taking to better assess the exact nature of the relationship.

Third, affective conflict has routinely been linked to poor team outcomes (Jehn, 1994; Amazon, 1996; De Dreu & Weingart, 2003), and the present findings only serve to solidify that conclusion. However, the present study differs from previous research, in that the results support the previously untested assertion that greater TMSA should be related to a lower level of perceived affective conflict amongst team members (Rentsch & Zelno, 2003). Team outcomes

such as satisfaction, effectiveness, and agreement with the decisions were positively related to TMSA, through its negative relationship with affective conflict. Therefore, it appears that by increasing TMSA, through methods such as the training of skills related to perspective taking, affective conflict is lessened, thus benefiting team outcomes. Although, I, along with previous researchers, have suggested that TMSA's capacity to manage affective conflict stems primarily from the fact that greater TMSA should reduce the likelihood of misunderstandings and misattributions (Jehn, 1994; Simons & Peterson, 2000; Ensley & Pearce, 2001), this aspect of the relationship was inferred and not directly tested in the present study. Future research might examine specifically the degree to which misunderstandings with respect to team conflict occur.

The results are encouraging, especially with respect to practitioners' ability to decrease unwanted, unhealthy team conflict. It appears that team member schema accuracy may be a key variable and such accuracy may be achieved by enhancing team members' perspective taking skills. In addition to the cognitive process of perspective taking, there are numerous behavioral skills that are associated with perspective taking. When performed in context, these behaviors may facilitate the observer's perspective taking efforts and perspective taking by others. Unlike the cognitive process of perspective taking, the related behavioral skills are more easily trainable and measureable. The trainability of these skills has been largely ignored in the literature and the results of this study offer not only a starting point for theoretical solutions to team related concerns such as the occurrence of affective conflict, but also practical solutions for the practitioner.

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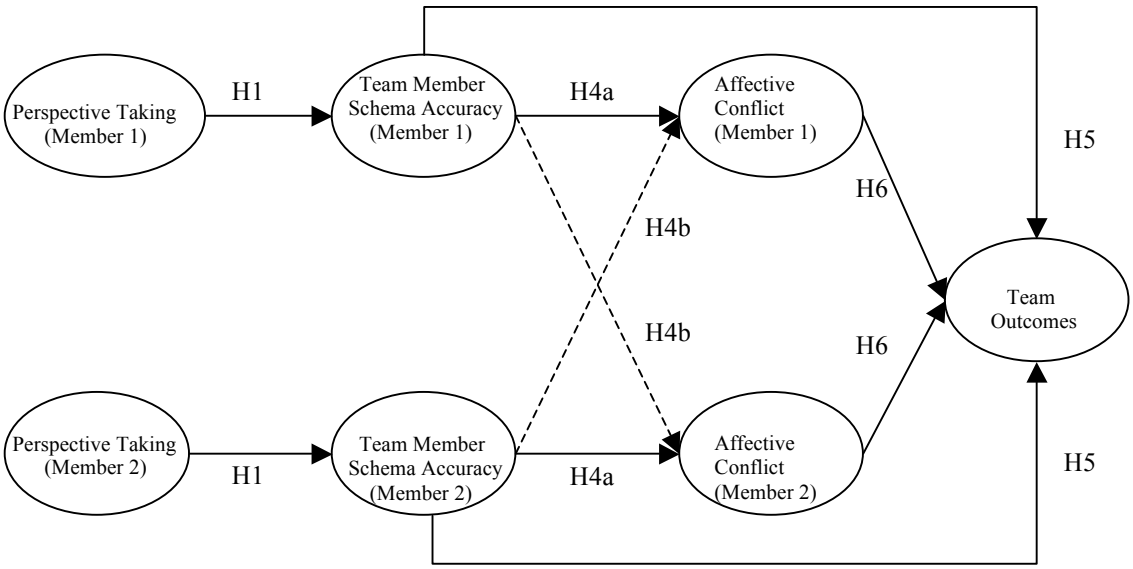
APPENDICES

APPENDIX A



H2: PT training will be positively related to team member schema accuracy

H3: PT training will be negatively related to affective conflict

H7: Affective conflict will partially mediate the relationship between team member schema accuracy and team outcomes

Figure 1. Model of the hypothesized relationships among the variables of interest.

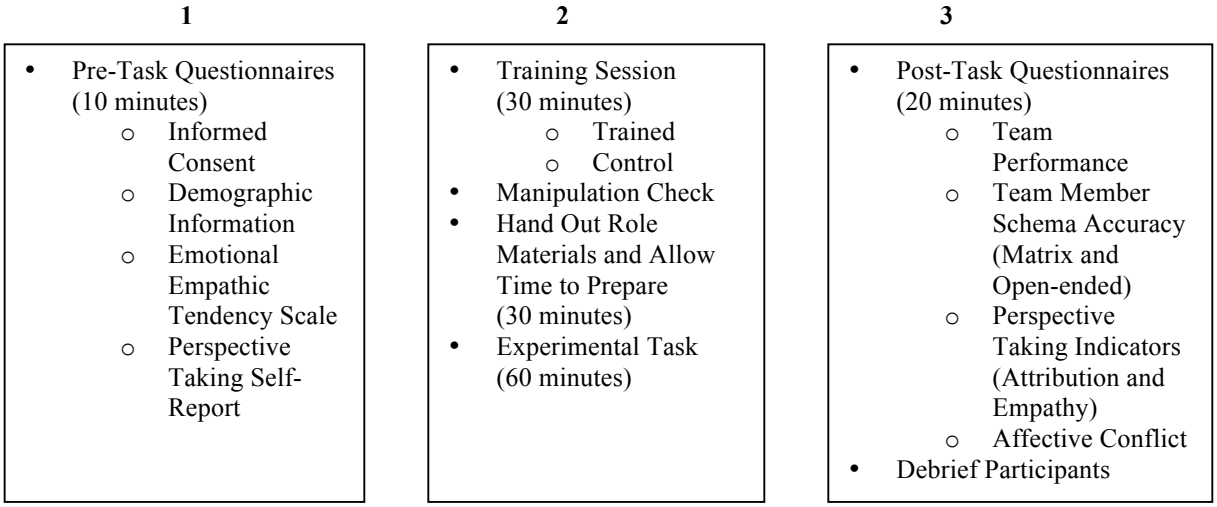


Figure 2. Summary of procedure.

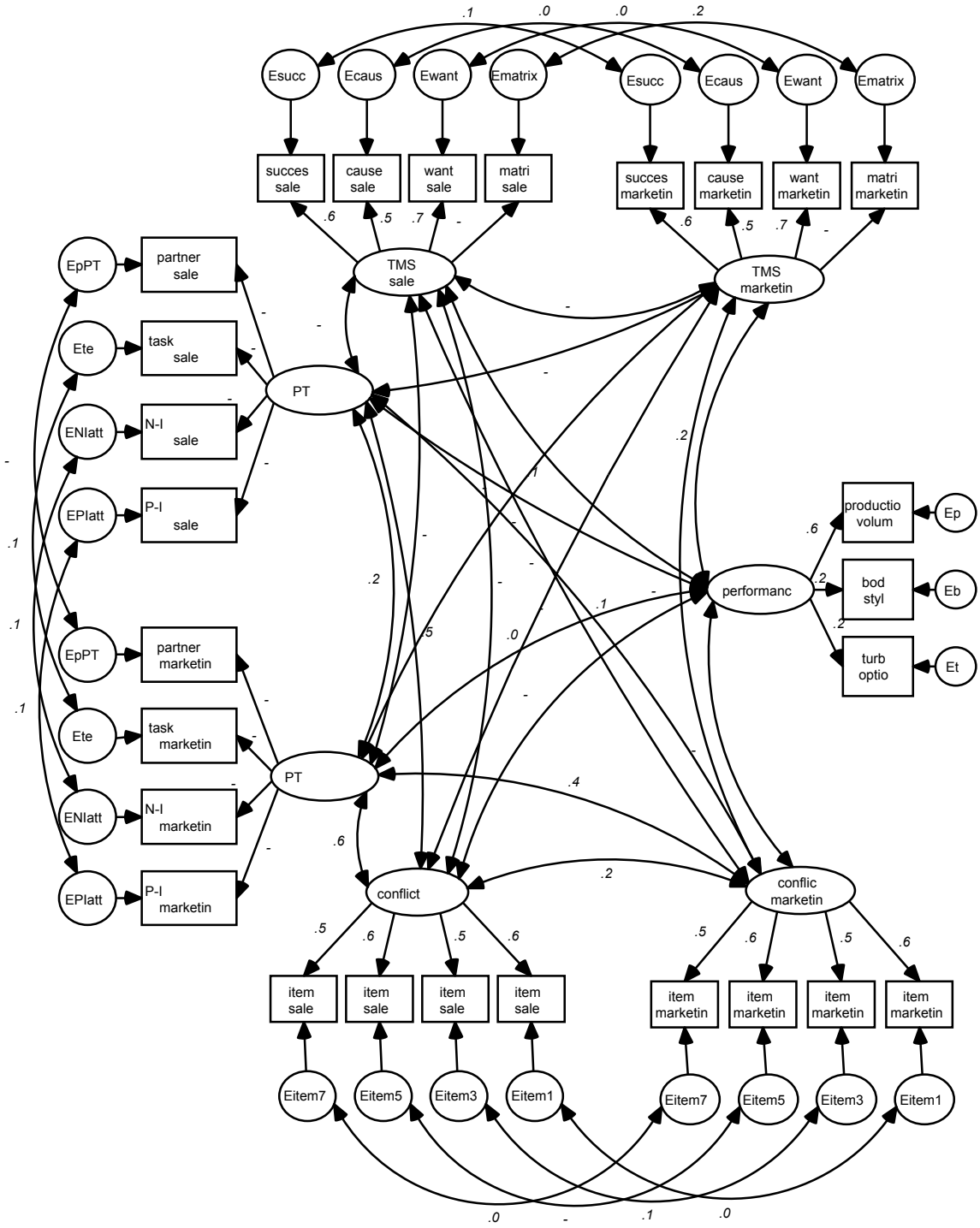


Figure 3. A priori measurement model 1 (MM1).

