GROUP EMOTIONAL INTELLIGENCE:

THE RESEARCH AND DEVELOPMENT OF AN ASSESSMENT INSTRUMENT

A DISSERTATION

SUBMITTED TO THE FACULTY

OF

THE GRADUATE SCHOOL OF APPLIED AND PROFESSIONAL PSYCHOLOGY

RUTGERS

THE STATE UNIVERSITY OF NEW JERSEY

BY

CHRISTINA HAMME

IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE

OF

DOCTOR OF PSYCHOLOGY

NEW BRUNSWICK, NEW JERSEY JUNE, 2003

APPROVED: _____
CARY CHERNISS, Ph.D.

APPROVED: _____
LEW GANTWERK, Psy.D.

DEAN: _____
STANLEY MESSER, Ph.D.

ACKNOWLEDGEMENTS

I would like to express my deepest appreciation to my dissertation chair, Dr. Cary Cherniss, who spent hours emailing responses to my numerous questions, poring over data with me in his office, and serving as an unending source of feedback, suggestions, and support. It was through him that I learned a great deal about the iterative process that is research and my own love for the work. Thanks also to Dr. Lew Gantwerk, whose insightful comments helped me to consider the practical applications of the final product.

I cannot express the depth of my appreciation to Vanessa Druskat and Steve Wolff whose thoughts, feedback and suggestions at every point in the dissertation process led to a stronger and better instrument. They are wonderful thinkers.

So many people opened their groups to the data collection process. Special thanks to Gayle Stein of Rutgers University Computing Services and Sherrie Tromp of the Center for Organizational Development and Leadership at Rutgers who provided over 40 responses. Thanks also to Abigael Upton of the New York Public Library and Portia Culley whose valiant and repeated efforts to find groups resulted in over 30 responses. And Evelyn Orozco, Jeffrey Vega, Karen Buher, Hannelore, Peter and David Hamme, Juanita Peterson, Patti Marriott, Danene Sorace, Pauline Garcia, Winifred Quinn, Sophie Osborne, Katy Birckmayer, Ruth Orenstein, Michelle Figliuolo, and Matt Deveau all of whom kindly provided access to their groups.

Lastly, I would like to thank my family, my mom, dad, brother and sister-in-law, whose love and support and unquestioning confidence in my ability to do all I had set out to do lent me strength. And a special thanks to Andy. You made all the difference.

TABLE OF CONTENTS

LIST OF TABLES

GROUP EMOTIONAL INTELLIGENCE:
THE RESEARCH AND DEVELOPMENT OF AN ASSESSMENT INSTRUMENT

AN ABSTRACT OF A DISSERTATION

SUBMITTED TO THE FACULTY

OF

THE GRADUATE SCHOOL OF APPLIED AND PROFESSIONAL PSYCHOLOGY

OF

RUTGERS

THE STATE UNIVERSITY OF NEW JERSEY

BY

CHRISTINA HAMME

IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE

OF

DOCTOR OF PSYCHOLOGY

COMMITTEE CHAIRPERSON: CARY CHERNISS, Ph.D.

NEW BRUNSWICK, NEW JERSEY MAY, 2003

ABSTRACT

Studies of Emotional Intelligence have been limited to the individual level of analysis, yet the literature shows that group dynamics play a crucial role in group performance and effectiveness. In this study, an assessment instrument to measure group Emotional Intelligence as conceptualized by Druskat and Wolff (2000) was developed. The instrument and four subscales of Hemphill's (1956) Group Dimensions Description Questionnaire were administered to a total of 167 people from groups in business organizations in the Eastern and Midwestern United States. Coefficient Alpha was calculated for each of the 13 subscales on the Group EI instrument to assess reliability and scores on the four subscales of the Group Dimensions Description Questionnaire (intimacy, control, viscidity and hedonic tone) were compared with the Group EI subscales to determine convergent and divergent validity. A confirmatory factor analysis was conducted on the data in an effort to confirm the 6 dimensions proposed by Druskat and Wolff (2000) as underlying the 13 subscales. Eight of the 13 original subscales were found to be reliable. Building relationships and ambassadorial orientation, and team self-evaluation and seeking feedback were combined to form two additional subscales with Coefficient Alphas over .8, for a total of 10 reliable subscales. Convergent and divergent validity emerged as expected. Five of the six dimensions proposed in Druskat & Wolff's (2000) theory as underlying the subscales were confirmed: group regulation of members, group self-awareness, group self-regulation, group social awareness, and group social skills. Suggestions for further study and application are made.

CHAPTER I

INTRODUCTION

In 1990, Salovey and Mayer published an article in which they first coined the term "emotional intelligence" (EI), defining it as the ability to monitor one's own and other's feelings and emotions, and to use this information to guide both thinking and action. Their article might have passed by unnoticed, if a behavioral and brain sciences journalist for the New York Times named Daniel Goleman had not picked it up and written a book on the subject (Goleman, 1998). In his book, Goleman reviewed the data from 25 years of research to determine a number of intra- and inter-personal competencies associated with EI. Today, he defines emotional intelligence as a construct divided into four dimensions: awareness and regulation of emotions in self—the intrapersonal dimensions—and awareness and regulation of emotions in others—the interpersonal dimensions (Goleman, 2001). Each dimension has several competencies within it. Self-awareness includes the competencies emotional self-awareness and accurate self-assessment, self-regulation includes emotional self-control and conscientiousness, awareness of others includes empathy and organizational awareness and regulation of others includes influence and visionary leadership.

Yet emotional intelligence as a construct would have had no great impact were it not for its link to performance. Goleman's (1998) review of the literature found that EI is an

extremely important factor in predicting leadership performance and success. In its publication on the business case for emotional intelligence, the Consortium for Research on Emotional Intelligence (1999) reports similar findings from a variety of sources. The Consortium (1999) states that in a study of 130 executives conducted by Walter V. Clarke Associates it became apparent that the inclination of the people around the executives to deal with them was determined by the executives' ability to handle their own emotions. Research by the Center for Creative Leadership has found that a lack of emotional competencies such as good interpersonal relations is the primary cause of executive derailment (Consortium for Research on Emotional Intelligence, 1999). It has also been suggested that emotional awareness and regulation of others, such as the ability to read others accurately and to be persuasive, enhances the success of entrepreneurs (Baron & Markman, 2000).

