

TRAINING TEAM PERFORMANCE-RELATED ASSERTIVENESS

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The present paper extends the existing literature on assertiveness in a way that supports industrial training as well as the selection of individuals for team positions. Data are reported from three studies that examined determinants of team performance-related assertiveness. First, data from 149 college students demonstrated that assertiveness consists of multiple dimensions which were not all related to performance in a team decision-making task. Second, data obtained from 225 business students indicated that correlations among self-report measures and peer ratings of the same assertive responses assigned by intact team members varied according to the interpersonal context (i.e., personal, stranger, work related) in which scale items were framed. Third, data from 60 college students suggested that team performance-related assertiveness has a significant skill component. Whereas both attitudinally focused and skill-based training improved *attitudes* toward team member assertiveness, practice and feedback were essential to producing *behavioral* effects. Implications for selection and team training are discussed.

Organizations today increasingly require employees to interact and coordinate with their coworkers, as evidenced by the proliferation of task forces, quality circles, and autonomous work groups. This trend toward participative decision making is partially in response to the realization that lower level employees often have access to valuable information of which superiors are unaware (Bruning & Liverpool, 1993). Although there is great hope that this trend toward empowerment, coordination, and collaboration at work will enhance our competitiveness in the global

The views expressed herein are those of the authors and not necessarily those of the organizations with which they are affiliated. The authors would like to acknowledge Barbara Blume and Conrado Marion-Landais for their help in data collection, Janis Cannon-Bowers, Florian Jentsch, and three anonymous reviewers for their comments on earlier versions of this manuscript.

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marketplace, a significant number of programs designed to facilitate participative decision making fail each year. For example, Marks, Mirvis, Hackett, and Grady (1986) reported that quality circles have been unsuccessful in 60% of the organizations that have implemented them. This may be due in part to the fact that participative decision-making programs often change the nature of a job significantly, requiring problem solving and communication skills that were not included in the selection criteria when incumbents were hired. Some jobs may have previously required little formal communication with individuals outside a functional specialty (e.g., engineers), while other jobs may have involved no formal communication at all (e.g., factory workers).

A number of team knowledge requirements, skills, and attitudes have been linked to effective team performance and decision making (Cannon-Bowers, Tannenbaum, Salas, & Volpe, 1995). Many of these "team competencies" (Cannon-Bowers et al.) appear to resemble personality traits that have been studied extensively in other literatures. However, the manner in which such constructs will manifest themselves in the context of work team dynamics is often unclear from this research. One such construct is team member assertiveness.

Team Performance-Related Assertiveness

The success of a participative decision-making strategy requires that lower-level employees be both *willing* and *able* to communicate their opinions in a manner that will be persuasive to others. Team member assertiveness helps to ensure that each individual's unique knowledge, skills, ideas, and observations are recognized as resources that are available to a team. This involves a range of behaviors including: providing performance feedback to a team member, addressing perceived ambiguities and potential problems, stating and maintaining opinions, offering potential solutions, initiating action, and offering and requesting assistance or backup when needed.

It has been demonstrated that in certain environments (e.g., nuclear power plant accident management, air crews, emergency medical teams) team member assertiveness can make the difference between life and death. The U.S. National Transportation Safety Board has noted on repeated occasions that the loss of life and craft may have been prevented had subordinate air crew members chosen to voice their concerns, or had done so in a more direct and persistent manner. For example in 1982, an aircraft, experiencing difficulty taking off in a snowstorm in Washington D.C., failed to maintain an adequate rate of climb and crashed into the 14th Street bridge. Analysis of the cockpit voice recording revealed that the co-pilot made a number of indirect comments that indicated that he

suspected a problem. He failed, however, to express his concerns in an assertive manner that might have been attended to by the crew (Foushee, 1984).

A number of researchers who have studied similar well publicized team errors argue that team member assertiveness is crucial to effective team decision making (e.g., Cannon-Bowers, Salas, & Grossman, 1991; Oser, McCallum, Salas, & Morgan, 1989; Prince & Salas, 1993). This has prompted organizations to become interested in exploring selection, training, and environmental mechanisms that will enhance team performance-related assertiveness in their workforce. However, we argue that generalizability from the existing assertiveness research to an industrial setting is limited by three factors. Previous studies have typically: (a) employed participants who were recruited from a clinical population, (b) limited their criterion measures to the refusal of unreasonable requests, and (c) evaluated behavior in the context of stranger or personal interaction.

This paper reports findings from three studies that examined the determinants of assertiveness in the context of task-related team member interaction, used a non-clinical population, and employed criterion measures that were based on a set of assertive behaviors that have been linked to effective team performance. The results from this line of research have implications for both industrial assertiveness training as well as the selection of employees for work team positions.

Industrial Assertiveness Training

Industrial assertiveness training is on the rise in a wide range of settings from hospitals to automobile factories (Ruben & Ruben, 1989). Such training generally involves a brief one-shot training seminar that takes one of two approaches. The first approach attempts to change attitudes with the presumption that behavior change will follow (Helmreich, 1984, 1987; Helmreich, Foushee, Benson, & Russini, 1986). This approach stems from the belief that nonassertiveness in the workplace is more a function of "status-typed expectations" than a lack of interpersonal skill (Driskell & Salas, 1991). Organizations that take this view typically make use of charismatic lecturers and organizational propaganda, promoting the concept of assertiveness much like a salesman would (Ruben & Ruben, 1989). In contrast, other organizations take a second, more skill-based approach that emphasizes the active practice of specific task-related assertive behaviors in role-plays and/or simulation exercises followed by individualized performance feedback (e.g., Prince

& Salas, 1993). The differences between the two approaches to industrial assertiveness training are reflected in the selection of validation criteria as well as training techniques, with validation of most programs being limited to reported attitude change (Hartel & Hartel, 1995).

It has been argued previously that "attempts to change [work-related] behavior by means of verbal persuasion and logical explanations rarely succeed" (Goldstein & Sorcher, 1974, p.5). However, no data exist as to the relative efficacy of attitudinally focused versus practice-based approaches for enhancing the specific assertive behaviors that have been linked to improved decision making in a team context. We have argued that three factors limit the generalizability of results from existing assertiveness training studies. Each of these are described as follows.