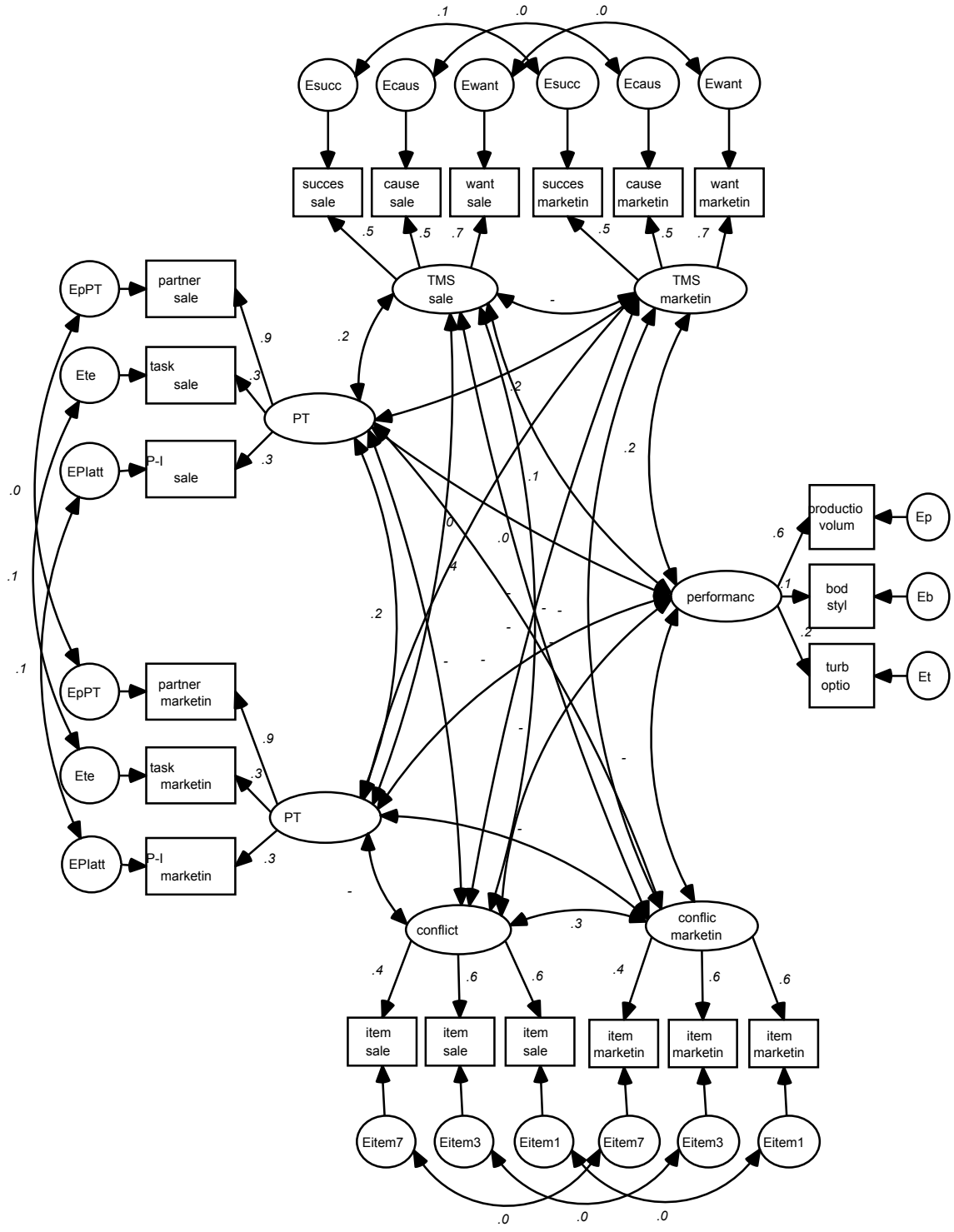


Figure 4. Revised measurement model 1 (MM1).

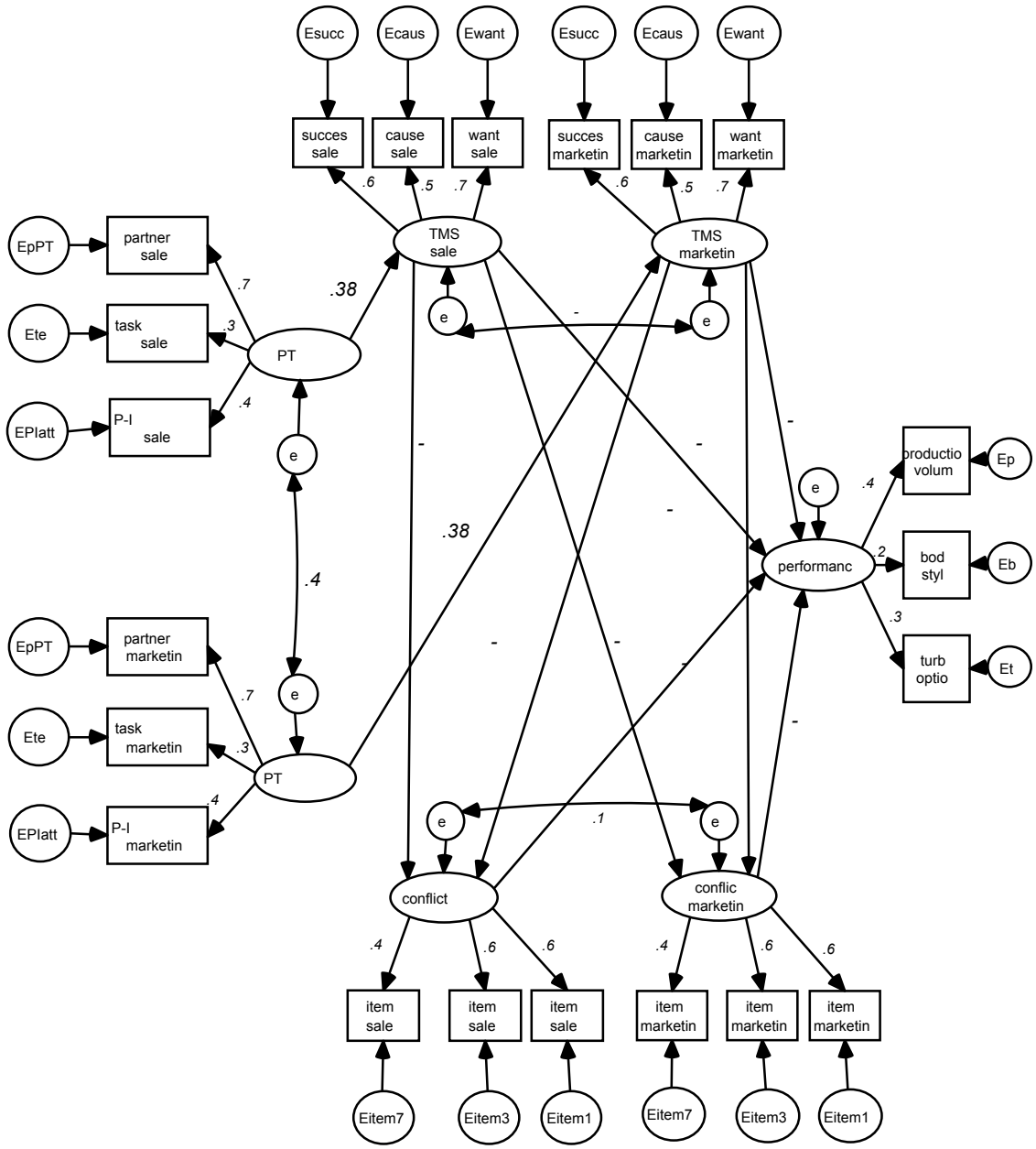


Figure 5. Revised structural model 1 (SM1; * denotes $p < .05$).

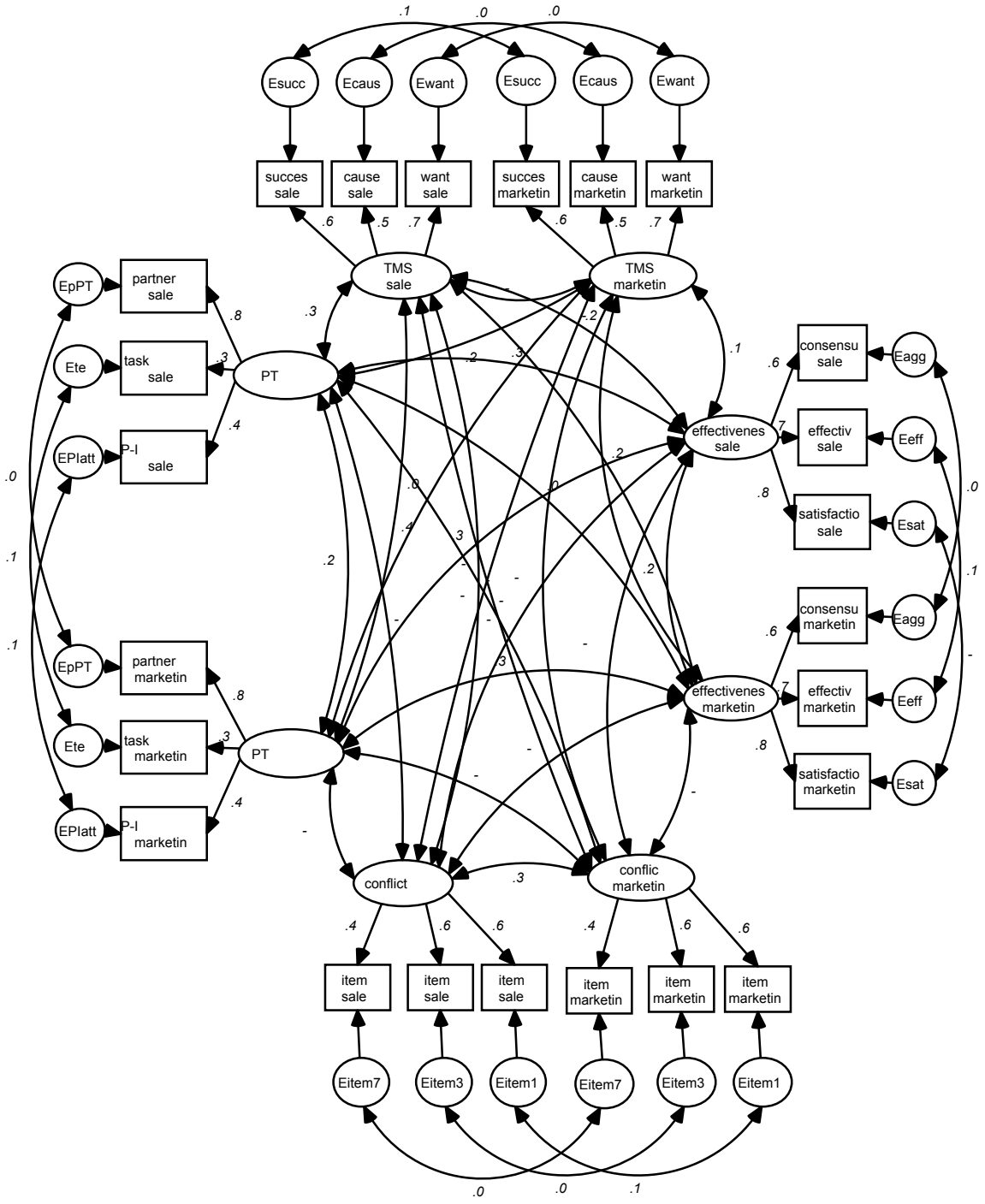


Figure 6. A priori measurement model 2 (MM2).