Following Goleman's (1998) publication, emotional intelligence received much attention in both the popular and scientific literature (e.g. Goleman, 1998; Schwartz, 2000; Fisher & Ashkanasy, 2000), but up until now this attention has focused almost exclusively on the individual. In an unpublished paper, Druskat and Wolff (2000) address this gap by proposing the first model of group emotional intelligence. They argue that if individual EI is based on a theory of performance, a similar theory might be applicable at the group level. Their review of the literature revealed that studies consistently show that effective performance of groups is dependent upon the level of cooperation and collaboration among group members, yet no theory clearly outlines those actions which ultimately lead to such cooperation. Druskat & Wolff (2001b) did

find, however, that groups high in cooperation and collaboration hold three collective beliefs: mutual trust among members, group identity (a feeling among members of inclusiveness and attachment to the group), and group efficacy (a feeling among members that the group can perform well and be successful). The presence of these shared beliefs facilitates group cooperation and collaboration.

Druskat and Wolff (2001b) propose that the development of these shared beliefs is influenced by the way that emotions are treated in the group context. Every group has a set of shared norms, either conscious or unconscious, which dictate how emotion is expressed and processed within it. Emotionally intelligent norms in the group are likely to enhance the feelings of trust, group identity, and group efficacy so essential for cooperation, whereas non-emotionally intelligent responses to emotional stimuli are likely to generate negative feelings about the group, reduce levels of cooperation, and subsequently reduce its effectiveness.

This in mind, Druskat and Wolff (2001b) define group EI (GEI) as the ability of a group "to develop a set of norms that manage emotional processes so as to cultivate trust, group identity, and group efficacy" (pp. 133). Their model is based on the dimensions of awareness and regulation of self and other proposed by Goleman (1998), but the unit of analysis is the group. It is their assertion that a group's ability to manage emotions both inside itself (individual and group level) and with other groups (cross-boundary level) influences feelings of trust, group identity and group efficacy and subsequently facilitates cooperation. Their model (Appendix D) expands Goleman's (1998) to identify six dimensions of group emotional intelligence at three levels. These

dimensions also appear in their published models (Druskat & Wolff, 2001a; 2001b). At the individual level are Group Awareness of Individual Members and Group Regulation of Individual Members. At the group level are Group Self-Awareness and Group Self-Regulation and at the cross-boundary level are Group Social Awareness and Group Social Skills. Each dimension is described by two to three constructs for a total of thirteen: perspective taking, interpersonal understanding, confronting members who break norms, caring orientation, team self-evaluation, seeking feedback, creating resources for working with emotion, creating an affirmative environment, proactive problem solving, organizational awareness, intergroup awareness, building relationships with external sources, and ambassadorial orientation.

Druskat and Wolff (2000) do not propose a method for measuring the proposed dimensions, nor does such an instrument currently exist. In the pages to follow I will discuss why assessment of group characteristics is essential for both researchers and practitioners, why few instruments exist, what difficulties are inherent in group assessment, and why one should measure group Emotional Intelligence as opposed to other group characteristics.

Several major disasters have been attributed to the failure of group functioning, including the space shuttle Challenger disaster in 1986 (Hirokawa, Giuran, & Martz, 1988; Moorhead, Ference, & Neck, 1991) and several fatal airplane crashes (Hartley, 1997). At the Wharton Risk Management and Decision Processes Center, research on high-risk industries and accident prevention has incorporated the psychology of groups as a major component (Wharton Risk Management and Decision Processes Center,

2000). Measurement of group characteristics is central to understanding the group-level phenomena that may lead to such tragedies and subsequently to taking action to prevent them. The reliable assessment of groups on various competencies will allow us to compare successful and unsuccessful groups on clearly specified dimensions and to use this comparison data for the prediction of high performance and for the focusing of interventions aimed at altering low performance. Given the tremendous impact of groups on their organizations and/or surrounding environments and the relevance of their internal characteristics to this impact, it is surprising that pen-and-paper group assessment instruments are not more common.

The dearth in group assessment instruments may in part be due to the fact that measurement of group characteristics is significantly complicated because of the difficulty in defining groups. In the literature there does not seem to be any consensus as to a group definition, and definitions range from the broad: “A group is defined as two or more persons who are interacting with one another in such a manner that each person influences and is influenced by each other person” (Shaw, 1981, p. 8) to the more specific: “There are five characteristics which differentiate the group from a collection of individuals. The members of the group are in interaction with one another. They share a common goal and set of norms which give direction and limits to their activity. They also develop a set of roles and a network of interpersonal attraction, which serve to differentiate them from other groups” (Hare, 1976, p. 4). Items on an assessment instrument aimed at understanding a group according to the former definition may vary significantly from those aimed at understanding a group according

to the latter definition. This is further complicated when the dynamics of group processes are factored in.

Bion (1961) indicated that much of group process is unconscious and that group phenomena are separate and distinct from the individuals within the group. In other words, although individuals may bring specific competencies to a group, these competencies may or may not manifest themselves depending on the unconscious group phenomena that permit or restrict expression. Indeed it has been found that self-reports of individual competencies are often not correlated with actual behavior in group. In a study of self-disclosure, for example, Lubin and Harrison (1964) found that individual reports of self-disclosure were inconsistent with actual self-disclosing behaviors while in group. Such inconsistencies are supportive of Bion's theory and suggest that summation of the emotional intelligence of each individual in a group would be insufficient to determine manifestation of EI-related competencies within the group and subsequent overall group emotional intelligence.

The conceptualization of a group and its phenomena as separate from its individual parts causes one to question how group characteristics are to be measured. In answer to this question, some have suggested the use of observational data. In their article on methodological issues in group assessment, Stock and Lieberman (1974) suggest that assessment of group character occur through a "holistic, clinical approach" (p. 58). Bales (1950) attempted to take this observational approach one step further by developing his Interaction Process Analysis. This process requires judges to observe a group and rate its individuals on 12 interactional categories. The collective ratings allow

the judges to make inferences about the overall characteristics of the group. Bales was able to demonstrate an inter-observer correlation and subsequent reliability of his tool only with competent and trained observers, indicating that its efficacy is subject to the training of its users.

Thelan developed a similar observational assessment process using Bion's original theory (Stock & Thelan, 1958). The judges in this case examine every act within the group and score it on work or emotional dimensions. Although both Thelan's and Bales' observational techniques may potentially overcome the difficulties inherent in summing individual scores on various competencies for an overall group score, they require trained judges and a significant amount of time to observe the individual groups.