First, most studies have used either participants from a clinical population (e.g., battered wives, schizophrenics, or clinically depressed patients; Ruben & Ruben, 1989), or have recruited and selected participants on the basis of their self-reported nonassertiveness (e.g., Kolotkin, 1980). It has been suggested that the primary causes of nonassertiveness in a typical work team setting may be quite different from those observed in clinical populations (Driskell & Salas, 1991). This in turn may necessitate different training approaches. For example, cognitive approaches have been recommended as being effective for individuals whose nonassertiveness can be attributed to an external locus of control (Emmons, Richardson, & Frost, 1981) or negative self-thoughts (Glass, Gottman, & Schmurak, 1976). This type of intervention may not, however, have an impact on an individual whose nonassertiveness in a team setting is a function of status-typed expectations or underdeveloped communication skills. For such individuals, behavior role-modeling is more likely to be effective; particularly if it depicts positive organizational outcomes associated with assertion.

A second factor limiting the generalizability of previous assertiveness research is that the criterion measures employed in previous studies have focused almost solely on one type of assertive behavior; the refusal of unreasonable requests. An example would be to operationalize training generalization as participants' ability and willingness to refuse a confederate salesperson soliciting magazine subscriptions outside the experimental site (e.g., Baldwin, 1992). A fair amount of evidence suggests that assertiveness consists of multiple response classes that are partially independent; refusal behavior is only one of them (Lorr & More, 1980; Lorr, More, & Mansueto, 1981; Skatsche, & Kien, 1989). Thus, it has been argued that the ability and willingness to "just say no" may not transfer to other assertive acts such as stating and maintaining an unpopular opinion (Lorr & More, 1980). This may be due in part to

differences in the complexity of various assertive responses. For example, refusal behavior requires a relatively simple response (e.g., "just say no" to drugs). However, it is the *willingness* to refuse, and to accept the consequences that may be difficult. Thus, the primary determinants of refusal behavior may be self-esteem, or situation-specific motivation related to expected reinforcement. Given this, the critical mechanism by which training increases refusal behavior may be attitude change.

In contrast, effective use of team performance-related assertiveness requires one to consider a multitude of complex cues, both internal and external to a team, and to determine when and how to state a particular concern so that team members will understand its significance and give it adequate consideration. This requires a delicate balance between being clear and direct without putting others on the defensive. A perfectly valid point will often be ignored or not taken seriously if it is stated ambiguously or in the form of a question. On the other hand, the same input will be resisted if it is seen as sarcastic, domineering, or accusatory. Thus, in our view, team performance-related assertiveness requires much more than a willingness to speak up in the face of potential opposition. The ability to apply assertiveness toward the attainment of work-related team goals involves a crucial skill component. Therefore, team performance-related assertiveness may be relatively independent from other components of assertiveness (i.e., refusal behavior) which require a simpler response.

A third factor limiting the generalizability of previous assertiveness research is that these studies have not evaluated behavior in the context of task-related team member interaction. Leah, Law, and Snyder (1979) found that interpersonal context had a significant impact on the difficulty participants reported for various assertive response (e.g., stating and maintaining opinions). In this regard, Kolotkin (1980) delineated three types of interpersonal interaction: (a) non task-related interactions with strangers (e.g., salespeople), (b) work-related interactions in which the goals of an organization or team take precedence over individual goals, and (c) intimate relationships where mutual exchange and intimacy are the goal (e.g., friendship, marriage).

Kolotkin (1980) failed to find support for his hypothesis that assertiveness is easiest with strangers, more difficult with co-workers, and most difficult with those whom one has a personal relationship. However, it may be that contextual effects due to type of interaction are particular to an individual. In other words, although an individual may have a somewhat stable tendency toward using assertiveness in his/her personal interactions, or interactions with strangers, this may not necessarily be predictive of his/her habit of doing so in task-related team interactions at work. Situation-specific use of assertive behaviors may be

to an individual's personal belief that it is more or less appropriate to use assertiveness with friends, strangers, or coworkers. Thus, inferring team performance-related assertiveness from observations of relevant behavior towards a confederate salesman, or self-reported tendencies with friends and family may be inappropriate. Unfortunately, measures of assertiveness have typically ignored contextual contributions to response performance, with the majority of scale items either not specifying context or describing primarily stranger and personal interactions (e.g., Lorr & More, 1980; Rathus, 1973).

Experimental Propositions

Given what has been presented thus far, we sought to extend the existing literature on assertiveness in a way that supports industrial training, as well as the selection of individuals for work team positions. We did so by addressing some of the shortcomings noted above. As such, results are reported from three studies which examined the following propositions regarding team performance-related assertiveness:

Proposition 1: Assertiveness consists of multiple response classes which are not all related to the specific behaviors associated with team performance-related assertiveness.

Proposition 2: Interpersonal context (i.e., personal, stranger, work-related) has a significant impact on individuals' use of the same assertive responses.

Proposition 3: Team performance-related assertiveness has an essential skill component in addition to an attitudinal component.

Study 1: Relationships Between Assertive Response Classes

Study 1 was designed to examine our first proposition; that assertiveness consists of multiple response classes that are not all related to the specific behaviors associated with team performance-related assertiveness. Multiple factor analyses of self-report items have suggested that assertiveness consists of four relatively independent response classes: defense of interests, social assertiveness, independence, and directiveness (Lorr & More, 1980; Lorr et al., 1981; Skatsche & Kien, 1989). However, the relationships between these subscales and behavioral measures have yet to be explored. Assertive behaviors falling under *defense of interests* include refusing unreasonable requests, and standing up for ones' rights. *Social assertiveness*, on the other hand, involves behaviors associated with initiating and maintaining social relationships. *Independence* includes stating opinions and resisting individual or group pressure to

conform. Finally, *directiveness* involves taking responsibility and initiating action.