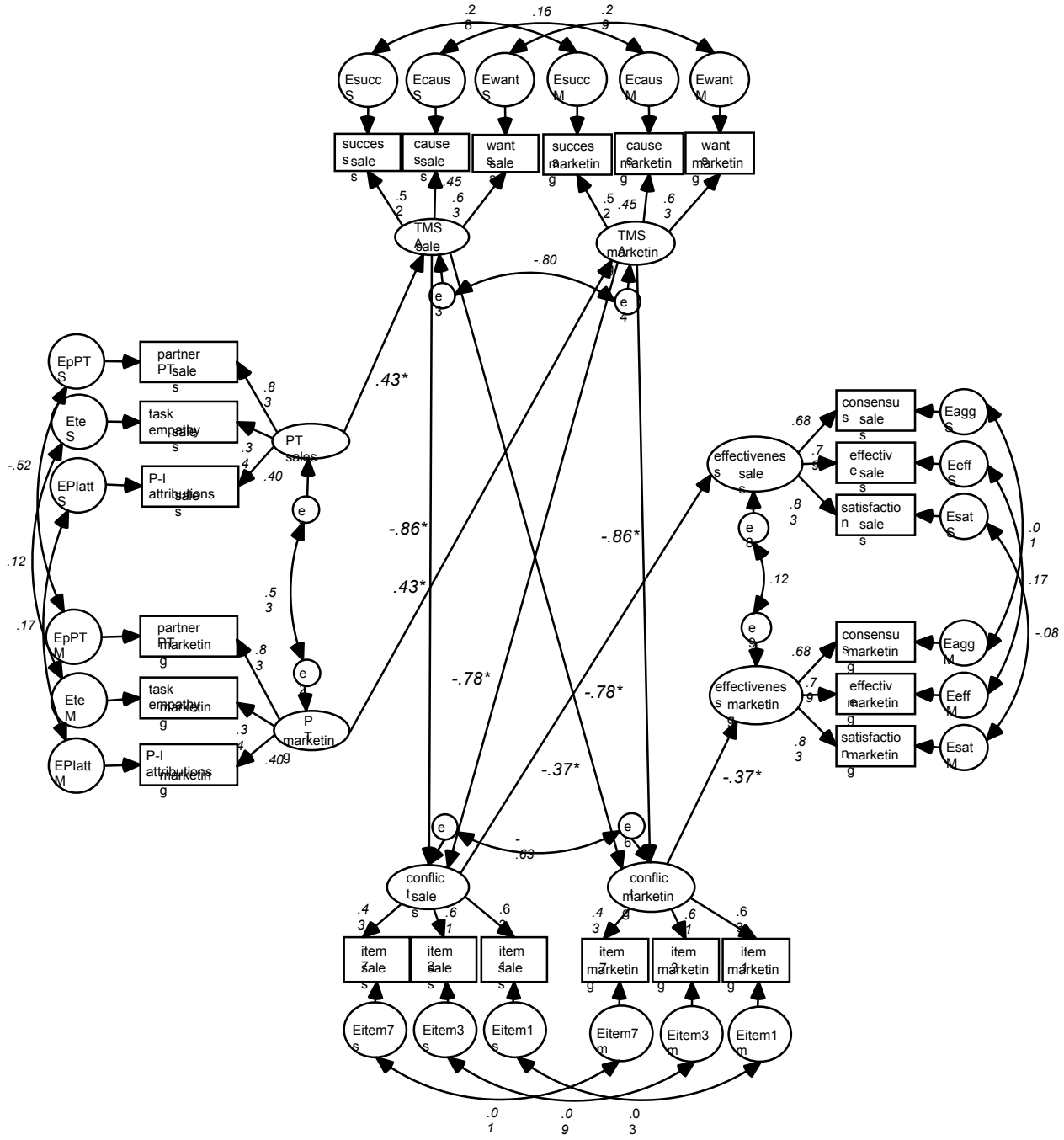


Figure 7. A priori structural model 2 (SM2; * denotes $p < .05$).

Table 1

Descriptive Statistics and Correlations

Variable	*M*	*SD*	1	2	3	4	5	6
1. Partner rated perspective taking	54.15	7.87						
2. Task specific empathy	17.30	3.30	.31**					
3. Internal attributions for positive behavior	13.65	1.83	.34**	.14*				
4. Internal attributions for negative behavior	9.34	2.71	.06	.02	.02			
5. Affective conflict	4.46	1.55	-.41**	-.06	-.20**	.13		
6. Task specific TMSA	3.38	.54	.14	.00	.06	.08	-.22**	
7. TMSA difference score	16.49	6.25	-.04	-.02	.01	.15*	.03	-.01
8. Production volume decision	2.96	2.07	.02	.10	-.07	.02	-.11	.11
9. Body style decision	2.68	1.82	.00	-.10	-.05	.09	-.07	.06
10. Turbo option decision	3.80	2.14	.06	.07	.01	-.03	-.07	-.05
11. Satisfaction with decision	6.02	.73	.20**	.11	.29**	.07	-.19**	.08
12. Decision effectiveness	6.09	.74	.14*	.12	.26**	-.05	-.16*	.02
13. Agreement with decision	85.78	12.25	.24**	.15*	.34**	-.05	-.33**	.11

N = 200

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

Table 1, Continued

Descriptive Statistics and Correlations, Continued

Variable	7	8	9	10	11	12	13
1. Partner rated perspective taking							
2. Task specific empathy							
3. Internal attributions for positive behavior							
4. Internal attributions for negative behavior							
5. Affective conflict							
6. Task specific TMSA							
7. TMSA difference score							
8. Production volume decision	.02						
9. Body style decision	.02	.09					
10. Turbo option decision	-.21**	.15*	.08				
11. Satisfaction with decision	-.04	-.05	-.06	.01			
12. Decision effectiveness	-.01	-.06	-.08	.03	.67**		
13. Agreement with decision	.01	-.10	-.10	-.01	.56**	.53**	

N = 200

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

Table 2

Differences in Demographic Variables by Condition

Variable	Control Mean	Trained Mean	*t*	*p*
Age	19.78	19.37	1.54	.12
Gender	.50	.50	0.00	1.00
Race	3.44	3.60	-1.01	.31
Major	2.53	2.40	.84	.40
GPA	3.20	3.24	-.57	.57
Class rank	2.09	2.05	.25	.80
Work experience	.43	.44	-.14	.89
Classroom team experience	8.96	8.71	.22	.83
Sports team experience	3.42	3.97	-1.06	.29
Work team experience	2.09	2.09	.00	1.00
Familiarity with team member	1.43	1.45	-.15	.88

N = 100 in control group, 100 in trained group

* $p < .05$

** $p < .01$

Table 3

Independent T-Tests on Variables of Interest by Condition

Variable	Trained Mean	Control Mean	*t*	*p*
Partner rated perspective taking	54.42	53.87	.49	.62
Task specific empathy	18.07	16.52	-3.41	.00**
Internal attributions for positive behaviors	13.54	13.76	.85	.40
Internal attributions for negative behaviors	9.52	9.16	-.94	.35
Affective conflict	4.42	4.49	.32	.75
Task specific TMSA	3.46	3.30	-2.17	.03*
TMSA difference score	16.32	17.52	1.24	.22
Production volume decision	2.98	2.94	-.14	.89
Body style decision	2.64	2.72	.31	.76
Turbo option decision	4.30	3.30	-3.39	.00**
Satisfaction with decision	5.99	6.04	.48	.63
Decision quality	6.07	6.10	.29	.77
Agreement with decision	85.67	85.89	.13	.90

Scales include items retained according to the revised MM
N = 100 in control group, 100 in trained group

* $p < .05$

** $p < .01$

Table 4

Latent Mean Structure Analyses on Variables of Interest by Condition

Latent Variable	Latent Mean Difference	S.E.	*p*
Partner rated perspective taking	.04	.10	.66
Task specific empathy	.42	.14	.00**
Internal attributions for positive behaviors	.03	.06	.61
Internal attributions for negative behaviors	.05	.07	.50
Affective conflict	.04	.09	.69
Task specific TMSA	.15	.08	.08
Team effectiveness (decision quality, agreement, and satisfaction)	5.99	6.04	.63

N = 50 in control group, 50 in trained group

* $p < .05$

** $p < .01$

Table 5

Unadjusted and Adjusted Model Fit Indices

	Unadjusted Indices					I-SAT Indices		I-NULL Indices		Adjusted Indices				
Model	χ^2	df	χ^2/df	RMSEA	CFI	χ^2	df	χ^2	df	$\chi^{2'}$	df′	χ^2/df ′	RMSEA′	CFI′
A priori MM1	409.55	327	1.25	.05	.78	--	-	--	--	--	--	--	--	--
Revised MM1	203.60	187	1.09	.03	.94	105.60	90	371.38	120	98.01	97	1.01	.01	1.00
A priori SM1*	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Revised SM1	267.81	208	1.29	.05	.78	105.60	90	371.38	120	162.22	118	1.38	.06	.82
A priori MM2	273.77	248	1.10	.03	.95	181.84	156	584.203	120	91.93	92	1.00	.00	1.00
A priori SM2	324.01	267	1.21	.05	.88	181.84	156	584.203	120	142.16	111	1.28	.05	.93

Root-mean-square difference (RMSEA), comparative fit index (CFI), normed chi-square ratio (χ^2/df), Alternative saturated model (I-SAT)

* did not converge

Table 6

Evidence for Full Mediation from SM2

Paths	β	*p*
TMSA to Affective Conflict (path a – partner effect)	-.75	.00
TMSA to Affective Conflict (path a – actor effect)	-.86	.00
Affective Conflict to Team Effectiveness (path b)	-.32	.00
TMSA to Team Effectiveness (path c')	.13	.14

Table 7

Test for Significance of Indirect Effects (Sobel Test)

Paths	ab	SE_{ab}	z	*p*
TMSA → Affective Conflict (partner) → Effectiveness	-.35	.15	-2.34	.02
TMSA → Affective Conflict (actor) → Effectiveness	-.40	.16	-2.43	.01

APPENDIX B

Participant Materials for the Experimental Task

Strategic Marketing Decisions At Porsche of America: The Carrera Task-Force Simulation*

Version IV

Leonard Greenhalgh
Amos Tuck School of Business Administration
Dartmouth College
Hanover, NH 03755

* The details of this case are partly fictitious and are not meant to represent the actual decisions of Porsche of America.

BACKGROUND INFORMATION

Porsche of America has to formulate a marketing strategy annually for its 911-model series of rear-engined, air-cooled sports cars.

The first Porsche was built in 1948 and was a two-seater based largely on the four-cylinder, air-cooled, rear-engined Volkswagen sedan. By 1970, the model had evolved into a six-cylinder, considerably refined version of the same basic configuration, named the 911. The model enjoyed steady sales growth throughout the 1970's. Supply remained at a level slightly below demand so that Porsche was able to rapidly raise prices of this high-quality specialty line.

This marketing strategy worked well during the 1970's. Porsche generated enough working capital to continually improve the model, so that the 911 became a first-class sports car of the 1970's and a formidable competitor in road racing.

Porsche recognized, however, that the basic configuration of the 911 was becoming technically obsolete. The rear-engine layout ultimately lacked the directional stability of a front-engined car, and air-cooling was too noisy for a luxury car. The success of the 911 had resulted from extraordinary engineering efforts at Porsche's research and development facility in Weissach, Germany, and had been accomplished in spite of the fundamental limitations of the 911. Thus, much of the capital generated by sales of the 911 model was not re-invested in that model line, but rather was invested in the development of two start-of-the-art, front-engined, water-cooled models -- the 944 and the top-of-the-line 958.

The news that the technically obsolete 911 would be supplanted by the 958 and 944 models caused a furor among traditional Porsche enthusiasts. The air-cooled Porsche in its various forms had become a cult-car, and demand for it was increasing steadily despite its high price. Customers were loyal to the model more than to the brand; as a result, customers could not easily be shifted from 911's (around $70,000, as normally delivered) to 944's ($43,000) or 958's ($92,000). In fact, there seemed to be three distinct market segments. Because the opportunity costs of continuing to produce the 911 model were low, Porsche made the decision to tentatively continue this model as the 911 Carrera; however, marketing strategy would have to be reviewed annually by a task force of vice-presidents and managers.