Written tests based on self-report are believed to overcome the time and personnel constraints intrinsic to observational data collection, and a number have been developed which ask for reports of group-level phenomena as opposed to individual behavior in groups. Many of these focus on organization or system-wide phenomena, such as the Community-Oriented Programs Environment Scale (Moos, 1972), the Work Environment Scale (Moos & Insel, 1974), the Ward Atmosphere Scale (Moos, 1974), and the Profile of Organizational Characteristics (Likert, 1967). Others look exclusively at the group in relation to other groups, such as Bogardus' Social Distance Scale (Bogardus, 1959), which queries group members as to the group's acceptance of various racial and ethnic minorities.

There are very few self-report written instruments that look at a variety of internal group characteristics in an attempt to assess group functioning and that ask for

reports of group-level phenomena as opposed to individual behavior in group. Moos' (1981) Group Environment Scale was developed to address this gap in the literature. It has ten subscales in three domains. These domains are Relationship (subscales=Cohesion, Leader Support, and Expressiveness), Personal Growth (subscales=Independence, Task Orientation, Self-discovery, and Anger/Aggression), and System Maintenance/System Change (subscales=Order and Organization, Leader Control, and Innovation). Although the cohesion, expressiveness, and anger/aggression subscales could probably be described as group norms likely to impact members' shared beliefs of trust, group identity, and group efficacy, Moos' (1981) task orientation, order and organization, and leader control are more aspects of organization and task than emotional awareness and management. They would not, therefore, be considered competencies in group EI and so do not fit into the overall construct.

Hemphill (1956) also developed a scale for looking at internal group characteristics called the Group Dimensions Description Questionnaire. This instrument looks at 13 dimensions of group life, including Control, Stability, Intimacy, Stratification, Hedonic Tone, Autonomy, Potency, Viscidity, Permeability, Participation, Polarization, Flexibility, and Homogeneity. Hemphill's (1956) measurement begins to look at the emotional component to group life although without the depth that the group EI model requires. His intimacy scale, for example, defined as the degree to which group members know one another, overlaps with the group EI competency of interpersonal understanding in the group awareness of members dimension. Hemphill's (1956) intimacy, however, includes items like "Members of the

group lend each other money" and "Each member of the group knows all other members by their first names," which do not fully explicate the nature and depth of interpersonal understanding. Other items on the scale are quite outdated, like "The group contains whites and Negroes" and "Group meetings are conducted according to 'Robert's Rules of Order.'"

Clearly there are relatively few self-report instruments that measure group characteristics and fewer still that aid in the identification of the dimensions of group emotional competencies. The tremendous impact of group dimensions on effective performance makes it clear that a need for such measurement is there. But why specifically group Emotional Intelligence? When controlling for IQ, individual emotional competencies have been purported to be a strong predictor of success and high performance in the workplace (Baron & Markman, 2000; Goleman, 1998). Weiss and Cropanzano (1996) propose that mood and emotion mediate the relationship between stable aspects of the work environment and behavior on the job. And Fisher and Ashkanasy (2000) state that the study of emotions in the workplace is key to understanding behavior in organizations. Given all of the emphasis on individual EI and its impact on performance, it stands to reason that emotions in group life also play a role in group effectiveness and achievement. Indeed, Druskat and Wolff (2001b) have argued that the way emotions are treated in the group directly impacts the development of shared beliefs of trust, group identity and group efficacy which in turn facilitate the development of cooperation so essential to performance. They further argue that intervening at the level of cooperation is insufficient for full-scale improvement in

performance. Groups with difficulty in cooperating will not suddenly improve once this difficulty is identified and cooperative techniques successful in other groups are emulated. Without addressing the underlying issue—the group's treatment of emotions within it—group members will be unable to commit wholeheartedly to the task at hand and subsequently engage in the level of cooperation essential for performance gains. An interesting analogy is the band-aid over the bullet wound. The band-aid temporarily covers the wound, but provides no cure. For this reason, instruments aimed at measuring surface group characteristics such as task orientation and hierarchical organization of the group fail to assess the EI characteristics at the root of group collective beliefs and subsequent functioning.

Development of a valid and reliable group EI assessment scale that is scored by combining input from all individual members, therefore, would address several of the gaps in the literature discussed above: 1) it would provide a written measurement of group characteristics with items aimed at the group rather than individual or organizational levels, 2) it would overcome the difficulties in differentiating between an individual's perception of own behaviors in groups and the reality, and 3) it would aid researchers and consultants in identifying and addressing the emotional component in group work at the foundation of collaboration and effective performance.

GOALS

The primary goal of this study is to devise a new method for measuring and understanding group dynamics and characteristics based on the theory of group Emotional Intelligence. This will allow for greater understanding of the impact of

emotion on group achievement and will enable researchers to identify competencies integral to high performance and effectiveness. Ultimately, group competency models specific to organization and task can be developed using the group EI questionnaire. This will facilitate design of interventions aimed at impacting group performance.

The secondary goal is to develop exploratory data on what factors may be associated with elevated and lower levels of group EI in groups. This will provide preliminary information on characteristics that can be explored in future research for their causal role in the development of group EI and subsequent plausibility as predictors.

OBJECTIVES

Upon completion of this project, there will be a new group Emotional Intelligence assessment instrument with reliability and validity data. When this project is finished the instrument should have the following:

1. Convergent validity as determined by the convergence of the instrument's 13 Group EI competency subscales (perspective taking, interpersonal understanding, confronting members who break norms, caring orientation, team self-evaluation, seeking feedback, creating resources for working with emotion, creating an affirmative environment, proactive problem solving, organizational awareness, intergroup awareness, building relationships with external sources, ambassadorial orientation) with those subscales in Hemphill's (1956) instrument identified as relevant.

2. Divergent validity as determined by the divergence of the instrument's 13 Group EI competency subscales with those identified as relevant in Hemphill's (1956) instrument.
3. Internal reliability as determined by Coefficient Alpha for each of the 13 competency subscales,
4. Confirmatory factor analysis identifying all items as falling within one of the 6 underlying group EI dimensions (Group Awareness of Members, Group Regulation of Members, Group Self-Awareness, Group Self-Regulation, Group Social Awareness, Group Social Skills), and
5. Analysis of variance showing a greater difference in variability between groups than within groups.