In order to investigate our first proposition, Study 1 compared relationships between self-report measures of Lorr and More's (1980) four dimensions of assertiveness and behavioral ratings of performance-related assertiveness in a team decision-making task. It was hypothesized that the *directiveness* and *independence* subscales would be more strongly related to assertive performance in the team task than the *defense of interests* and *social assertiveness* subscales.

Study 1 Method

Participants

Participants were 62 male and 87 female undergraduate psychology students recruited from junior and senior level courses at a large southeastern university. Experimental credit was given in exchange for participation in the study.

Procedure

Participants completed an assertiveness inventory in class approximately 1 week before participating in a team decision-making task. The connection between these two events was concealed until after the experiment. Each participant's team performance-related assertiveness was evaluated during a 15 minute team decision-making task. The task involved a personal computer based flight simulation, GUNSHIP (Hollis, Tavares, & Meier, 1986). GUNSHIP has been used by a number of other researchers both to train and evaluate teamwork skills (Bowers, Salas, Prince, & Brannick, 1992). The task has a number of benefits. First, computer simulation is generally found to be interesting to participants and therefore can elicit high subject involvement. This presumably leads to higher quality data in a laboratory experiment. Second, interactive computer simulation allows for a high degree of control over decision-making conflicts. Third, the simulation can be set up so that successful accomplishment of the mission necessitates coordination and communication between teammates.

Participants were randomly assigned to perform the team task with either a male or a female confederate teammate. Each participant was assigned the role of "co-pilot" and each time a confederate was assigned the role of "captain." The simulated mission required participants to coordinate with the confederate to make a number of decisions. The confederate teammate followed a structured outline that provided each

subject with an equal opportunity and need to exhibit the specific set of team performance-related assertive behaviors described earlier. Five conflict situations were embedded in the task. The confederate: (a) attempted to keep materials from the participant that were necessary for him/her to perform one of his/her tasks, (b) made a blatant error, (c) attempted to persuade the participant to take action that contradicted the instructions given to him/her, (d) physically interfered with the participants' ability to perform one of his/her tasks, and (e) remained indecisive regarding a critical decision.

All participants received audio-taped instructions on the mission requirements and were given a premission questionnaire to ensure comprehension. Incorrect responses were corrected by the experimenter and explained to the participant prior to beginning the simulation. This procedure was employed to guard against potential misunderstandings of the task, and to ensure that participants perceived the five conflict situations as being conflicts (i.e., the confederate's actions directly contradicted the instructions given).

Participants were given a brief practice session to become acquainted with the simulation. The confederate also participated in the practice session of the simulation task. Participants were instructed that they would be free to leave as soon as the task had been completed successfully. Otherwise, they were told that the simulation would be restarted if their team failed to follow all of the instructions, or if the team ran out of gas before completing their mission. These procedures were employed in order to enhance participant motivation for performing the task successfully. All participants were videotaped performing the simulation. Participants were debriefed following the team task.

Measures

Lorr and More Assertiveness Inventory. Participants completed a modified version of an assertiveness inventory developed by Lorr and More (1980). The 32 items used in this study demonstrated the highest factor loadings under the four response classes: defense of interests (e.g., When a friend borrows something of value to me and returns it damaged I don't say anything.), social assertiveness (e.g., I find it easy to talk with all kinds of people.), independence (e.g., I nearly always argue for my viewpoint if I think I am right.), and directiveness (e.g., In an emergency I get people organized and take charge.) Reducing the scale to the best 32 items covering the four subscales shortened the time required to complete the inventory by 50%. Participants responded to each item on a 6-point Likert scale according to how characteristic a behavioral response was of them.

Behavioral ratings. Participants' were assigned a rating of team performance-related assertiveness (1-5) by condition-blind raters who viewed their videotaped performance in the team decision-making task. Raters were trained to identify examples of excellent, average, and poor use of the targeted team performance-related assertive behaviors using five scripted conflict situations as a frame of reference, and were experienced with the task itself. The first conflict required participants to let the confederate know that his/her actions were making it difficult for the participant to complete his/her own tasks (*providing performance feedback to a team member*). The second conflict required participants to confront the fact that the confederate had made an incorrect turn, and to get him/her to turn back on course (*addressing perceived ambiguities and potential problems, offering backup or assistance when needed*). The third conflict required participants to resist pressure from the confederate to take action which contradicted the instructions given (*stating and maintaining opinions*). The fourth conflict again required participants to let the confederate know that his/her actions were making it difficult for the participant to complete his/her own tasks (*providing performance feedback to a team member*). The fifth conflict required participants to generate potential solutions to a decision-making problem, solicit input from their indecisive confederate teammate, and finally take responsibility for making the decision (*offering potential solutions, requesting assistance or backup when needed, initiating action*).

At times participants clearly became distracted by some aspect of the task and therefore missed one of the conflicts. In addition, participants often demonstrated relevant behaviors at other times during the team task. Thus, raters were instructed to take all relevant observations throughout the 15 minute team task into account and to assign overall ratings of team performance-related assertiveness.

These same overall ratings were obtained for a total of 209 participants who performed the identical team task in Studies 1 and 3. An estimate of interrater reliability was computed using Pearson's product-moment correlation for a subset of 60 participants who were rated by two raters. Results indicated that the two ratings were reasonably consistent ($r = .90$). The remaining participants were rated by only one of the raters.

Study 1 Results

Correlations between the four subscales of the Lorr and More (1980) assertiveness inventory and ratings of performance-related assertiveness

TABLE 1
Correlations Between Measures of Assertiveness—Study 1

	<i>M</i>	<i>SD</i>	1	2	3	4
1. Defense of interests	4.54	.71	(.67)			
2. Social assertiveness	4.20	1.25	.21**	(.82)		
3. Independence	4.47	.67	.46**	.23**	(.74)	
4. Directiveness	4.13	.76	.33**	.50**	.47**	(.81)
5. Ratings of team performance-related assertiveness	2.88	1.25	.07	.005	.23**	.26**

Note: $n = 149$; * $p < .05$; ** $p < .01$.

in the team decision-making task are shown in Table 1. Participants' responses to both the directiveness and independence subscales were significantly related to behavioral ratings of team performance-related assertiveness, while the defense of interests and social assertiveness subscales were not.