The mission of the Carrera task force is to recommend a product strategy for the next year. The decisions to be made include quantities, body styles, and performance options available. More specifically, the task force must make recommendations on the following issues:

1. **Total Production Volume**: The 911 Carrera model is built in a special section of the Porsche factory in Zuffenhausen, Germany (see Exhibit 1 in the Pictures and Diagrams section for a diagram of the factory layout). This part of the building houses five production lines. The 911 Carrera lines run very slowly by Detroit standards, reflecting the large amount of craftsmanship, hand assembly, and attention to detail that goes into the manufacture of Porsche's more expensive models. These lines could be converted to production of additional 958 models if demand rose to levels beyond the existing capacity for 958's. Indeed, this was an element of Porsche's planning for the 958, but demand has thus far fallen below those optimistic projections. The lines are not suitable for production of the less-luxurious 944's, which must be produced on a faster production line.

The five production lines were designed to comfortably turn out a total of 30,000 Carreras per year. For several years, Porsche turned out this volume, increasing it to 40,000 last year. Below 30,000 units, it is harder to take full advantage of economies of scale; above 30,000, workers often have to put in overtime and the lines become too heavily used to permit an ideal level of preventive maintenance, leading to occasional breakdowns. Maximum capacity is 50,000 Carreras per year; this volume is feasible despite its being taxing to the production people.

2. **Body-Styles**: The 911 Carreras have in the past been built in three body styles: as Coupes (2-door hardtops, priced at $68,000, with typical options), Targas (models with removable roof panels, priced at $70,000), and Cabriolets (traditional soft-top "convertible", priced at $78,000). The mix of body styles produced last year was 70 percent Coupes, 20 percent Targas, and 10 percent Cabriolets. In previous years, the mix was 80 percent Coupes and 20 percent Targas. Porsche's two other model lines -- the 944 and the 958 -- are currently produced as Coupes only, although prototypes of convertible models have been developed for research and testing.

Last year, the task force agreed to phase out the Targa model for the present production year. The Targa had been an interim model before the Cabriolet was introduced two years ago. Almost no one orders a Targa; rather, customers settle for Targas when they can't get Cabriolets. The Targas have unusual aerodynamic characteristics, especially when the roof panels are removed. The wind buffeting at high speeds is unpleasant to the occupants and causes aerodynamic drag, which in turn hurts gas mileage. (Porsche customers typically don't worry about gas mileage but Porsche-USA worries about U.S. federal standards for fuel economy.) In any event, there is agreement among the task force that Targas will no longer be made by Porsche.

Only one model can be built on a particular production line, and for economic reasons (related to set-up costs), the line must remain set-up for that body style for three months. There are five production lines at the factory. Thus, allocations of the various body styles must be decided upon in five-percent increments -- for example, 5 percent Cabriolets, 95 percent Coupes; 10 percent Cabriolets, 90 percent Coupes, and so on (three months of one production line equals one-twentieth of the total annual output).

3. **The Turbo Option**: A turbocharger is a mechanical device that increases the engine's power output by compressing the air-fuel mix that enters the combustion chamber. It creates the power effect of a much larger engine without the disadvantage of the increased weight and internal friction involved in a large engine.

Porsche developed a turbo version of the 911 series during the late 1970's and marketed the resulting high-performance vehicle in very small volumes as a 930. The 930 model was discontinued in 1979 because of technical problems with the turbo units at a time when Porsche could not supply enough non-turbo 911 models. Another consideration was the fact that the 930 was faster than the 5-liter water-cooled 958, which Porsche was marketing as its flagship model.

The technical problems with the turbo units have since been solved, and Porsche has introduced a turbocharged version of the 944. This addition makes the $61,000 944 Turbo almost as fast as the $68,000 Carrera Coupe, which has diluted the Carrera's image as the uncompromising sporting vehicle in Porsche's lineup (the 944 and 958 are positioned more as "Grand Touring" cars, in which some compromises in performance are made in favor of

increased comfort). If the market segments are, indeed, distinct, it has not been clear whether a Carrera Turbo would hurt sales of the updated 958.

Last year, a small number (200) of Carrera Turbos were produced on an experimental basis. The turbocharged versions were not produced as finished vehicles on the regular Carrera production lines. Instead, partially-assembled coupes were diverted to a section of the racing operation to be fitted with the turbo engines, high-performance driveline options, and special bodywork to accommodate the wider wheels and tires. Half of these cars were shipped to the United States. All 200 were sold, at $90,000 each.

The experiment proved that the Carrera Turbo is technically feasible and has some market appeal. Therefore, it is time to reconsider offering a turbo version of the Carrera as a regular production option (meaning that dealers will be free to order a turbocharger for a customer just like they would order a particular color).

Members of the Carrera Task Force

The Carrera task force has six official members, although its meetings are usually only attended by four vice-presidents. The President of Porsche-USA usually makes a point of leaving the task force alone, and, because they are so busy, occasionally vice-presidents request that managers from their respective departments attend the Carrera Task Force meetings in their place. The meeting is being held at corporate headquarters in Zuffenhausen.

ROLE FOR VICE-PRESIDENT OF SALES

The President of Porsche-USA has shown a lot of trust in the Carrera Task Force, and relies heavily on its recommendations. Therefore you do not want to let the President down by being unable to come to an agreement. Nevertheless, you have some specific interests in the outcome of the task force's deliberations. You have missed meetings in the past due to the demands of your U.S. travel schedule. Unfortunately, some agreements were made that you probably would have argued against. This time you need to make a strong input on behalf of the sales force and dealers.

Your position on each of the issues the task force must address is as follows:

1. **Production Volume**: The dealers are screaming for 2-5 times their present allocation of Carreras. Given that the factory can easily produce 50,000, there's no question that you want all of them produced. The deficit in supply of this and other Porsche models has caused dealer antagonism toward you and the rest of the sales department. Any other car manufacturer would have geared up long ago to meet demand. The problem seems to be management's unwillingness to take risks. But in this business, one either takes risks or falls by the wayside. Look at the risk GM took with its Saturn project, or the Japanese with their flurry of new models. You're not asking for anything on that scale. All you want is for Porsche to build the 50,000 Carreras that can easily be produced next year.

Your strongest opposition to keeping the dealers happy with adequate supplies has traditionally come from the marketing department task force representative. Last year the Marketing Vice-President pushed hard to keep volume at 30,000 units and only agreed to a one-year experiment with 40,000 units. In any event, you plan to argue strongly that Porsche produce 50,000 Carreras, as producing less than 50,000 will not satisfy the dealers. You are evaluated primarily on dealer satisfaction, because it is the dealers who purchase cars from Porsche and then, in turn, sell them to the individual consumers (i.e., the dealers are Porsche's "customers").

2. **Body Styles**: You'd like to have 50 percent Coupes and 50 percent Cabriolets to sell. This would please the dealers and maximize sales revenues. The reason for this double benefit is

that the Cabriolets are more expensive models (approximately $10,000 more than the Coupes), which increases dealers' commissions by almost $2000 on each Cabriolet sold. Dealers would therefore like to obtain the maximum number of Cabriolets they can sell, which you estimate to be equivalent to 50 percent of whatever the production run is. You wouldn't want the entire production run to be Cabriolets because people who live or work in high-crime areas prefer Coupes, which are harder for thieves to break into.

3. **Turbo Option**: The dealers would really like to have a turbocharger as optional equipment on the Carrera, and you agree that it's a good idea. People buy Carreras as high-performance cars. The turbo option obviously fits into that performance image. The technology is advancing rapidly so that turbochargers are now as reliable as any other engine part. Ford, Chrysler, and GM all offer turbocharged models, so it's embarrassing for Porsche not to do so. The buying public wants the option and is willing to pay a lot of extra money for it; as a result, Porsche will make more money, the dealers will make more money, and the customers will get what they want.

The recent "experimental" production -- and immediate sale -- of turbo models proved that the demand exists and the option is feasible from a technical standpoint. Now it is time to make the turbo a regular option, so that dealers will be free to order this option for a customer just like they order a certain color of paint or upholstery. Only one hundred cars came into the country as a result of the "experimental" run. That left many dealers very unhappy because they couldn't get even one car. This caused more problems for you than if Porsche hadn't built any at all, and the situation must be rectified.

ROLE FOR VICE-PRESIDENT OF MARKETING

The President of Porsche-USA has shown a lot of trust in the Carrera Task Force, and relies heavily on its recommendations. Therefore you do not want to let the President down by being unable to come to an agreement. Nevertheless, you have some specific interests in the outcome of the task force's deliberations.

Your position on each of the issues the task force must address is as follows:

1. **Production Volume**: The success of the Carrera in the 1980's has been largely attributable to Porsche's keeping supply below demand. The cars are bought by upscale customers, who are willing to spend a lot of money on the car because they know that as long as the cars remain scarce, they will hold their value and therefore be a good investment for their owners. Some people on the task force see the Carrera as a "cash cow" (i.e., it generates a steady, dependable flow of cash) and are urging an increase in volume.

You'd rather reduce volume from last year's level: specifically, you'd rather return production volume to the 30,000 level and increase the price. This seems quite feasible because demand has never been price-sensitive. The total profit to Porsche could be the same and you will have preserved a loyal, exclusive segment of the market.

Your second reason for wanting to restrict output to no more than 30,000 is that the market segmentation is probably less rigid than management thinks, and you can probably shift some potential buyers to the more-expensive, more-profitable 958 model. The hard-core cultists cannot easily be steered away from the Carrera, of course, but many upscale customers who are buying a Porsche for the prestige of its name can -- perhaps as many as 20,000 per year. Sales of 958's have lagged behind your department's aspiration and projections, despite the fact that the 958 is one of the most technically advanced and well developed luxury sports cars in the world. Its unusual styling has made its market acceptance slow, but this was also true of the 911 and its predecessors. The continued availability of the 911 hurts the market growth of the 958, and you'd like to give the 958 -- as Porsche's flagship model -- all the help it can get. You are being judged primarily on the success of the 958, and your prestige and credibility in the company are at stake.

Last year, the marketing department somehow got talked into producing 40,000, after several previous years of production at the 30,000 level. They got your department to agree to 40,000 as a one-year "experiment". As far as you're concerned, the experiment proved nothing. You don't intend to let last year's volume set a precedent or baseline for this year's production plans. You should therefore insist on a maximum of 30,000 units. As far as you are concerned, the fewer Carreras built, the better.

2. **Body Styles**: Cabriolets currently make up 10 percent of the production run. You'd like to see the number reduced to zero for two reasons. First, the Cabriolet is a very attractive automobile and its introduction has enhanced the image of the Carrera line. Second, there is a growing demand for convertibles throughout the automobile market, and you've been pushing for development of a convertible version of the 958. You don't want the convertible customers to be steered toward the Carrera; you would rather steer this segment toward a very expensive and immensely profitable 958 convertible.

Your official reason for arguing that next year's production run should consist entirely of coupes is that some market research data (collected several years ago) showed that 90 percent of potential buyers wanted Coupes and only 10 percent wanted Cabriolets. Although this information is a little old, at least it's hard data. The vast majority of buyers clearly want the Coupes; therefore you are opposed to building any Cabriolets next year.

3. **Turbo Option**: You do not want to offer the Carrera with a turbo option. The reason you oppose the option is that a Carrera Turbo would cost as much as or more than a 958; what's worse, it would be faster than the 958, which would further erode the 958's position as Porsche's flagship model. The Carrera's top speed is currently 150 mph, which is already close to the 160 mph top speed of the 958. The addition of a turbocharger to the Carrera raises its top speed above 165 mph. Although few drivers ever get up to maximum vehicle speed, speed potential is a prestige factor that is important to the marketing program.