In addition, completion of this project should result in preliminary information about the kind of demographic characteristics associated with elevated and lower levels of group EI.

CHAPTER II

METHODS

Phase I: Generation of the Initial Pool of Items

A pool of 182 items was initially developed based on Druskat and Wolff's (2000) unpublished model of group Emotional Intelligence. Although in their published models Druskat and Wolff drop ambassadorial orientation from their competencies (2001b) and combine intergroup awareness with organizational awareness to form one competency (2001a), this study included all of the original 13 competencies associated with the six dimensions. Each item operationalized one of the 13 competencies associated with one of the group EI dimensions in the model (Appendix D) and was a statement about group behavior. Respondents were asked to indicate the degree to which the statement is reflective of their group on a 5-point Likert scale with "1" being "completely agree" and "5" being "completely disagree." Additional items were constructed by 9 students in a graduate seminar on emotional intelligence and were added to the pool for a total of 196 items. Each of the 13 competencies in the model was represented by multiple items, and every item had a negative counterpart.

This initial pool was distributed to the authors of the model who assessed each item for readability and for relevance to the competency it was meant to reflect. In response to their review, the instrument was revised to 78 items. It was then

administered to a 6-person pilot group of individuals who provided referrals to groups that were subsequently included in the study. The pilot group members were asked to report any items, directions, or other elements that were confusing, difficult to answer or unclear. Upon completion of pilot testing, it was determined that the average time for test-taking was 20 minutes. Directions were slightly modified to use layman's language as opposed to more psychological wording. For example, the word "items" was replaced with the word "statements." A few questions were corrected for grammatical errors (for example, in question 3 the word "that" was changed to "who"). Questions were alternately shaded to increase readability and the 5-point Likert-like scale was elongated to a 7-point scale, in accordance with methodology suggested by Miller (1976).

Phase II. Testing for Validity and Reliability

Selection of the Validating Instrument

Hemphill's (1956) Group Dimensions Description Questionnaire was selected to provide correlational data for the Group EI instrument. Although Hemphill's original instrument had 13 subscales, inclusion of all 13 would require inclusion of 150 additional questions. The pilot group had suggested that the 150 Hemphill questions in addition to the 78 of the Group EI instrument were excessive, may result in reducing the number of individuals willing to participate in the research, and may add to error from fatigue among those who do participate. For this reason, only 4 of Hemphill's subscales were selected for the purposes of this research, thereby reducing the total number of

questions from 150 to 42. The four selected were those deemed most likely to provide some convergent validity: control, intimacy, hedonic tone, and viscidity (Appendix E).

Hemphill's (1956) control is defined as "the degree to which a group regulates the behavior of individuals while they are functioning as group members" (p. 2). Intimacy is defined as "the degree to which members of a group are mutually acquainted with one another and are familiar with the most personal details of one another's lives," hedonic tone as "the degree to which group membership is accompanied by a general feeling of pleasantness or agreeableness…reflected by the frequency of laughter, conviviality, pleasant anticipation of group meetings and by the absence of griping and complaining," and viscidity as "the degree to which members of the group function as a unit….reflected by absence of dissension and personal conflict among members [and] by absence of activities serving to advance only the interests of individual group members" (Hemphill, 1956, p. 3-4).

Participants

One hundred and sixty seven people (slightly more than the two to one ratio of subjects to items –or "variables"—in factor analysis as suggested by Kline, 1979, and the 1.3:1 ratio suggested in a study by Arrindell & van der Ende, 1985, and 1.2:1 ratio suggested by Barrett & Kline, 1981) and a total of 34 groups were sampled from a variety of business organizations in the east coast and midwest regions of the United States. The groups included investment bankers, managers, and portfolio advisors, firefighters, university faculty members and researchers, university computing services, candy salespeople, car dealership customer service representatives, bartenders,

psychological case managers, clinical group home staffs, music librarians, researchers, organizational consulting and training teams, medical records administrators, architects and urban designers, and a choir. Criteria for selection were that the individuals were older than 18 and were members of a work group of 3 or more people.

Of the total sample, 40% were male, 55% were female and 5% did not indicate sex; 5% were African-American, 4% were Asian/Pacific Islanders, 1% were Native Americans or Alaskan Natives, 13% were Hispanic, 73% were white, 1% were other and 7% did not report. Also for the total sample, ages ranged from 20 or below to 70, with 1% 20 or below, 35% 21-30, 25% 31-40, 20% 41-50, 10% 51-60 and 2% 61-70 and 7% not reporting. Length of membership in groups of individual respondents ranged from 1 month to 33 years with 80% of the total sample reporting membership in duration of 6 months or more and 6% not reporting. The response rate for the total sample was 58% (Table 1).

The groups themselves were widely diverse, ranging in size from a total of 3 people to 50. Eight groups were comprised entirely of females, three were entirely male, and the remaining groups had both genders represented. Nine groups were entirely white, three were entirely Hispanic, and the remaining groups were racially mixed.

Recruitment and Distribution Procedure

Groups were recruited through liaison contacts at Rutgers University's School of Communication, Information, and Library Science and through convenience sampling of associates of the author. Within each organization a liaison was identified and was asked to identify groups that he/she felt would be appropriate for the study based on the

criteria stated above, to initiate preliminary contact with group leaders (if other than the liaison), and, upon gleaning some interest, provide contact information for these group leaders to the researcher. The researcher contacted group leaders, explained the nature of the study, guaranteed anonymity, and asked if the group would be willing to participate. Upon approval by the group leader, the study was introduced to groups via one of two methods. Either the researcher and leader arranged a time to meet with group members at which time the researcher explained the nature of the study and asked for volunteers to participate, or the researcher provided the leader with a script (Appendix H) to read when soliciting volunteers and distributing the questionnaires. Each participant was asked to sign a consent form (Appendix G) and to answer both the Group Emotional Intelligence Questionnaire (Appendix B) and an updated version of four subscales of the Group Dimensions Description Questionnaire (Appendix A) describing his or her group. The group leader indicated which group respondents were to describe. Respondents were then told to specify on the questionnaire exactly which group they were describing and to describe only that group which the leader had originally identified as a relevant work group. Respondents were also asked to fill out basic demographic information on themselves with the assurance that their identify would be kept anonymous. Included was: gender, race/ethnicity, age, type of group, and length of membership (Appendix C).