As predicted, behavioral ratings were more strongly correlated with scores on the directiveness subscale than scores on the social assertiveness subscale ($z = 3.33, p < .01$), and the defense of interests subscale ($z = 2.50, p < .01$). Similarly, behavioral ratings were more strongly correlated with scores on the independence subscale than scores on the social assertiveness subscale ($z = 2.92, p < .01$), as well as the defense of interests subscale ($z = 2.09, p < .05$).

In order to examine whether both independence and directiveness accounted for unique variance in performance, a stepwise multiple regression analysis was conducted. Results indicated that, when entered together, only the directiveness subscale accounted for a significant amount of unique variance in performance, $F(1,147) = 7.75, p < .01$. A subsequent analysis was performed in order to explore the possible effects of participant gender, gender of the confederate teammate, and their interaction using directiveness as covariate. Adjusted group means and standard deviations can be found in Table 2.

Results of a two-way analysis of covariance (ANCOVA) indicated significant effects for the covariate, directiveness $F(1,144) = 4.67, p < .05$ as well as main effects for gender of the participant $F(1,144) = 4.59, p < .05$, and gender of the confederate teammate $F(1,144) = 3.96, p < .05$. However, the interaction between gender of the participant and gender of the confederate teammate was not significant. Thus, males, on average, exhibited more assertiveness than females, and all participants demonstrated more assertiveness toward a female teammate.

TABLE 2
*Group Means and Standard Deviations
 Adjusted for Directiveness—Study 1*

	Male confederate		Female confederate		Overall	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Male participants	3.00	1.26	3.53	1.24	3.26	1.27
Female participants	2.68	1.07	2.98	1.23	2.83	1.23
Overall	2.84	1.17	3.25	1.26		

Summary of Study 1 Findings

As hypothesized, Study 1 found that self-report measures of Lorr and More's (1980) subscales for directiveness and independence were significantly better predictors of team performance-related assertiveness than were subscales associated with defense of interests, and social assertiveness. In fact, the latter two subscales were not significantly correlated with assertive performance in the team task. These results provided some support for our first proposition: That not all assertive response classes are related to team performance-related assertiveness. In particular, it appears that the tendencies toward refusing unreasonable requests and initiating social interaction may be unrelated to the use of assertive behaviors that have previously been linked to effective team decision making.

In addition, Study 1 found that males exhibited more assertiveness, on average, than females in the decision-making task. Consistent with this finding, previous research has demonstrated a tendency for males to be more assertive than females at as early as 2 years of age (Fagot, Hagan, Leinbach, & Kronsberg, 1985). This may be explained by the fact that parents, teachers, and peers tend to respond more favorably to assertive behavior in boys than in girls (Fagot & Hagan, 1985; Fagot, et al.; Kerig, Cowan, & Cowan, 1993). Years of this type of socialization are likely to result in gender-specific attitudes towards the appropriateness of assertive behavior in the workplace. For example, Geller and Hobfoll (1993) found that males viewed females who demonstrated assertiveness in videotaped workplace vignettes more negatively than males in the videotape, and reported less intention to offer them support. Such societal attitudes are likely to discourage assertive performance in female team members in the workplace.

Our second gender-related finding, that both males and females responded more assertively toward a female teammate, suggests that individuals apply assertiveness on a situation-specific basis. A number of previous studies have found that gender of the receiver is a contextual

variable that affects individuals' use of assertiveness. However, these studies have tended to show greater assertiveness towards others of an individual's own sex in general, as well as more negative reactions to assertive messages between opposite sex dyads than between same sex dyads (Stebbins, Kelly, Tolor, & Power, 1977; Wilson & Gallois, 1985). In contrast, our data did not indicate an interaction between gender of the participant and gender of the confederate teammate.

Finally, there are data to suggest that interpersonal context has an impact on the type of gender effects observed. Mathison and Tucker (1982) found that males reported a greater willingness to use assertiveness in public situations (e.g., question publicly a person of higher status) than females, whereas females reported a greater willingness to use assertiveness in private interpersonal settings than males. This may explain the gender effects in the present study due to the context in which behavior was evaluated (i.e., team task situation).

Study 2: Effects of Situational Context on Assertive Behavior

Study 2 examined our second proposition; that interpersonal context (i.e., personal, stranger, work-related) has a significant impact on individuals' use of the same assertive responses. In other words, although people may have a relatively stable tendency toward stating and maintaining opinions when interacting with friends or strangers, this may not necessarily reflect the likelihood that they will do so in a work team situation. Recently Schmit, Ryan, Stierwalt, and Powell (1995) found support for such context-dependent behavior patterns or *conditional dispositions* (Wright & Mischel, 1987) related to conscientiousness. Schmit et al. found that a conscientiousness scale predicted school performance better when each item was modified to specify "at school." A similar phenomenon may describe the use of behaviors within assertive response classes.

Study 2 investigated the effects of item context on the correlations among three self-report measures and peer ratings assigned by intact team members. Building on the results from Study 1, three self-report measures were chosen that included items requiring response types consistent with directiveness and independence. Two of these measures have been used extensively in previous research (i.e., Lorr & More, 1980; Rathus, 1973). However, these measures contain items that either do not specify context or depict interactions with strangers or within personal relationships. On the other hand, a third scale, the Team Task Assertiveness Scale (TTAS; Smith, Marion-Landais, & Blume, 1993), was developed specifically to address assertiveness during work team-related

interaction. It was hypothesized that peer ratings of team performance-related assertiveness would be more strongly related to scores on the TTAS than the remaining two scales due to specification of appropriate context in the TTAS items.