Furthermore, the current practice of converting a few Carreras to turbo option cars in the racing shop seems unsatisfactory because it can't be cost effective. Thus, you intend to argue against producing any Carrera turbos next year.

MEMORANDUM

TO: Vice President of Sales
Central Office

FROM: M. B. Chambers
President and CEO

RE: Task Force Meeting

Due to unforeseen circumstances the Vice President of Production and the Vice President of Research and Development will be unable to attend today's Task Force meeting. However, time constraints and budgetary requirements make it imperative that the available members of the Task Force meet today as scheduled and forward your recommendations to me as soon as possible.

The final recommendations should address the needs and constraints of those Task Force members who are able to attend the meeting, and *must also address the needs and constraints of the Vice President of Research and Development and the Vice President of Production who will be absent.* Therefore, the Vice President of Production and the Vice President of R&D have provided you with a synopsis of their respective positions on each of the three issues and relevant rationale and information that may help you better understand their reasoning.

Remember the central objective is to make the best possible recommendations for Porsche of America as a whole.

MEMORANDUM

TO: Vice President of Marketing
Central Office

FROM: M. B. Chambers
President and CEO

RE: Task Force Meeting

Due to unforeseen circumstances the Vice President of Production and the Vice President of Research and Development will be unable to attend today's Task Force meeting. However, time constraints and budgetary requirements make it imperative that the available members of the Task Force meet today as scheduled and forward your recommendations to me as soon as possible.

The final recommendations should address the needs and constraints of those Task Force members who are able to attend the meeting, and *must also address the needs and constraints of the Vice President of Research and Development and the Vice President of Production who will be absent.* Therefore, the Vice President of Production and the Vice President of R&D have provided you with a synopsis of their respective positions on each of the three issues and relevant rationale and information that may help you better understand their reasoning.

Remember the central objective is to make the best possible recommendations for Porsche of America as a whole.

SYNOPSIS OF POSITIONS FOR V.P. OF PRODUCTION

1. <u>Production Volume</u>: Production *prefers to build 50,000 Carreras next year because:*

- Production is evaluated on efficiency. The higher the total volume, the easier it is to achieve high efficiency levels.
- Planning for 50,000 units enables Production to make capital improvements in the Carrera lines (i.e., if you plan to make more cars, you are allowed more money to improve the lines so that you can accommodate the larger volume)
- Capital improvements would mean fewer breakdowns and less overtime.
- If 958 model sales ever shoot up, additional line capacity will be needed.

2. <u>Body Styles:</u> *Production prefers to build all the Carreras as Coupes because:*

- Production wants to avoid splitting production between Coupes and Cabriolets.
- All of the 958's and 944's are built as Coupes only.
- Because it is structurally superior, the Coupe is much safer than the Cabriolet.
- The Coupe is easier to produce and more efficient than the Cabriolets.
- If the 20 percent Targas are replaced with Coupes, that leaves an insignificant 10 percent Cabriolets, which are a big nuisance.

3. <u>Turbo Option:</u> *Production is against the turbo option because:*

- Turbocharging technology is new, and is not yet reliable.
- Other manufacturers offering turbo models have had some recalls.
- Porsche customers expect high quality and turbochargers cannot be guaranteed.
- Adding a turbocharger requires making over 100 changes in the rest of the car to compensate for the added power and heat.
- The turbo version is not really an "option", but it is a different car that should be built on its own production line.
- Even without a turbocharger, the Carrera is faster than any turbocharged car currently produced by any other manufacturer.

SYNOPSIS OF POSITIONS FOR V.P. OF RESEARCH AND DEVLOPMENT

1. Production Volume: *R&D wants to drop from the current 40,000 Carreras per year to 30,000 next year, to less in subsequent years because:*

- The Carrera is the last rear-engined model Porsche will produce.
- R&D wants to phase out the Carrera and move on to other projects.
- When production is limited to 30,000 the R&D department is able to use idle capacity on the Carrera production lines to build factory race cars.
- More brand loyalty comes from competition successes than ever comes from continuing to supply an obsolete design.

2. Body Style: *R&D wants an equal mixture of Coupes and Cabriolets because:*

- R&D has a good engineering group that specializes in convertibles. By building 50 percent Cabriolets, R&D can justify keeping these engineers.
- Losing the engineers would result in a significant cut in the R&D budget.
- Porsche will need these engineers when it comes time to do the final production development of convertible versions of the 958 and 944 models.
- The Cabriolets generate higher profits than the Coupes, so the company ought to jump at the chance to build the full 50 percent.

3. Turbo Option: *R&D is strongly in favor of offering the turbo option on the Carrera because:*

- Turbocharging has become quite reliable.
- The experimental run proved that turbocharging is technologically feasible.
- Porsche must build at least 200 turbo units a year for sale to the general public, otherwise Porsche cannot use turbochargers on their race cars.
- Without turbochargers, Porsche race cars cannot compete on an even footing with lesser cars.
- “Racing is Marketing” – People go out and buy winning race cars.
- If the alternative is to delete the turbo option completely, R&D is willing to continue to build the necessary 200 cars per year in their racing facilities.

APPENDIX C

Questionnaire Used to Collect Demographic Information and Control Variables

The following information will be used ONLY for statistical purposes. All responses will be kept strictly confidential.

Demographic Information:

Age: _____

Major: _____

Gender
(Circle one): F M

Grade Point Average (GPA): _____

Race
(Circle one): African American
Asian/Pacific Islander
Native American
Caucasian
Other: _____

Class Rank
(Circle one): Freshman
Sophomore
Junior
Senior

Work Experience:

Do you Currently hold a job? Y N

If yes,

1. How long have you been at your current job? _____ Months
2. How many hours per week do you work? _____ Hours per week
3. Is your current job to be a career-oriented position or a job of convenience? (circle one)

Team Experience: Below is a list of different types of teams. Please indicate how many of each type of team you have been a member of in the last five years.

_____ Class project teams (i.e., teams formed to complete tasks for a class)

_____ Sports/Athletic teams (e.g., collegiate sports, intramurals, recreational)

_____ Work Teams (i.e., teams formed at work)

_____ Other (e.g., Home Owner's Association, committees)

Teammate Familiarity: Please circle the number that indicates how acquainted you are with the individual whom you will be working with during this session.

	1	2	3	4	5
Teammate	Not at all acquainted	Slightly acquainted	Acquainted	Fairly well acquainted	Very well acquainted

Researcher Familiarity: Please circle the number that indicates how acquainted you are with the researcher who is running the session you are about to participate in.

	1	2	3	4	5
Teammate	Not at all acquainted	Slightly acquainted	Acquainted	Fairly well acquainted	Very well acquainted

APPENDIX D

Modified Version of the Empathic Understanding Subscale form the Barrett-Lennard Relationship Inventory (Barrett-Lennard, 1962)

Instructions: Below are listed a variety of ways that one person could feel or behave in relation to another person. Please consider each statement with respect to whether you think it is true or not true in your present relationship with your teammate. Mark each statement in the left margin according to how strongly you feel it is true or not true. Please answer every item. **Write in +1, +2, +3, -1, -2, -3, to stand for the following answers.**

REMEMBER: YOU ARE RATING YOUR TEAMMATE!

+1	+2	+3	-1	-2	-3
I feel that it is probably true or more true than untrue	I feel that it is true	I strongly feel that it is true	I feel that it is probably untrue or more untrue than true	I feel that it is untrue	I strongly feel that it is untrue

_____ 1. He/She tried to see things through my eyes.

_____ 2. He/She understood my words but not the way I felt.

_____ 3. He/She was interested in knowing what my experiences meant to ME.

_____ 4. He/She nearly always knew exactly what I meant.

_____ 5. At times he/she jumped to the conclusion that I feel more strongly or more concerned about something than I actually did.

_____ 6. Sometimes he/she thought that I felt a certain way because he/she felt that way.

_____ 7. He/She understood me.

_____ 8. He/She understood what I said, from a detached objective point of view.

_____ 9. His/Her own attitudes toward some of the things I said, or did, stopped him/her from really understanding me.

_____ 10. He/She appreciated what my experiences felt like to ME.

_____ 11. He/She did not realize how strongly I felt about some of the things we discussed.

_____ 12. He/She responded to me mechanically.

_____ 13. He/She usually understood all of what I said to him.

_____ 14. When I did not say what I meant clearly he/she still understood me.

_____ 15. He/She tried to understand me from his/her own point of view.

_____ 16. He/She could be deeply and fully aware of my most painful feelings without being distressed or burdened by them himself/herself.

Reference

Empathic Understanding Subscale from the *Barrett-Lennard Relationship Inventory* (Barrett-Lennard, 1962)

Barrett-Lennard, G. T. (1962). Dimensions of therapist response as causal factors in therapeutic change. *Psychological Monographs: General and Applied, 76*, 43. 1-36.

Reverse Score: 2, 5, 6, 8, 9, 11, 12, 15

Scale: Sum up responses to score. High scores indicate more empathy shown by partner.

APPENDIX E

Task Specific Empathy Scale

Instructions: Please circle the number that indicates how much you agree or disagree with each statement, using the rating scale below:

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree/Disagree	Agree	Strongly Agree

1. My teammate's satisfaction or dissatisfaction with our decisions did not affect me emotionally.	1	2	3	4	5
2. The prospect that my teammate's departmental objective/needs would not be met did not concern me.	1	2	3	4	5
3. My teammate's departmental successes or failures led me to feel as if such outcomes were my own.	1	2	3	4	5
4. Any pleasure or displeasure I felt following the resolution of the issues was due in part to my teammate's apparent feelings of success or failure.	1	2	3	4	5
5. Because the company outcomes were most important, I was not concerned for my teammate when a decision was made to benefit the company rather than his/her department.	1	2	3	4	5
6. I was emotionally affected by how my teammate felt about our decisions.	1	2	3	4	5

Reverse Score: 1, 2, 5

Scale: Sum up responses to score. High scores indicate more empathy.

APPENDIX F

The Attribution Scale

Instructions: You just completed a team task for which you and your partner came to a consensus regarding production, body styles, and turbo option. The team goal was to make the best possible recommendations for Porsche of America. Think about what your teammate did and said as your team worked that you feel was particularly good. **List 5 things that you think your teammate did BEST in during this decision making task** (these may be behaviors, attitudes, statements, decisions, etc.).

1.

2.

3.

4.

5.

Now, using the scale provided please rate each of the following items in terms of how much they explain why your teammate did the 5 things you listed above.

1	2	3	4
Not at all	Very little	To some degree	To a great extent

1. Pressures from his/her department	1	2	3	4
2. Effort	1	2	3	4
3. Teammate's personality	1	2	3	4
4. Teammate's area of expertise (i.e. marketing or sales)	1	2	3	4
5. Teammate's overall attitude	1	2	3	4
6. The difficulty of our task	1	2	3	4
7. Teammate's ability level	1	2	3	4
8. Luck	1	2	3	4

Internal Attribution for Positive Behaviors

Reverse Score: 1, 4, 6, 8 (external items)

Scale: Sum up responses to score. High scores indicate more internal attributions for positives.

(i.e., more self-like attributions, and therefore greater perspective taking)

Instructions: You just completed a team task for which you and your partner came to a consensus regarding production, body styles, and turbo option. The team goal was to make the best possible recommendations for Porsche of America. Think about what your teammate did and said as your team worked that you feel was particularly bad. **List 5 things that you think your teammate did WORST during this decision making task** (these may be behaviors, attitudes, statements, decisions, etc.).