Table 1
Title of Groups and Rate of Return

Group	Group Title	No. Distributed	No. of Responses	%
1	Medical records staff	6	5	83
2	Bankers 1	3	3	100
3	Bankers 2	6	5	83
4	Music librarians	12	8	66
5	Choir	12	7	58
6	Computer managers	12	9	75
7	Ext. communications team	10	4	40
8	Computer resources	4	4	100
9	Computer directors	11	9	81
10	Computer help desk	2	2	100
11	Computer services	15	14	93
12	Candy salespeople	8	4	50
13	Faculty/staff group 1	19	9	47
14	Restaurant staff	15	5	33
15	Training team	8	6	75
16	Social services leaders	7	6	86
17	Clinical case managers--PA	8	7	88
18	Faculty/staff group 2	7	6	86
19	Faculty/staff group 3	3	2	66
20	Clinical case managers--NJ	6	2	33
21	Firefighters	4	3	75
22	Bankers 3	8	3	38
23	Bankers 4	3	3	100
24	Bartenders	5	3	60
25	Research group	4	2	50
26	Organizational consulting team	5	5	100
27	Car dealership customer service team	4	4	100
28	Sex educators	4	2	50
29	Child counselors	13	4	31
30	Organizational mktg. team	6	4	66
31	Adminstrators-PA	7	5	71
32	Architects	20	5	25
33	Landscape architects	20	3	15
34	Planners/urban designers	10	4	40
Total		287	167	58

Analysis

Data for all 167 respondents was entered and Coefficient Alpha was calculated for each of the 13 subscales to determine internal reliability. Items that were unreliable were discarded and Coefficient Alpha was recalculated without the discarded items.

Correlations between the 4 subscales of Hemphill's (1956) Group Dimensions Descriptions Questionnaire and the 13 subscales of the Group EI Questionnaire were calculated for convergent and divergent validity. It was hypothesized that subscales intimacy and interpersonal understanding, control and confronting members who break norms, viscidity and caring orientation, and hedonic tone and creating an affirmative environment would be positively correlated with one another, indicating convergent validity. It was also hypothesized that Group Dimensions Description Questionnaire subscales intimacy, control, hedonic tone and viscidity would not be correlated with Group EI Questionnaire subscales not identified above, indicating divergent validity (Appendix F).

A confirmatory factor analysis was conducted on the Group EI Questionnaire data to confirm the 6 dimensions underlying the 13 subscales (Group Awareness of Members, Group Regulation of Members, Group Self-Awareness, Group Self-Regulation, Group Social Awareness, Group Social Skills). It was hypothesized that items from the 13 competencies would factor into those dimensions with which they are associated according to the theory. In other words, interpersonal understanding and perspective taking items would factor into Group Awareness of Members, confronting members who break norms and caring orientation items would factor into Group

Regulation of Members, team self-evaluation and seeking feedback items would factor into Group Self-Awareness, creating resources for working with emotion, creating an affirmative environment and proactive problem solving items would factor into Group Self-Regulation, intergroup awareness and organizational awareness items would factor into Group Social Awareness, and building relationships with external sources and ambassadorial orientation items would factor into Group Social Skills.

Analysis of variance was conducted to determine if between group variability was greater than within group variability. It was hypothesized that between group variability would be greater.

Group mean scores were also calculated for each reliably measured competency and were compared with those of all other groups. The five highest and five lowest group scores in each competency were identified. Those groups that scored highest on five or more competencies were identified as the highest scoring EI groups. Those groups that scored lowest on five or more competencies were identified as the lowest scoring EI groups. The demographic characteristics of the highest and lowest scoring groups were compared to determine if any clear differences emerged.

CHAPTER III

RESULTS

Coefficient Alpha was calculated for each of the 13 subscales. Of the six items originally in each scale, those that were unreliable were dropped (Appendix I) and Alpha was recalculated for the remaining items (table 2).

Table 2
Means, Standard Deviations, and Reliabilities of Group EI Competencies

	Competency	Items	M	SD	α
1	Perspective taking	5	24.67	5.59	.73
2	Interpersonal understanding	6	28.29	5.41	.68
3	Confronting members who break norms	5	22.71	5.08	.65
4	Caring orientation	6	32.75	6.90	.83
5	Team self-evaluation	5	24.35	5.18	.63
6	Seeking feedback	6	29.07	5.90	.71
7	Creating resources for emotion	5	21.97	5.69	.74
8	Creating an affirmative environment	4	20.78	4.02	.74
9	Proactive problem solving	4	21.18	4.02	.69
10	Organizational awareness	5	29.06	6.13	.73
11	Intergroup awareness	6	28.28	6.27	.76
12	Building relationships	6	30.80	6.54	.82
13	Ambassadorial orientation	3	14.17	3.56	.67

Of the 13 original subscales, 8 (perspective taking, caring orientation, seeking feedback, creating resources for working with emotion, creating an affirmative environment, organizational awareness, intergroup awareness, and building relationships) had reliabilities of .7 or greater. Interpersonal understanding and proactive problem solving were slightly lower with reliabilities of .68 and .69 respectively. Reliability for the team self-evaluation subscale was also fairly low (α=.63), even after the removal of unreliable items. As team self-evaluation and seeking feedback are two highly related competencies and belong to the same underlying dimension, the subscales were combined and Coefficient Alpha was recalculated for the combined scales. Similarly, building relationships and ambassadorial orientation were also combined to increase reliability of the scales (table 3). The increased reliability as a result of the latter combination would seem to support Druskat and Wolff's (2001a, 2001b) decision to combine these competencies into a single competency called "building external relationships" in both their published works.

Table 3

Means, Standard Deviations, and Reliabilities of Combined Group EI Competencies

	Competency	No. of items	M	SD	α
5/6	Team self-evaluation, seeking feedback	11	53.52	10.04	.80
12/13	Building relationships, ambassadorial orientation	9	44.99	9.37	.86

Confronting members who break norms had a somewhat low reliability (α=.65). Unlike team self-evaluation and ambassadorial orientation, there is no subscale with

which confronting members who break norms clearly could be combined. Although it falls within the same dimension as caring orientation, the behaviors and underlying meaning associated with the two competencies are significantly different, rendering a blending of the two scales meaningless.