Study 2 Method

Participants

Three hundred-fifty two business students from a large southeastern university were recruited from classes that required them to participate in a semester-long team project in teams of 3 to 6 students. Data were collected from two samples of students. Sample 1 consisted of 130 participants. Sample 2 consisted of 222 participants. Approximately 22% of these data came from three-person teams; 41% from four-person teams; 33% from five-person teams; and 4% from six-person teams. All measures were collected from participants in class at the end of a 4-month semester.

Procedure

Participants in Sample 1 completed the defense of interests, directiveness, and independence subscales of the Lorr and More assertiveness inventory (Lorr & More, 1980), the TTAS (Smith et al., 1993), and assigned peer ratings of team performance-related assertiveness to each of their teammates based on observations of them over the course of the team project (approximately 4 months). The procedure for participants in Sample 2 was identical to that of Sample 1 except for the fact that these participants completed the Rathus Assertiveness Schedule (Rathus, 1973) in place of the Lorr and More subscales. This was done in order to examine whether the same pattern of context effects would be demonstrated across two existing assertiveness scales.

Measures

Lorr and More Assertiveness Inventory. Participants completed the defense of interests, independence, and directiveness subscales of the assertiveness inventory used in Study 1. In the interest of reducing administration time, the social assertiveness subscale was not included in this study. This subscale as well as the defense of interest subscale were found to be unrelated to team performance-related assertiveness in Study 1. However, since the criterion measures used in many existing

assertiveness training studies focused on refusal behavior, the defense of interests subscale was also included in Study 2.

Team-Task Assertiveness Scale (TTAS). The TTAS consists of nine items that correspond to five short vignettes depicting intrateam conflict situations (Smith et al., 1993). For each item, individuals were asked to indicate on a 6-point Likert scale how likely they would be to respond to each vignette in a particular fashion.

For example, "Your team members have been allowed to self-select their respective (interdependent) tasks. You notice that one member is struggling and you believe he/she seems better suited for one of the other tasks. How likely would you be to discuss the issue with this particular team member?"

Rathus Assertiveness Schedule. The Rathus Assertiveness Schedule consists of 30 items in a Likert format (Rathus, 1973). As with the Lorr and More (1980) inventory, assertive responses are depicted in the context of personal and stranger interaction, or the context is not specified. For example, "I am careful to avoid hurting other peoples' feelings, even when I feel that I have been injured" (reverse coded).

Peer ratings of team performance-related assertiveness. Participants assigned a rating from 1-6 for each of their teammates based on the following definition of team performance-related assertiveness:

The ability and willingness to ensure that ones' unique knowledge, skills, ideas, and observations are recognized as resources that are available when needed, to assume responsibility for team processes when appropriate, and to initiate action in the interest of meeting task-related team goals. This involves providing performance feedback to team members, addressing perceived ambiguities and potential problems, stating and maintaining opinions, offering potential solutions, initiating action, offering and requesting assistance or backup when needed.

Participants were explicitly instructed to base their ratings on observations of their teammates in the context of task-related interaction directed toward the completion of their team project throughout the semester and not on any personal knowledge of them.

Study 2 Results

The peer ratings assigned by any individual who did not discriminate among teammates in his or her ratings (i.e., assigned identical ratings to each team member) were discarded. Only cases with at least two usable peer ratings were included in the analyses. Of the initial 352 cases, 225 met this criteria.

TABLE 3
Correlations Between Assertiveness Measures—Study 2.

Sample 1

	<i>M</i>	<i>SD</i>	1	2	3	4
1. TTAS	5.05	.53	(.67)			
2. Defense of interests	4.78	.62	.32**	(.62)		
3. Independence	4.28	.66	.33**	.31**	(.68)	
4. Directiveness	4.43	.78	.63**	.34**	.27**	(.78)
5. Peer ratings of team performance-related assertiveness	4.78	.88	.21*	.02	.09	.06

Note: $n=99$; * $p<.05$; ** $p<.01$

Sample 2

	<i>M</i>	<i>SD</i>	TTAS	Rathus
1. TTAS	5.01	.63	(.73)	
2. Rathus	3.98	.60	.38**	(.77)
3. Peer ratings of team performance-related assertiveness	4.43	1.02	.23*	.02

Note: $n=126$; * $p<.05$; ** $p<.01$

In order to estimate interrater reliability for the peer ratings, teammates were treated as perfect replicates and correlations between peer ratings were computed separately for the two-teammate rating, three-teammate rating and four-teammate rating groups. The resulting correlation coefficients were then submitted to an r -to- z transformation and averaged within each group. The average correlation for the two-rating group was .53, for the three-rating group .46, and for the four rating group was .56. A correlation for the five-rating group was not computed due to the small sample size.

The intercorrelations between measures collected from Sample 1 are shown in Table 3. The TTAS was significantly correlated with the defense of interests, directiveness, and independence subscales of the Lorr and More (1980) inventory as well as with peer ratings of team performance-related assertiveness. Four percent of the variance in peer ratings could be accounted for by the TTAS. However, none of the Lorr and More subscales were significantly correlated with peer ratings. The validity coefficient for the TTAS was significantly larger than that of the defense of interests subscale ($z = 1.89, p < .05$). More importantly, the validity coefficient for the TTAS was more than twice as large as that of the directiveness and independence subscales, although these scales measured the same behavioral response types. These differences,

however, did not reach statistical significance ($z = 1.50, p = .06; z = 1.21, p < .11$ one-tailed).

The intercorrelations between measures collected from Sample 2 are shown in Table 3. The pattern of results for this sample was identical to that observed in the first sample. Again, the TTAS was significantly correlated with the Rathus assertiveness schedule and peer ratings of team performance-related assertiveness. The TTAS accounted for 5% of the variance in peer ratings for Sample 2. The Rathus, however, was not significantly correlated with peer ratings. Results indicated that the validity coefficient for the TTAS was significantly larger than that for the Rathus, $z = 2.37, p < .05$.

Summary of Study 2 Findings

The pattern of results from Study 2 provided some support for our second proposition; that interpersonal context (i.e., personal, stranger, workrelated) has an impact on individuals' use of the same assertive responses. Peer ratings of team performance-related assertiveness were more strongly related to an assertiveness scale that contained items tapping directiveness and independence in a work team setting than two scales that tapped the same type of behaviors but were not framed in a work team setting.