1.

2.

3.

4.

5.

Now, using the scale provided please rate each of the following items in terms of how much they explain why your teammate did the 5 things you listed above.

1	2	3	4
Not at all	Very little	To some degree	To a great extent

1. Pressures from his/her department	1	2	3	4
2. Effort	1	2	3	4
3. Teammate's personality	1	2	3	4
4. Teammate's area of expertise (i.e. marketing or sales)	1	2	3	4
5. Teammate's overall attitude	1	2	3	4
6. The difficulty of our task	1	2	3	4
7. Teammate's ability level	1	2	3	4
8. Luck	1	2	3	4

External Attributions for Negative Behaviors

Reverse Score: 2, 3, 5, 7 (internal items)

Scale: Sum up responses to score. High scores indicate more external attributions for negatives (i.e., more self-like attributions, and therefore greater perspective taking)

APPENDIX G

The Intragroup Conflict Scale (Jehn, 1994)

Instructions:

Please respond to the following questions using a scale from 1 to 5, **where 1 = none, and 5 = a lot**.

		None				A lot
1.	How much friction was present in your work group?	1	2	3	4	5
2.	To what extent were there differences of opinions regarding the task in your work group?	1	2	3	4	5
3.	To what extent were personality clashes present in your work group?	1	2	3	4	5
4.	How often did people in your work group disagree about the work being done?	1	2	3	4	5
5.	How much anger was present in your work group?	1	2	3	4	5
6.	How frequently were there disagreements about the task you were working on in your work group?	1	2	3	4	5
7.	How much emotional conflict was there in your work group?	1	2	3	4	5
8.	How often did people in your work group disagree about ideas regarding the task?	1	2	3	4	5

Reference

Intragroup Conflict Scale (Jehn, 1994).

Jehn, K. A. (1994). Enhancing effectiveness: An investigation of advantages and disadvantages of value-based intragroup conflict. *The International Journal of Conflict Management, 5*(3), 223-238.

Scale: Sum up responses to score. High scores indicate more affective/cognitive conflict.

Affective conflict subscale: items 1, 3, 5, 7
Cognitive conflict subscale: items 2, 4, 6, 8

APPENDIX H

TMSA Difference Score Measure

On the ***following*** two pages are two lists of objectives relevant to the team decision-making task you just completed. You will be asked to make ratings regarding either the importance or helpfulness of the objectives relative to the arguments made by each task force member (i.e., Sales, Marketing, Production, or Research and Development). Below is an example of the type of ratings you will be making. **Please read through the following example for a better understanding of the task.**

EXAMPLE

Suppose that a task force was developed to oversee the construction of a new building in downtown Knoxville. The task force consists of four members in charge of different areas of operation that are necessary for the successful completion of the project: Engineering, Materials Supply, Safety, and Budget. After a meeting, these task force members were given the following instructions and asked to complete the table. Below is an example of one task force member's ratings. Please read the instructions that the example task force members were given and consider the two items of information presented in this example.

Example Instructions: Please complete the following table by rating each objective to indicate how important it was to the arguments made by each task force member. If the objective was very important to a task member's argument, then it should be rated higher for that member than for a task force member for whom it was less important. Rate each item based on the following scale:

1	2	3	4	5	6	7
Very Unimportant	Unimportant	Somewhat Unimportant	Neither Important Nor Unimportant	Somewhat Important	Important	Very Important

Objective	**Task Force Member**			
	Engineering	**Materials Supply**	**Safety**	**Budget**
Minimizing Expenses	1	5	1	7
Complying with Safety Standards	6	3	7	3

In the above example, you can see that this rater indicated that the objective of "Minimizing Expenses" was very important to the task force member in charge of the Budget (rating of 7). This item was also seen as somewhat important to the task force member in charge of Materials Supply (rating of 5), but very unimportant to Engineering or Safety managers (ratings of 1).

The objective of "Complying with Safety Standards" was seen as being important to two of the managers, but it is most important to the Safety manager (rating of 7). This item was also seen

as important to the Engineering manager, who would design the building (rating of 6). Although safety codes were not as important to the Materials Supply and Budget managers, such codes cannot be ignored by these managers, as they could affect the type of materials that would need to be purchased, and therefore could also affect the budget for the project. Thus, a rating of 3 (somewhat unimportant) was given for these task force members.

On the following two pages, you will be asked to make ratings similar to the ones in this example.
Please ask if we have not made it clear what you are to be rating.

Listed below and on the following page are two sets of objectives related to the team decision-making task you just completed. Please read each set of instructions carefully before completing the following tables.

PART I

Instructions: **Please complete the following table by rating each objective to indicate how important it was to the arguments made by each task force member (or if a member was not present at the meeting how important do you think each would be to that member). If the objective was highly important to a particular member, then it should be rated higher for that member than for a task force member for whom it was less important. For the role that you played in the task, rate how important the objectives were to your own arguments.**

Please ask if you have any questions.

Rate each item based on the following scale:

1	2	3	4	5	6	7
Very Unimportant	Unimportant	Somewhat Unimportant	Neither Important Nor Unimportant	Somewhat Important	Important	Very Important

Objective	**Task Force Member**			
	Sales	**Marketing**	**Production**	**Research & Development**
1. Dealer Satisfaction				
2. Success of the 958				
3. Success of the Racing Program				
4. Efficiency				

Please go on to the next page . . .

PART II

Instructions: **Please complete the following table by rating each activity to indicate how helpful or harmful it would be to each task force member if the company were to engage in this activity. If it would be very helpful to a particular task force member that the company engage in a particular activity, then that activity should be rated higher for that member than for a task force member for whom it would be less helpful. Likewise, if it would be very harmful to a particular task force member that the company engage in a particular activity, then that activity should be rated lower for that task force member than for a task force member for whom it would be less harmful. For the role that you played in the task, rate how helpful or harmful the activities would be to you.**

Please ask if you have any questions.

Rate each item based on the following scale:

1	2	3	4	5	6	7
Very Harmful	Harmful	Somewhat harmful	Neither helpful nor harmful	Somewhat helpful	Helpful	Very helpful

Activity	**Task Force Member**			
	Sales	**Marketing**	**Production**	**Research & Development**
5. Producing a Low Volume of 911				
6. Producing a High Volume of 911				
7. Providing a Turbo Option				
8. Not Providing a Turbo Option				
9. Producing all Cabriolets				
10. Producing all Coupes				
11. Producing an Equal Number of Coupes and Cabriolets				

APPENDIX I

Task Specific Team Member Schema Accuracy

Instructions: Do your best to answer each of the following questions about *your teammate's positions* with no more than a few brief sentences. If you are unsure just do the best you can. **Please be as professional as possible with your language and tone.**

1. Based on your discussion in the meeting (the task you just completed), what were your teammate's main wants or needs?

2. What factors do you think caused your teammate to advocate a certain position(s)?

3. To what degree did your final decisions meet your teammate's wants and needs?

Instructions: On a scale of 1 (very inaccurate) to 4 (very accurate) rate how accurately you think *your teammate* answered each of the questions on the preceeding page.

Question #1. Based on your discussion in the meeting (the task you just completed), what were your teammate's main wants or needs?

1	2	3	4
Very Inaccurate	Inaccurate	Accurate	Very Accurate

Question #2. What factors do you think caused your teammate to advocate a certain position(s)?

1	2	3	4
Very Inaccurate	Inaccurate	Accurate	Very Accurate

Question #3. To what degree did your final decisions meet your teammate's wants and needs?

1	2	3	4
Very Inaccurate	Inaccurate	Accurate	Very Accurate

APPENDIX J

Measure of Team Effectiveness, From the Company Perspective

1. The overall goal of your team was to recommend the best possible production strategy to the President of Porsche of America. With the best interests of the company in mind, please indicate how satisfied you are with your team's final recommendation on each of the issues below. **Rate your satisfaction on a scale from 1 (very unsatisfied) to 7 (very satisfied).**

	Very unsatisfied	Unsatisfied	Somewhat unsatisfied	Neither satisfied nor unsatisfied	Somewhat satisfied	Satisfied	Very satisfied
Production volume	1	2	3	4	5	6	7
Body style	1	2	3	4	5	6	7
Turbo option	1	2	3	4	5	6	7
Overall satisfaction	1	2	3	4	5	6	7

2. With the best interests of the company in mind, please indicate how effective you believe your team's final recommendations will be in ensuring the continued success of Porsche of America. **Rate this level of effectiveness on a scale from 1 (very ineffective) to 7 (very effective).**

	Very ineffective	Ineffective	Somewhat ineffective	Neither effective nor ineffective	Somewhat effective	Effective	Very Effective
Production volume	1	2	3	4	5	6	7
Body style	1	2	3	4	5	6	7
Turbo option	1	2	3	4	5	6	7
Overall effectiveness	1	2	3	4	5	6	7

3. With regard to the decisions made by your team, it is possible that you have 100% agreement with your team's decisions, 0% agreement with your team's decisions, or somewhere in between. With the best interests of the company in mind, **please indicate your level of agreement with each of your team's decisions using a scale from 0% (no agreement) to 100% (complete agreement).** (Please note that your ratings should reflect your level of agreement from 0-100% for each issue – the four ratings should not necessarily total 100%).

Production volume _____
Body style _____
Turbo option _____
Overall _____

APPENDIX K

Manipulation Check

Instructions: Please circle the behavior that best fits the definition provided.

1. _____ involves paraphrasing and restating the positions, rationale, and feelings of your teammate with warmth, accuracy, and authenticity.

    a. Role reversal
    b. Validating other's information
    c. Concentration
    d. Framing information

2. When you _____, you articulate your own experience, constraints, rationale, and opinions to your teammate.

    a. validate other's information
    b. offer complete information
    c. compromise
    d. question directly

3. _____ involves using your teammate's unique terminology and concepts that are familiar and important to him or her when explaining your own positions, rationale, and constraints.

    a. Role reversal
    b. Framing information
    c. Direct questioning
    d. Active listening

4. Referring to the information and suggestions provided by your teammate and conveying your appreciation for his or her contribution is called _____.

    a. active listening
    b. framing information
    c. validating other's information
    d. offering complete information

5. When you specifically ask your teammate how he or she thinks and feels about task relevant issues and why he or she thinks and feels that way you are engaging in _____.

    a. compromise
    b. direct questioning
    c. role reversal
    d. active listening

APPENDIX L

Outline of Perspective Taking Behavioral Skills Training

TRAINING OUTLINE

I. Lecture Portion
- A. Defining Perspective Taking
  1. Imagining what your partner is experiencing
  2. Communicating your understanding to your partner

- B. Why is Perspective Taking Important to Teams?
  1. Improve Accuracy
     a. Constraints
     b. Expertise
     c. Frame of Reference
  2. Decrease Misunderstandings

II. Teaching Perspective Taking Behaviors
- A. Role Reversal (Brief video example)
- B. Direct Questioning (Brief video example)
- C. Offering Complete Information (Brief video example)
- D. Framing Information (Brief video example)
- E. Validating Others Information (Brief video example)

III. Modeling Perspective Taking Behaviors and Interactive Learning
- A. Watch negative perspective taking scenario
- B. Practice – Have participants identify missed perspective taking opportunities (what perspective taking behaviors could have been used) and outline exactly what should have been said

IV. Feedback
- A. Experimenter's Comments and Suggestions

APPENDIX M

Script for Data Collection Session

DATA COLLECTION SCRIPT

[HAVE STUDENTS SIT AT ASSIGNED DESK (SALES OR MARKETING) UPON ARRIVAL] Good morning/afternoon/evening. Thank you for volunteering to participate in this research project. My name is _____, and I'll be leading you through today's session.