The lack of reliability in confronting members may have to do with the variability in the items themselves. Two items are aimed at determining if the group has norms ("our group has well understood rules concerning member conduct, either written or unwritten" and "there is very little behavior that is considered unacceptable in our group"); two items presume that a norm is that individual members will pull their own weight ("if someone isn't pulling his or her weight in our group, we ignore it" and "we tell group members who aren't doing their fair share of the work to shape up"); and two items look at group response to behaviors that are inappropriate or elicit discomfort ("we grumble about members that behave inappropriately, but don't address them directly" and "if a member behaves in a way that makes the rest of us uncomfortable, we confront him or her directly"). Perhaps a more effective scale would look for confronting behaviors without any presumption of what would be considered appropriate in a group. This would call for the elimination of the two questions presuming sharing of workload is a group norm. In addition, Druskat & Wolff (2001a) suggest that confronting members is characterized by the laying of ground rules. The items aimed at determining if the group has set norms do not query as to explicit manifestations of ground rules, either established through group discussion or the

production of written materials. Revisions to the scale taking the above into account may result in greater reliability.

A correlation was run between the 13 Group EI competencies and Hemphill's (1956) four subscales to determine convergent and divergent validity. The results of this analysis are presented in table 4.

As expected there was a large correlation between interpersonal understanding and intimacy (r=.574), caring orientation and viscidity (r=.773), and creating an affirmative environment and hedonic tone (r=.543), providing preliminary support for convergent validity for these subscales. Unexpectedly, creating an affirmative environment also had a large correlation with Hemphill's viscidity (r=.529). Viscidity is defined in part as an absence of dissension and personal conflict (Hemphill, 1956, p. 4). It is not entirely surprising that the characteristics of positive group affect, optimistic outlook, and feelings of group efficacy associated with creating an affirmative environment would also be associated with the absence of personal conflict highlighted in Hemphill's viscidity. After all, a positive group affect must in part be determined by the level of conflict within the group itself. Similarly, there is an association between Hemphill's (1956) concept of hedonic tone (an overall feeling of pleasantness and agreeableness in the group) and viscidity (r=.439). The correlation between creating an affirmative environment and viscidity, though unexpected, can therefore be interpreted as additional evidence of convergent validity for creating an affirmative environment.

Table 4

Correlations among Group EI Competencies and Hemphill (1956) Subscales

	EI1 Perspective taking	EI2 Interpersonal understanding	EI3 Confronting members who break norms	EI4 Caring orientation	EI5 Team self-evaluation	EI6 Seeking feedback	EI7 Creating resources for emotion	EI8 Creating an affirmative environment	EI9 Problem solving	EI10 Organizational awareness	EI11 Intergroup awareness	EI12 Building relationships	EI13 Ambassadorial orientation	H1 Control	H2 Intimacy	H3 Hedonic tone	H4 Viscidity
EI1	--																
EI2	.498*	--															
EI3	.510*	.502*	--														
EI4	.618*	.367*	.454*	--													
EI5	.510*	.428*	.442*	.548*	--												
EI6	.526*	.362*	.456*	.550*	.684*	--											
EI7	.473*	.508*	.447*	.388*	.528*	.376*	--										
EI8	.552*	.340*	.430*	.662*	.530*	.625*	.256*	--									
EI9	.643*	.391*	.535*	.609*	.591*	.595*	.417*	.597*	--								
EI10	.425*	.375*	.433*	.429*	.375*	.395*	.184t	.534*	.457*	--							
EI11	.467*	.402*	.509*	.429*	.444*	.543*	.230*	.495*	.524*	.496*	--						
EI12	.443*	.293*	.480*	.414*	.395*	.490*	.270*	.447*	.485*	.316*	.685*	--					
EI13	.467*	.291*	.408*	.474*	.485*	.594*	.288*	.441*	.505*	.352*	.630*	.699*	--				
H1	-.303*	-.265*	-.109	-.325*	-.142	-.149	-.140	-.301*	-.196t	-.292*	-.182t	-.214*	-.204*	--			
H2	.327*	.574*	.403*	.368*	.368*	.286*	.495*	.279*	.365*	.273*	.273*	.285*	.229*	-.154t	--		
H3	.357*	.207*	.119	.428*	.285*	.288*	.096	.543*	.394*	.452*	.269*	.256*	.334*	-.328*	.148	--	
H4	.508*	.272*	.323*	.773*	.361*	.375*	.258*	.529*	.434*	.374*	.271*	.303*	.279*	-.303*	.304*	.439*	--

*=correlation is significant at the .01 level
t=correlation is significant at the .05 level

Also unexpected was the large correlation between viscidity and perspective taking (r=.508). Hemphill's (1956) definition of viscidity would make this not altogether surprising. His description of viscidity as, in part, the "absence of activities serving to advance only the interests of individual group members" (p. 3) is consistent with perspective taking, in as much as groups that seek to understand the perspectives of all members would be less likely to advance activities serving the interests of only a select few. This association may be that which led to the large correlation seen in the data and may allow for the interpretation of the correlation as providing some evidence for convergent validity.

In direct contradiction of what was originally hypothesized is the utter lack of correlation between confronting members who break norms and control (r=-.109). This absence is more difficult to explain as the definition of control—the degree to which a group regulates the behavior of individual members (Hemphill, 1956, p. 2-3)—is quite similar to that of confronting members who break norms—speaking up when a member does something that is out of line (Druskat & Wolff, 2001b, p. 142). The lack of correlation may in part be due to the low reliability of confronting members who break norms. However, a closer review of the items in both scales would also seem to indicate that their constructs may be quite a bit more different than originally hypothesized. Although the first item in control ("the group has well understood but unwritten rules concerning member conduct") is quite similar to the second in confronting members who break norms ("Our group has well understood rules concerning member conduct, either written or unwritten"), the remaining items in Hemphill's scale bear little

similarity to confronting members who break norms. Indeed, 6 of the 12 items in control (Numbers 3, 4, 5,8, 9,11) address the issue of how the group controls the individual's leaving of the group, and 3 of the remaining 6 address the issue of how comfortable individuals feel to speak freely in the group (Numbers 2, 7, 10) (Appendix E). In contrast, the majority of the items in confronting members who break norms focus on the actions of confronting individual members who fail to meet the standards of the group (Appendix D). Underlying the control scale is the assumption that control of individual behavior in a group is dictated largely by how membership in a group is obtained and kept or lost and how freely members may speak in group meetings. It may be suggested that individuals who fail to meet the standards of the group are confronted by having their membership revoked or by having their ideas and suggestions shut down. However, this would seem to be more indicative of a lack of direct confrontation and the controlling of individual behavior via more circuitous means, which would not be expected to correlate with confronting members who break norms.