In contrast to the ratings obtained in Study 1, the peer ratings used in Study 2 were only moderately consistent. This may be due to a number of factors. First, team members were not trained as raters. Second, ratings were based on observations during many team interactions over the course of a semester rather than on one team interaction in a controlled environment. Third, various dyads within a team were likely to have different types of interaction with one another. Thus, multiple peer raters may have made different, yet equally valid, observations of the same team member.

The fact that Study 2 teams were of mixed gender may have contributed to such differences in peer raters' observations. It was found in Study 1 that both males and females demonstrated greater performance-related assertiveness toward a female teammate. Such variance in peer ratings accounted for by gender of the rater could not be examined in Study 2 given issues of confidentiality (i.e., identity of peer raters was not provided). In sum, although peer ratings were not highly consistent, average peer ratings may have indicated a broader portrait of typical behavior. A similar argument has been made by others in regards to low correlations between supervisory and peer ratings of on-the-job performance (e.g., Borman, 1974).

Together, results from Studies 1 and 2 supported our argument that generalization from previous assertiveness research to an industrial setting may be limited. Specifically, criterion measures that evaluated refusal behavior in contexts other than task-related team member interaction may be relatively independent from team performance-related assertiveness.

These findings pointed toward specific assertive response types and context-dependent attitudes that should be targeted by selection tests and industrial training programs. Study 3 built on these findings by comparing attitudinally focused and practice-based approaches to training team performance-related assertiveness.

Study 3: Training Team Performance-Related Assertiveness

Existing literature clearly indicates that practice and feedback are key components of behavioral skill development and transfer for a wide range of constructs (Decker & Nathan, 1985). Thus, if team performance related assertiveness has a crucial skill component, then training that includes active practice and feedback should have a greater impact on behavior than attitudinally focused approaches. Moreover, these enhanced behavioral training effects should not be explained by more positive attitudes toward team performance-related assertiveness.

In order to investigate our third proposition, which is described above, a third study was conducted. This study compared the effects of three 1-hour training interventions: (a) information and encouragement via lecture, (b) information and encouragement via lecture and demonstration of effective and ineffective models, and (c) some information and encouragement with an emphasis on practice and performance feedback (i.e., a traditional behavior role-modeling format).

It was hypothesized that each of the three training formats would have a similar positive impact on post-training attitudes. However, it was expected that active practice and performance feedback would be crucial for producing behavioral change. Therefore, practice-based training was hypothesized to produce more effective team performance-related assertive behavior than the two attitudinally focused training formats.

Study 3 Method

Participants

Sixty male undergraduate psychology students were recruited from junior and senior level courses at a large southeastern university. Participants' age ranged from 19 to 35, with the majority of participants being 21–22 years of age.

Training Conditions

Behavior role modeling. Trainees in the behavior role modeling condition received a 10-minute lecture that presented information about team performance-related assertiveness, persuasive arguments, and encouragement for using this strategy in team environments. Next, trainees viewed three videotaped scenes depicting conflict situations that may arise in a work team environment and that may necessitate the specific set of team performance-related assertive behaviors described earlier in this manuscript. For each of the three scenes described above trainees: (a) viewed behavioral models demonstrating passive and aggressive responses to the conflict, (b) practiced responding assertively to the situation in their own words during a role play with a facilitator, (c) received feedback from the experimenter/trainer based on a list of criteria established for each scene, and finally (d) viewed the behavioral model demonstrating an example of an assertive response to the scene.

Lecture with demonstration. Trainees in the lecture with demonstration condition received the same 10-minute lecture described for the behavior role modeling condition. Next, trainees viewed the same behavioral models responding aggressively, passively, and then assertively to each of the three team conflict situations. Before and after each scene, the trainer reviewed relevant learning points from the lecture with the trainees, including the consequences of each approach (i.e., passive, aggressive, assertive) to both individual and team goals.

Lecture-based training. Trainees in the lecture-based condition received a 1-hour lecture that was an expanded version of the lecture received by the other two training conditions. Passive, aggressive, and assertive communication styles were discussed using the three team conflict situations that were depicted in the demonstration video as examples. The consequences of each approach to individual and team goals were discussed with the trainees.

Measures

Lorr and More Assertiveness Inventory. Participants completed the defense of interests, independence, and directiveness subscales of the Lorr and More (1980) assertiveness inventory. In the interest of reducing administration time, the social assertiveness subscale was not included in this study. This subscale, as well as the defense of interest subscale, was found to be unrelated to team performance-related assertiveness in Study 1. However, since the criterion measures used in many existing assertiveness training studies focused on refusal behavior, the defense of interests subscale was also included in Study 3.

Attitude measure. In order to assess post-training attitudes regarding performance-related assertiveness in a team context, a 6-item attitude scale was developed. This attitude scale was derived from six items on the Cockpit Management Attitudes Questionnaire (Gregorich, Helmreich, & Wilhelm, 1990) that specifically related to assertiveness in the cockpit. The items were reworded for this study so that they referred to teams in general rather than aircrews specifically. Attitudes reflected by the six items were relevant to directiveness and independence as defined by Lorr and More (1980; e.g., "It is important to avoid making negative comments about the procedures and techniques of other team members," reverse coded). Participants were asked to indicate on a 6-point Likert scale how strongly they agreed/disagreed with each of the items.

Behavioral ratings. The procedure for obtaining behavioral ratings in Study 3 was identical to that employed in Study 1. The 60 participants from Study 3 were rated by two condition-blind raters. The average of these ratings served as the criterion measure for all analyses involving behavioral ratings in this study.

Procedure

Participants were recruited to take part in what they were led to believe were two unrelated experiments; one involving assertiveness training and the other involving a PC-based flight simulation. Due to potential interactions between training gender, and gender of the confederate, only males were recruited in this investigation (i.e., male participants were required to interact with a male confederate).