[INFORMED CONSENT] Before we get started I need to go over the informed consent. Anytime you participate in research at the University of Tennessee the researcher must provide you with information regarding the requirements of the study and any potential risks or benefits. Read along with me as I go over the consent form. *Read over form.* If you don't have any questions you may sign the form and pass it back to me.

The two of you will be working on a couple of exercises together today, so why don't you take a minute to introduce yourselves to each other. **[INTRODUCTIONS – FILL IN NAMES ON TEAM COVER SHEET]**

Before we get started, there will be several times during this session when you will have to provide your Participant ID number. Please use the last 5 digits of your student ID number as your Participant ID.

[BACKGROUND] First, I would like you to complete a short background survey. Please put your Participant ID at the top of the page, and return the form to me when you have completed it.

[COLLECT FORMS WHEN COMPLETE]

****

[PRETASK SURVEY] The next set of surveys you will complete is on the computer **[Perspective Taking, EETS]**. **[OPEN THE PRETEST LINK ON THE DESKTOP]** First enter your Participant ID number and click continue. Please be sure to read all instructions and items carefully. When you've completed the entire survey wait for further instructions.

****

[TRAINING CONDITION] The first activity you will participate in is a brief training session dealing with team process and performance. After this training session, you will work together as a two-person team on a group decision-making task.

The training you are about to receive focuses on work teams, and what skills make teams successful. One skill that can improve team performance is perspective taking.

In essence perspective taking is the cognitive process by which you imagine what it is like to be in someone else's shoes. So in the context of work teams it is being able to think about a situation or experience not from your own perspective, but from the perspective of your teammate. When you are taking someone's perspective, you generally ask yourself what would this situation look like if I were in my teammate's position.

It should not be too difficult for you to imagine how having teammates who are good at perspective taking can improve the team's experience and its performance. Just because two people are teammates does not mean that they perceive every situation in the same way. Members of a team may have different pressures or constraints on them that force them to look at situations a certain way. They may also have different types of knowledge or experience with regards to a given situation. Here is an example to illustrate my point.

OUTLINE THE TRAINING SIMULATION

Scott and Katie are classmates in a core undergraduate business class. Scott is majoring in marketing and Katie is majoring in accounting. They have been assigned to a project team and have been given the task of starting their own personal computing business. As a team they hope to attain the highest profit margins in the class.

Because of their differing backgrounds Katie has been assigned the financial responsibilities of the company and Scott has been asked to handle the advertising campaigns. Scott is very knowledgeable about how to create high quality advertisements and how to determine what segments of the population should be targeted. Through his marketing classes he has learned that no expense is too great in order to generate the right creative (i.e., advertisement) for the right audience. After all, marketers are ultimately evaluated on how well an ad resonates with the target audience. On the other hand, Katie's specialty is managing and trimming costs in order to maximize profits. She understands that time delays and unnecessary spending will raise costs, a metric which is used to evaluate her effectiveness.

If Scott is good at perspective taking and can imagine himself in Katie's shoes (i.e., having to keep costs down), he will understand why Katie insists on using less expensive materials for ads and focus groups, and he should be less likely to just assume that Katie is being difficult to work with. Scott and Katie should be better able to develop integrative solutions that meet both their needs.

However, if Scott is poor at perspective taking and therefore unable to see why Katie insists on using low cost materials and supplies, he may misattribute her behavior to stubbornness. This misunderstanding may result in heated unhealthy conflict and an unwillingness to try to develop integrative solutions.

Can you see how taking the perspective of your teammate can reduce misunderstandings and improve overall team performance? Tell me about a time when you or someone you worked with was successful or unsuccessful at taking a teammate's perspective?

Although I told you that perspective taking is a cognitive process of imagining yourself in another's situation, the process is made possible and enhanced by certain behavioral skills. These behaviors allow you to not only take another's perspective, but also to communicate your understanding of your teammate's perspective. So not only do you better understand your teammate's predicament, but now your teammate knows you understand! I now want to teach you a few of the behaviors that can be used in teams to improve perspective taking. **[PASS OUT CHEAT SHEETS]**

First is role reversal. Role reversal requires that you simply act as a mirror, reflecting the thoughts of your teammate. In performing role reversal you paraphrase and restate the positions, rationale, and feelings of your teammate. However it is not enough that you paraphrase, you must do so with warmth, accuracy, and authenticity. A half hearted repeat of your teammate's feelings on a given matter will not result in better perspective taking. You must be genuine in your attempt to rephrase your teammate's position. Here is an example of role reversal with our friends Scott and Katie:

VIDEO EXAMPLE FROM ABOVE WITH ROLE REVERSAL

Katie appeared genuine and accurate and hopefully conveyed to Scott her understanding of his situation.

The second behavior is direct questioning. This one is pretty basic and quite necessary. In order to be accurate about your teammate's perspective you must understand their views, expertise, and constraints. What does he or she think about the task at hand? Why does he or she think and feel the way they do? In order to know you have to ask and be specific. Here is an example of direct questioning:

VIDEO EXAMPLE FROM ABOVE WITH DIRECT QUESTIONING

By asking specific questions Scott is better able to understand Katie's position and rationale.

The third behavior is offering complete information about yourself. Your teammate can only take your perspective if you give it to them! You must try to provide your teammate with complete information regarding your experience and expertise, your constraints, your rationale, and your views. First I am going to show you an example of giving incomplete information:

VIDEO EXAMPLE FROM ABOVE WITH INCOMPLETE INFORMATION

Notice that Scott does not fully explain his position, and gives only limited rationale when he says "it's obvious the customers want it". Now here is an example of giving complete information:

VIDEO EXAMPLE FROM ABOVE WITH COMPLETE INFORMATION

In this example Scott provides Katie with complete information regarding his position, his rationale, and his expertise.

The fourth behavior I want to cover is assuring others that you value their input. The way you let your teammate know that you appreciate his or her contribution is by referring to the unique information and suggestions that your teammate provides, and by thanking your teammate for his or her input. These steps may improve perspective taking for both you and your teammate. For example:

VIDEO EXAMPLE FROM ABOVE WITH VALIDATING OTHERS' INFO

Hopefully, you saw how Scott acknowledged the unique information that Katie provided him, that is he didn't know how much the materials cost, and thanked Katie for bringing it to his attention.

The last behavior that can improve perspective taking is framing information so that it is easily understood by your teammate. This behavior may be the most difficult to perform, but also has the greatest potential for perspective taking. By using your teammate's own jargon and terminology and concepts that are important to him or her, you make it easier for your teammate to understand your situation. In the following example pay close attention to how Katie phrases her argument using the terms and concepts that Scott has been using:

VIDEO EXAMPLE FROM ABOVE WITH FRAMING

Did you see how Katie tried to use Scott's own terminology as she explained why she disagreed with his timeline? Also Katie tried to convey her understanding that timing was an important concept in Scott's mind. Do the behaviors make sense? Do you have any questions?

Now you will watch a full meeting in which our teammates are working through a complete task. Hopefully you will see instances when they fail to engage in the behaviors we have just discussed and the resulting misunderstandings. When our role players miss a perspective taking opportunity I will stop the tape I will ask each of you to tell me a perspective taking behavior that might be applicable during that interaction. I will then ask you to model for me what the role player should have said in order to demonstrate that perspective taking behavior you just described.

PLAY LOW PERSPECTIVE TAKING SCENARIO

[STOP VIDEO WHEN THE ROLE PLAYERS MISS A PERSPECTIVE TAKING OPPORTUNITY. ASK PARTICIPANS WHICH BEHAVIOR WOULD BE APPROPRIATE IN THAT SITUATION. ALTERNATE WHICH PARTICIPANT IS FIRST ASKED TO PROVIDE A PERSPECTIVE TAKING BEHAVIOR. ONCE THE FIRST PARTICIPANT GIVES A BEHAVIOR AND MODELS HOW IT COULD BE STATED, HAVE THE SECOND PARTICIPANT OFFER AN ALTERNATIVE PERSPECTIVE TAKING BEHAVIOR.]

SOME MISSED OPPORTUNITIES INCLUDE:
FRAMING/COMPLETE INFORMATION
COMPLETE INFORMATION
VALIDATING INFO
FRAMING/ROLE REVERSAL
DIRECT QUESTIONING
ROLE REVERSAL

[COLLECT CHEAT SHEETS]

****

[CONTROL CONDITION] The first thing you will do today is participate in a session during which you will watch a video and then discuss the facts presented in the video. After this session, you'll work together as a team on a group decision-making task.

Now you're going to watch a 30-minute video on Ireland. While watching the video, I'd like for each of you to create as complete a list as possible of the facts presented in the video.

After the video you'll be asked to share the facts that you listed, and to come up with questions or additional facts that could be addressed in the film to improve its completeness or make it more interesting.

[PARTICIPANTS WATCH VIDEO]

Now, please take a few minutes to complete your list, and to come up with any questions or additional facts that could be addressed in the film that would improve its completeness or make it more interesting.

[ALLOW 2-3 MINUTES FOR PARTICIPANTS TO COMPLETE LISTS.]

Now, I'd like to have you share the facts that you've listed, based on several categories. There are no right or wrong answers. I'm really just interested in knowing what facts you observed and how you think the film can be improved.

The first category is Geography. Please share the facts you observed that relate to the geography of Ireland.

Starting with __Participant A__, please share the first fact that you listed that relates to the geography of Ireland.

[CONTINUE WITH EACH PARTICIPANT SHARING ONE FACT AT A TIME UNTIL BOTH HAVE COMPLETED SHARING THEIR LISTS. MARK FACTS ON CHECKLIST AS THEY'RE SHARED. SHARE ANY ADDITIONAL FACTS NOT MENTIONED.]

The next category is History. Please share the facts you observed that relate to Ireland's history.

Starting with __Participant B__, please share the first fact that you listed that relates to the history of Ireland.

[CONTINUE WITH EACH PARTICIPANT SHARING ONE FACT AT A TIME UNTIL BOTH HAVE COMPLETED SHARING THEIR LISTS. MARK FACTS ON CHECKLIST AS THEY'RE SHARED. SHARE ANY ADDITIONAL FACTS NOT MENTIONED.]

The next category is Culture and Traditions. Please share the facts you observed that relate to Ireland's culture and their traditions.

Starting with __Participant A__, please share the first fact that you listed that relates to the culture and traditions of Ireland.

[CONTINUE WITH EACH PARTICIPANT SHARING ONE FACT AT A TIME UNTIL BOTH HAVE COMPLETED SHARING THEIR LISTS. MARK FACTS ON CHECKLIST AS THEY'RE SHARED. SHARE ANY ADDITIONAL FACTS NOT MENTIONED.]

The next category is Vacationing. Please share the facts you observed that relate to things that visitors to Ireland might be interested in, as well as what you think you'd be interested in if vacationing in Ireland.

Starting with __Participant B__, please share the first fact that you listed that relates to vacationing Ireland.

[CONTINUE WITH EACH PARTICIPANT SHARING ONE FACT AT A TIME UNTIL BOTH HAVE COMPLETED SHARING THEIR LISTS. MARK FACTS ON CHECKLIST AS THEY'RE SHARED. SHARE ANY ADDITIONAL FACTS NOT MENTIONED.]

Now, does anyone have any questions or additional facts that could be addressed in the video that would improve its completeness or that would make it more interesting?