A confirmatory factor analysis was run on the 78 original items using a principal components method of extraction and an oblimin rotation. For the correlation matrix, the Bartlett sphericity test was 6080.22 ($p<.001$) and the 6 factors were confirmed. The scree plot (Cattell, 1978) also indicated 6 clear factors. Five of the 6 factors had Coefficient Alphas over .70 and had four or more items. As the sixth factor was unreliable ($\alpha=.47$) and had only three items which were all inconsistent with theory, this factor was dropped.

The remaining five factors accounted for 40% of the variance. Of the 78 items, 35 did not load uniquely greater than 4.0 on any of the five reliable factors and so were dropped. The remaining 43 items and their factors were analyzed for fit with Druskat and Wolff's six dimensions (2000; 2001a; 2001b). Each item was labeled according to the competency and its associated dimension to which it originally belonged. The factor was then assessed to determine from which dimension the majority of items were drawn. Those items not belonging to the majority dimension were dropped. In factor 1, three items were dropped; factor 2, two items were dropped; factor 3, four items were dropped; factor 4, two items were dropped; factor 5, three items were dropped. The remaining items and their factor loadings are reported in table 5.

Reliability was calculated for the five factors; all had an alpha of .70 or greater. Means, standard deviations and reliabilities are in table 6. The five factors are consistent with five of the dimensions in Druskat and Wolff's (2000; 2001a; 2001b) model. Factor 1, Group Regulation of Members, contains items that are indicative of the way the group relates to and regulates individual members; Factor 2, Group Self-Awareness, contains items relating to how the group self-evaluates and responds to feedback; Factor 3, Group Self-Regulation, contains items that indicate how the group stimulates or stifles emotional expression; Factor 4, Group Social Awareness, contains items relating to the group's knowledge of other groups; and Factor 5, Group Social Skills, contains items relating to how the group builds relationships with external sources. Not confirmed by the data was the first dimension in the model: Group Awareness of Members.

Table 5
Factors, Underlying Competencies, Items and Factor Loadings for the Group Emotional Intelligence Scale

Factor	Item	Factor Loading
1. Group Regulation of Members		
Confronting members	We grumble about members who behave inappropriately but don't address them directly	.67
Perspective taking	Only a few members' opinions carry any weight in decision making	.62
Caring orientation	Some members treat other members badly	.78
Caring orientation	Certain members of the group treat other members with no respect	.77
2. Group Self-Awareness		
Seeking feedback	Learning how others evaluate our performance is not a top priority	.48
Seeking feedback	We are continuously changing in response to feedback (R)	.60
Team self-evaluation	We do not evaluate our group and its performance	.56
Team self-evaluation	We often compare ourselves to other groups to see how we are performing (R)	.49
Team self-evaluation	We don't spend time evaluating our own work	.56
Seeking feedback	I don't get feedback from other members as to how I'm performing	.41
3. Group Self-Regulation		
Creating resources for emotion	In our meetings we try to save time to talk about frustration or other emotions (R)	.53
Creating resources for emotion	Group members are careful not to let feelings enter into any discussions	.41
Creating resources for emotion	We don't make time in our group to let people discuss their frustrations	.60

Creating resources for emotion	If someone in our group seems blue, we respect their privacy and don't ask what's wrong	.61
Creating resources for emotion	If someone in our group seems blue, we ask them what is wrong (R)	.71
4. Group Social Awareness		
Organizational awareness	The people in our group can easily explain how decisions are made in this company (R)	.62
Intergroup awareness	We don't know much about other groups in this company	.41
Organizational awareness	Our group works the system well (R)	.51
Intergroup awareness	People in our group can describe what other groups in this organization need (R)	.57
Organizational awareness	It is unclear to us why many of the decisions are made in this organization	.66
Organizational awareness	In our group we understand how our work tasks fit into the larger picture (R)	.55
Organizational awareness	It isn't clear how our work impacts the big picture	.62
5. Group Social Skills		
Building relationships	If another group needs our help we try to assist them (R)	.64
Building relationships	Helping other groups often slows us down so we try not to get involved in their problems	.64
Ambassadorial orientation	Members of our group meet with others to get support for our work (R)	.55
Building relationships	We don't consider having good relationships with other groups a priority	.69
Ambassadorial orientation	We do not often use the input from other groups as a resource	.73
Building relationships	Other groups know that if they need our assistance or advice we will give it to them (R)	.73
Building relationships	We don't usually have time to help other groups	.70

Table 6
Means, Standard Deviations, and Reliabilities of Factor Scores

	Scale	No. of items	M	SD	α
1	Group regulation of members	4	18.91	5.77	.79
2	Group self-awareness	6	28.30	6.10	.70
3	Group self-regulation	5	22.28	5.42	.71
4	Group social awareness	7	33.50	6.83	.74
5	Group social skills	7	35.45	7.47	.83

Results of a MANOVA revealed a statistically significant overall main effect of group, Wilks' Lamba=.001, $F(561, 1817)=1.95$, $p<.001$. Specifically, group differences were found on Perspective taking**,** $F(33, 131)=3.99$, $p<.001$; Interpersonal understanding**,** $F(33, 131)=2.94$, $p<.001$; Confronting members who break norms, $F(33, 131)=3.25$, $p<.001$; Caring orientation, $F(33, 131)=2.95$, $p<.001$; Team self-evaulation, $F(33, 131)=2.96$, $p<.001$; Seeking feedback, $F(33, 131)=1.98$, $p<.01$; Creating resources for working with emotion, $F(33, 131)=3.08$, $p<.001$; Creating an affirmative environment, $F(33, 131)=2.39$, $p<.001$; Proactive problem solving, $F(33, 131)=3.42$, $p<.001$; Organizational awareness, $F(33, 131)=2.98$, $p<.001$; Intergroup awareness, $F(33, 131)=3.08$, $p<.001$; Building relationships, $F(33, 131)=3.15$, $p<.001$; Ambassadorial orientation, $F(33, 131)=2.66$, $p<.001$. In addition group differences were found on Hemphill's (1956) subscale Control, $F(33, 131)=1.71$, $p<.05$; Intimacy, $F(33, 131)=3.68$, $p<.001$; Hedonic tone, $F(33, 131)=2.10$, $p<.01$; Viscidity, $F(33, 131)=4.00$, $p<.001$.