Upon arrival at the experimental session, participants completed the defense of interests, directiveness, and independence subscales of the Lorr and More (1980) inventory, and were randomly assigned to one of four experimental conditions: (a) lecture only, (b) lecture and demonstration, (c) behavior role modeling (i.e., some lecture and demonstration with an emphasis on practice and performance feedback), or (d) no treatment control group. The procedure for the first portion of the study (which participants were led to believe was the first of two experiments) was as follows. Participants in the training conditions received 1 hour of training individually. Control participants completed a list of lecture related questions to the best of their ability. A general debriefing was given to all participants after they completed the first portion of the study. This was done to add credibility to our claim that the training was separate from the simulation experiment.

The procedure for the remainder of the study was the same for all participants. Participants were taken to another location in the same

building to participate in the identical team task that was described in Study 1. The only difference was that in Study 3 all participants performed the task with a male confederate. In addition, following their practice run, participants rated their perceived ability to perform the technical tasks that the simulation required of them, using a 5-point scale. This measure of simulator skill was collected as a potential covariate. The confederate did not participate in the assertiveness training session with the participants. Participants were led to believe that the confederate had only agreed to participate in the second of the two studies.

Following the team task, participants completed a questionnaire. This measure was employed to evaluate whether differential training effects observed in the team task could be attributed to hypothesis guessing. Kleinmann (1993) found that individuals who were able to correctly identify targeted dimensions in an assessment center exercise, after the fact, tended to have performed better on those dimensions.

Participants were asked in the questionnaire to identify what they believed had been evaluated in the team task. When asked this question, after the fact, 24% of the participants included assertiveness in their response. However, it is unclear from this measure at what point participants may have guessed the correct hypothesis. It is probable that the questionnaire itself caused some participants to make the connection, after the fact. Given that participants were told before the simulation that the purpose of the experiment was to study team coordination, asking them later what they believed was the purpose of the experiment is likely to have cued them to the fact that they had been deceived.

Following the post-exercise questionnaire all participants were debriefed regarding the nature of the experiment. Even those who correctly identified that their assertiveness had been evaluated reported being surprised when their teammate's confederate status was revealed. Participants received experimental credit for their participation.

Study 3 Results

Pre-Experimental Assertiveness

Results of a one-way analysis of variance (ANOVA) indicated that mean scores on the three Lorr and More (1980) subscales did not differ significantly across the experimental conditions prior to intervention (defense of interests, $F(3, 55) = 0.15, ns$; directiveness $F(3, 55) = 0.21, ns$; independence, $F(3, 55) = 0.35, ns$).

TABLE 4
Group Means and Standard Deviations—Study 3

	Attitudes		Behavioral ratings (adjusted for hypothesis guessing)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Control	4.36	.93	2.69	1.23
2. Lecture only	4.79	.76	2.66	1.17
3. Lecture and demonstration	4.67	.60	2.92	1.08
4. Behavior role modeling	4.87	.72	3.75	1.16
	<i>n</i> =60		<i>n</i> =60	

Attitudes Regarding Team Performance-Related Assertiveness

Group means on the attitude measure can be found in Table 4. Results of a one-way ANOVA did not indicate a statistically significant difference between experimental conditions $F(3,56) = 1.26, ns$. However, inspection of the mean attitude scores suggested that although the three training conditions may not have differed substantially from one another, they did appear to produce more positive attitudes than the control group. A subsequent analysis indicated that the three training conditions, when compared together against the control group, did produce more positive attitudes regarding team performance-related assertiveness, $t(56) = 1.69, p < .05$ (one-tailed).

Team Performance-Related Assertive Behavior

As is shown in Table 5, behavioral ratings of team performance-related assertiveness were not significantly correlated with participants' confidence in their simulator skill, pre-experimental assertiveness, or the post-training attitude measure. The ability to identify assertiveness as the skill that had been evaluated in the team task, after the fact, was correlated with ratings of team performance-related assertiveness. However, results of a one-way ANOVA indicated that the incidence of post-hoc hypothesis guessing did not differ across experimental conditions $F(3, 55) = 0.31, ns$.

Post-hoc hypothesis guessing was used as a covariate in the analysis of training effects on team performance-related assertive behavior. Adjusted group means can be found in Table 4. Results of a one-way ANCOVA indicated that training had a significant positive effect on team performance-related assertive behavior after removing the variance accounted for by hypothesis guessing, $F(3,55) = 2.91, p < .05$. The degree of association between training and behavior estimated by ETA squared

TABLE 5
Correlations Between Measures—Study 3

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Pre-experimental defense of interests	4.66	.66	(.69)					
2. Pre-experimental independence	4.48	.53	.27*	(.55)				
3. Pre-experimental directiveness	4.40	.68	.34**	.21	(.74)			
4. Post-training attitudes toward team-performance-related assertiveness	4.67	.77	.22	.08	.16	(.68)		
5. Confidence in simulator skill	2.38	.58	.07	.12	.06	.02	(1.00)	
6. Post-hoc hypothesis guessing	.24	.43	.05	.08	.05	.14	.01	
7. Post-training ratings of team performance-related assertiveness	3.01	1.23	.02	.23	.19	.17	-.09	.24*

Note: $n = 60$; * $p < .05$; ** $p < .01$

was $R^2 = .13$. Duncan post-hoc comparisons were then conducted to examine differences among the experimental conditions. Results indicated that training that followed a behavioral role-modeling approach (i.e., lecture, demonstration, active practice, and feedback) enhanced team performance-related assertiveness over control participants. The standardized effect size for behavior role modeling training was large, $d = .81$ (Cohen, 1969). In support of our hypothesis, behavior role-modeling training also produced more team performance-related assertiveness than training that included lecture only, ($d = .82$) and lecture with demonstration, ($d = .73$).

Participants whose training included lecture only, and lecture with demonstration, did not exhibit significantly more team performance-related assertiveness than did control participants. The observed difference between behavioral ratings for these trainees and control participants would have been quite small had it been statistically significant, $d = .20$ (Cohen, 1969). In fact, in order to have a statistical power of .60 to detect this difference at $\alpha = .05$ (one-tailed), we would have needed 181 participants per experimental condition (Shavelson, 1988).