[WRAP UP DISCUSSION; COLLECT MATERIALS]

****

[5-MINUTE BREAK] Before we continue with the rest of the session, I want to give you all a chance to take a quick break.

****

[HAVE PARTICIPANTS SIT AT THEIR DESKS]

Now, you're going to begin a team decision-making task. For this task, the two of you will simulate a company task force consisting of two vice presidents from two different departments of Porsche of America. Each of you will play the role of one of the vice presidents. The departments you'll represent are: Sales and Marketing. The two of you will meet in a little while to make decisions regarding Porsche of America. **[PASS OUT INFORMATION BINDERS AND ASSIGN ROLES; INDICATE ON COVER SHEET WHO IS IN WHAT ROLE]**

In order to prepare for this meeting, each of you will receive 2 pieces of background material to read. Both of these materials are inside the folder in front of you. The first piece of background information (on the white paper) will provide information that is common to both of you, and will explain the overall purpose of the task force and the decisions you will have to make. The second piece of background material (on colored paper) will provide you with role-specific information, and your individual positions on the issues facing the task force. **Your teammate will not have access to your information and you will not have access to theirs. There are actually four members of the task force. However, you will notice in your binder that there is a memo explaining that two of the members, the VP of Production and the VP of Research and Development will not be at the meeting. However, you have a summary of their role-specific information and positions on the issues. You two are to incorporate their information and positions into your decisions.** The last section contains diagrams and pictures that may help you understand the task and make decisions. Please do not write on these materials. Pens and paper are provided for you to take notes if you would like to.
[RESEARCHER: You can add here that the materials look longer than they actually are. They are separated out by issue so that it will be easier for them to locate the information that they may need later on during the meeting. Don't be afraid of the binder!]

Now you need to prepare for your meeting, which will start in about 20 minutes.

[ALLOW 20 MINUTES FOR PARTICIPANTS TO READ MATERIAL]

Does anyone have any questions about the material you just read? **[ANSWER QUESTIONS]**

I have one question about the task that you need to complete before beginning the meeting. **[COOPERATIVE/COMPETITIVE]**

Okay, now we'll set up the meeting room, so you will begin your task force meeting.

[MOVE TABLE ONTO TAPE ON FLOOR AND SET UP CHAIRS REFERENCE SHEETS AND BINDERS SO THAT SALES IS ON LEFT SIDE OF CAMERA SCREEN AND MARKETING IS ON THE RIGHT SIDE. ALSO PUT MICROPHONE IN CENTER OF TABLE, THEN GO MAKE SURE BOTH PARTICIPANTS ARE GOING TO BE CAPTURED ON THE SCREEN. MAKE SURE MICS ARE MUTED OR UNMUTED AS APPRPRIATE]

Here are pictures of the models that you will be discussing. As you read in your background material, the Porsche 911 Carrerra comes in 2 body styles – the Coupe (or hardtop) style **[PROVIDE PICTURE]** and the Cabriolet (or convertible) style **[PROVIDE PICTURE]**. Please feel free to refer to these whenever you need to.

Does anyone have any questions? **[ANSWER QUESTIONS]**

Remember that the President of Porsche-USA relies heavily on your recommendations, and you do not want to let him down by being unable to come to an agreement.

[FOR TRAINING CONDITION ONLY] Also, as you discuss these issues try to imagine how your teammate feels. Try to take his or her perspective in the meeting, imagining how he or she is thinking and feeling about what is happening. While you watch and listen to your teammate, picture yourself just how he or she feels.

You will want to be sure and use the behavioral skills we practiced earlier to better understand your partner and relay that understanding to them. When you complete the task I will assess how well you understand your teammate.

[FOR BOTH CONDITIONS] The team that makes the best overall decisions FOR THE COMPANY and is most accurate about their teammates' perspectives will have the opportunity to win 50 dollars each.

You may go ahead and begin your decision-making process. When you feel you are finished and have decided on final recommendations for all three issues, please let me know.

[IF THERE ARE NO MORE QUESTIONS START THE CAMERA RECODING AND HAVE TEAM BEGIN. TEAM IS ALLOWED A MAXIMUM OF 60 MINUTES TO COMPLETE THE TASK.]

****** 5-MINUTE WARNING AT 55 MINUTES******

IF TEAM COMPLETES TASK IN LESS THAN 60 MINUTES, RECORD TIME.

IF TEAM DOES NOT COMPLETE THE TASK WITHIN 60 MINUTES, STOP THE DISCUSSION AND INSTRUCT THEM TO WRITE DOWN THE SOLUTION THAT CURRENTLY EXISTS. FURTHER INSTRUCT THEM TO COMPLETE THE PERFORMANCE MEASURES WITH THIS SOLUTION IN MIND.]

****

[HAND OUT "FINAL RECOMMENDATION" FORM"]

I'd like for one of you to record your team's final recommendation on each of the three issues, as well as the rationale behind that recommendation.

[COLLECT FORM WHEN COMPLETE]

Now I am going to ask that you return to your desks for the remainder of the session. [**MOVE TABLE AND PORSCHE MATERIALS AWAY AND HAVE STUDENTS SIT AT DESKS]**

[HAND OUT "<u>DEPARTMENTAL</u>" EFFECTIVENESS, SATISFACTION, CONSENSUS FORM]

This next form is also one I'd like for you to complete individually. Again, please be sure to write your participant ID and which vice president you were during the role-play. Read the instructions for each item carefully, noting this time that you are to respond to the items with the best interests of <u>your department</u> in mind. Return the form to me when you've finished.

[COLLECT FORMS WHEN COMPLETE]

[HAND OUT "<u>COMPANY</u>" EFFECTIVENESS, SATISFACTION, CONSENSUS FORM]

This next form I'd like for you to complete individually. Please be sure to write your participant ID and which vice president you were during the role-play. Read the instructions for each item

carefully. Remember that although you each had some specific issues that you needed to address, the overall goal of the task force was to come to the best possible solution for the company. So, please respond to these items with the best interests of the company in mind. Return the form to me when you've finished.

[COLLECT FORMS WHEN COMPLETE]

[HAND OUT TEAM MEMBER SCHEMA MEASURE]

This survey requires you to think about the arguments that you and your teammate made during your discussion. Please read the instructions carefully and let me know if you have any questions about what you are supposed to do. When you have completed the entire survey, please return it to me.

[COLLECT FORMS WHEN COMPLETE]

[ATTRIBUTION SCALE] We are almost finished. Please read the instructions for this measure and complete the questions. If you are confused please ask for clarification. When you are finished I will collect it back.

[OPEN-ENDED ACCURACY] This measure asks you to answer some questions about your teammate's positions in the task you just completed. Answer them as accurately as you can. However, it is VERY IMPORTANT that try to use a professional tone, and be as specific as possible. When you are finished I will collect the measure.
[LOOK AT ANSWERS. IF NOTHING INFLAMATORY GIVE TO TEAMMATE TO RATE ACCURACY ALONG WITH SHEET 2]. You will now receive the answers your teammate just gave. On the second sheet I gave you please rate how accurate you feel your teammate's answers are. When you are finished I will collect both forms.

Please remember this was only a simulated task and your performance says nothing about you as an individual or as a team member.

[HAND OUT SHEET 3] Now please fill out this final sheet just as you did the first sheet, only fill it out with respect to your own positions on the task.

[COLLECT ALL THREE SHEETS AND STAPLE TOGETHER]

Now we are going to go back to the computers.

[Viability, PANAS (state), Empathy Scale, Barrett-Lennard Scale, Conflict]. Again, enter your Participant ID and then click continue. Please be sure to read all instructions and items carefully. When you've completed the entire survey, please sit back and wait for me.

[COOPERATIVE/COMPETITIVE, LIKING SCALE] Please fill out this sheet paying careful attention to the instructions.

[MANIPULATION CHECK] Please enter your Participant ID in the top left corner of the handout. Next match the specific behavior with the description of that behavior by placing the letter of the behavior in the blank next to the appropriate description. **[FOR TRAINING CONDITION ONLY]** You should recognize these behaviors as the ones I trained you on earlier in the session.

[SIGN RECEIPTS AND HAND OUT COPIES OF INFORMED CONSENT]

[GET NAMES , STUDENT ID'S, AND EMAILS]

[REMIND PARTICIPANTS NOT TO DISCUSS THE DETAILS OF THE STUDY WITH THEIR CLASSMATES]

Thank you again for your participation in this research project.

APPENDIX N

Informed Consent Form for Participation in this Study

CONSENT TO PARTICIPATE
DEPARTMENT OF MANAGEMENT
THE UNIVERSITY OF TENNESSEE

Managing Team Conflict though Perspective Taking

Introduction This is a research study to examine perspective taking and team process. This study will examine whether or not the ability to take another's perspective in a team task leads to improved team performance and satisfaction.

Activities You are invited to participate in a team decision making study. During the study, you will participate in teams of two in two multiparty decision making exercises. You will be completing a set of questionnaires designed to assess your perceptions of your teammate's perspective and of your team's processes and outcomes. Your team will be videotaped in order to allow for the coding and analysis of your team's interaction processes and behaviors. After the study is complete, all data and related information will be kept in a locked laboratory. Videotapes will be erased 3 months after the coded data have been analyzed. The study will require no more than 3 hours of your time.

Risks There are no known risks outside of those encountered in most team-based classroom exercises (i.e., debate, conflicting ideas, etc.)

Benefits This research may expand our understanding of how to improve performance in work teams. This may result in a more productive and less stressful work environment for employees working in team settings.

Confidentiality Any information about you obtained in this study will be kept strictly confidential and that you will not be identified in any report or publication. Data will be stored securely and will be made available only to persons conducting the study.

Compensation In exchange for my participation, you will receive [X] extra credit points toward your [COURSE NAME] grade. Credit will be earned upon completion of the study.

Freedom to withdraw Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed you data will be destroyed.

Investigator availability If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study,) you may contact the researcher (listed below). If you have questions about your rights as a participant, contact the Office of Research Compliance Officer at (865) 974-3466.

Shaun W. Davenport, M. A.	306 Temple Court	**Joan Rentsch, Ph.D.**	974-4843
Principal Investigator	974-1677	Faculty Advisor	

Consent I have read the above information. I have received a copy of this form. I agree to participate in this study.

_____ _____
Signed Date

_____ _____
Name (Please Print Neatly) Investigator Signature

VITA

Shaun Wesley (Wes) Davenport was born in Douglasville, Georgia, on November 30, 1977. He was raised in Huntsville, Alabama, along with his brother Jacob, by his parents Larry and Becky Davenport. He attended Grissom High School, and upon graduation in 1996, enrolled at Auburn University in Auburn, Alabama. He earned a B.A. in psychology with a minor in communications from Auburn University in 1999, graduating Summa Cum Laude distinction. After marrying his high school sweetheart, Mary Beth Chambers, in 2000, Wes and Mary Beth moved to Greenville, North Carolina where Wes earned a M.A. in clinical psychology in 2002. Upon completion of his master's degree, Wes accepted an offer to enroll in the industrial/organizational psychology doctoral program at the University of Tennessee in Knoxville, Tennessee. Wes and Mary Beth therefore relocated to Knoxville, where they lived from 2002 till 2008, and where their son Luke was born. Wes completed his doctorate in industrial/organizational psychology at the University of Tennessee in 2009, and is currently serving as an Assistant Professor, in the Phillips School of Business at High Point University, in High Point, North Carolina.