Summary of Study 3 Findings

Together, results from Studies 1 and 2 suggested specific response types and context dependent attitudes that should be targeted by selection measures and industrial assertiveness training programs. Study 3

built on these results by comparing the relative efficacy of attitudinally focused versus practice-based approaches to training this content domain. As predicted, training that followed a behavior role modeling format (i.e., some lecture and demonstration with an emphasis on practice and performance feedback) produced more effective team performance-related assertive behavior than training that relied on information, demonstration, and motivational arguments. In fact, although all training conditions improved attitudes, the two formats that did not include active practice (i.e., completely lecture-based format, lecture with demonstration) failed to produce significantly more assertive performance than was exhibited by untrained participants. Had the observed differences in behavioral ratings been statistically significant, they would have represented negligible training effects.

Although the practice-based training was superior at enhancing behavior, it did not produce more positive attitudes, or a greater incidence of hypothesis guessing than did the remaining experimental conditions. These findings suggested that the underlying process or mechanism responsible for behavioral training effects was not attitude change or motivation due to demand characteristics, but skill development. Moreover, post-training attitudes were not a significant predictor of post-training behavior. Together these results support the contention that team performance-related assertiveness is more than just a context-specific attitude; it is a construct with a significant skill component.

Thus, attitudinally focused training approaches may produce positive effects on employee attitudes but fail to have an influence on performance in a team. In fact, rather than facilitating performance, it is possible that such interventions may actually backfire if motivated employees experience negative consequences after unsuccessfully attempting to apply the concept (Ruben & Ruben, 1989).

General Discussion

A number of recent authors have argued the need for greater levels of specificity in our understanding of "why, when, and for whom a particular type of training is most effective" (Tannenbaum & Yukl, 1992, p. 433). The three studies reported here have attempted to respond to this need by examining the determinants of team member assertiveness. In contrast to previous assertiveness research, each of these studies used participants from a nonclinical population, evaluated behavior in the context of task-related team member interaction, and operationalized assertiveness using a set of behaviors that have been linked to improved team decision making including: providing performance feedback to a team member, addressing perceived ambiguities and potential problems,

stating and maintaining opinions, offering potential solutions, initiating action, offering and requesting assistance or backup when needed (Cannon-Bowers et al., 1991; Oser et al., 1989; Prince & Salas, 1993).

What stands out most from these studies is that assertiveness is a multi-dimensional skill that individuals apply in a situation-specific manner. First, it was demonstrated that team performance-related assertive behavior, as defined here, is related to Lorr and More's (1980) directiveness and independence dimensions and relatively independent from defense of interests and social assertiveness. Second, our findings indicated that relationships among multiple measures of the same assertive responses differed significantly as a function of interpersonal context (i.e., personal, stranger, work related). Given these results, it appears important that measures designed to select individuals for work team positions assess only response types associated with directiveness and independence and specify a team context.

Moreover, results from Study 1 included some interesting findings related to gender and the use of assertiveness with team members. Previous research had found that males report using assertiveness more than females in public settings (e.g., question publicly a person of higher status; Mathison & Tucker, 1982). Consistent with these findings it was shown in Study 1 that males demonstrated more team performance-related assertiveness than females in the decision-making task. In addition, both male and female teammates were more willing to use assertiveness when interacting with females than with males. One implication of this finding is that female team leaders may find it easier than males to solicit opposing viewpoints from team members. Future research should examine mechanisms for reducing this hesitancy toward asserting oneself with male teammates.

Finally, although team performance-related assertiveness clearly involves an attitudinal component, the results from Study 3 suggested that a significant element of skill is essential as well. Although both attitudinally focused (i.e., lecture only, lecture with demonstration) and practice-based training (i.e., behavioral role-modeling) produced more positive attitudes toward using assertiveness in a team setting, only practice-based training had an impact on behavior.

Although it is generally recognized that experiential learning techniques are superior to conventional lecture formats, the cost effectiveness of the latter remains appealing to organizations. Moreover, shrinking personnel budgets often dictate that training is given by individuals who are not training specialists, do not have the skills, and do not feel comfortable facilitating role-play exercises and providing performance feedback. Therefore, it is of value to know when practice and feedback

are *essential* training mechanisms and when simpler and less costly interventions will suffice.

Furthermore, it has been our experience that in many cases, the practice and feedback segment of assertiveness training involves the participation of a few outgoing volunteers from the class in role-played situations, while the rest of the trainees watch. The findings reported here suggest that when implemented in this fashion, training may only have an impact on the few brave volunteers, who probably need the practice less than others.

Study Limitations

Although, as we have argued, the results from this line of research are more generalizable to an industrial setting than those from previous studies, a number of limitations remain. The participants in all three studies were recruited from a university setting and not a work organization. These participants can be considered characteristic of a population of college educated, entry-level employees that are often candidates for industrial assertiveness training to prepare them for their new roles in organizational workteams. However, they are likely to differ in a number of ways from the average factory worker, or experienced white-collar employee. In addition, Study 3 participants were all males interacting with a male confederate. Future research is needed to examine potential gender by treatment interactions and to test the generalizability of our findings using established organizational teams with members that vary in age, education and experience on the job.

Conclusions

These results provided evidence consistent with three propositions: (a) Team performance-related assertiveness is related to Lorr and More's (1980) directiveness (e.g., initiative behaviors) and independence (e.g., non-conformity behaviors) response classes, and relatively independent from defense of interests (e.g., refusal behavior) and socially assertive responses (e.g., initiating and maintaining relationships). (b) Interpersonal context (i.e., stranger, work related, personal) has a significant impact on the use of the same assertive responses. (c) Effective use of team performance-related assertiveness involves a significant skill component. These propositions have implications for both the content and method that should be employed by industrial assertiveness training programs. Furthermore, the data reported here have implications for the

development of selection measures designed to predict which employees are likely to demonstrate team performance-related assertiveness in a work team setting.

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