Following completion of the reliability calculations, group mean scores for the ten reliable competencies (perspective taking, interpersonal understanding, caring orientation, team self awareness, creating resources, creating an affirmative environment, problem solving, interteam awareness, interorganizational awareness, building external relationships) and for confronting members who break norms were calculated. Six groups clearly emerged with scores higher than the other 28 groups in five or more of the competencies and four groups emerged with scores lower than the other 30 groups in five or more of the competencies. For each of these groups, the number of people in the group, number of responses to the questionnaire, average age and length of membership of responding members, sex and race of members was determined. Results for high scoring groups are reported in table 7 and results for low scoring groups are reported in table 8.

Based on the data reported, results indicate that the high-scoring groups have on average fewer members than their low-scoring counterparts (7 and 22 respectively), have proportionally fewer women (39% rather than 50%), are on average a little younger (32 years and 41 years respectively) and are no different on race. Higher group EI groups also had a higher response rate and fewer data points left unreported. Also, with the exception of the research group, high-scoring groups are all service groups whose main task is to provide direct services to a client group. The low-scoring groups, by contrast, are less service and more creative/intellectual groups. The quality of their performance is judged less on their service to and interaction with client groups than on the creativity and beauty of their final product.

Table 7

High Scoring Groups and Their Reported Characteristics

Title	High-scoring competencies	Response rate (%)	No. in group	No. reporting	Length of membership (avg. years)	Avg. age (years)	Sex	Race
Sex Educators	All	50	4	2	3.5	25	2 female	2 white
Computer help desk	Perspective taking, interpersonal understanding, confronting members, team self-assessment, creating resources, creating an affirmative environment, interteam awareness, organizational awareness, building relationships	100	3	2	.5	35	1 male, 1 female	2 white
Computer services	Team self-awareness, problem solving, interteam awareness, organizational awareness, building external relationships	93	15	14	12	35	10 male, 4 female	1 black, 12 white, 1 unknown
Social service leaders	Creating an affirmative environment, problem solving, interteam awareness, organizational awareness, building external relationships	86	7	6	2.8	28	3 male, 2 female, 1 unknown	1 black, 3 white, 2 hispanic
Clinical case managers	Perspective taking, interpersonal understanding, creating resources, creating an affirmative environment, problem solving	33	6	2	1.16	30	1 male, 1 female	1 white, 1 unknown
Research group	Caring orientation, creating an affirmative environment, interteam awareness, organizational awareness, building external relationships	50	4	2	1.5	40	1 male, 1 female	1 hispanic, 1 white
Average Totals		69	7	5	4	32		

Table 8
Low Scoring Groups and Their Reported Characteristics

Title	Low-scoring competencies	Response rate (%)	No. in group	No. reporting	Length of membership (Avg. years)	Avg. age (years)	Sex	Race
Planners/ urban designers	All	40	10	4	3	35	2 male, 1 female, 1 unknown	1 hispanic, 2 white, 1 unknown
Faculty/ staff group 3	Perspective taking, interpersonal understanding, confronting members, caring orientation, creating resources, creating an affirmative environment, problem solving, interteam awareness, organizational awareness, building external relationships	66	45	2	4.5	40	1 male, 1 female	2 white
Choir	Perspective taking, confronting members, problem solving, interteam awareness, building external relationships	58	12	7	1.3	45	2 male, 5 female	7 white
Architects	Perspective taking, interpersonal understanding, confronting members, team self awareness, interteam awareness	25	20	5	4	45	2 female, 3 unknown	2 white, 3 unknown
		47	22	5	3	41		

CHAPTER IV

DISCUSSION

Summary of findings and theoretical implications

The results of this study support the model of Group Emotional Intelligence proposed by Druskat and Wolff (2000, 2001a, 2001b). Of their thirteen original competencies, eight emerged as reliable (perspective taking, caring orientation, seeking feedback, creating resources for working with emotion, creating an affirmative environment, organizational awareness, intergroup awareness, and building relationships), two emerged with reliabilities close to .7 (interpersonal understanding and proactive problem solving), two were combined with related subscales to increase their reliability (team self-evaluation and ambassadorial orientation) and the last, confronting members who break norms, was unreliable. Results also indicate that the Group EI instrument distinguishes between groups on these competencies, with greater variance between than within the groups. Preliminary data for convergent and divergent validity are promising. With the exception of confronting members who break norms and control, correlations with Hemphill's subscales emerged as expected providing the relevant validity, although additional study is necessary. Also, of the six underlying dimensions, five emerged in a factor analysis: group regulation of members, group self-awareness, group self-regulation, group social awareness, and group social skills.

The combination of several of the competency subscales has some interesting implications for the development of the group EI theory. In both their article and their chapter, Druskat and Wolff (2001a; 2001b) combined ambassadorial orientation and building relationships into one competency: building external relationships. The data from this study would support that decision, as the correlation between these subscales was quite large (r=.70) and the combining of these two subscales resulted in greater reliability than either of the subscales alone. Similarly, team self-evaluation and seeking feedback had a large correlation (r=.68) and were more reliable when combined than when maintained separately. These findings suggest that team self-evaluation and seeking feedback, and building relationships and ambassadorial orientation are not separate competencies but are one, reducing the four competencies originally identified by Druskat & Wolff (2000) to two.

Druskat & Wolff (2001a) also combined intergroup awareness and organizational awareness, but the results of this study would indicate that such a combination is premature. Indeed intergroup and organizational awareness emerged as reliable unto themselves, without any necessary combination and, although correlated (r=.50), were not so highly correlated as to indicate that they are measuring the same thing.

The lack of reliability and of correlational data for confronting members who break norms indicates that the scale as it currently stands is inadequate. It would be premature, however, to drop the theoretical construct from the model, without first revising the scale as suggested and collecting additional data. Indeed, Druskat &

Wolff's (2001a; 2001b) definition of the construct makes no suggestion of specific norms about which individual members would be confronted and a new scale should be general enough to allow members to identify confronting behaviors without having to acknowledge or deny specific norms.

Based on the results of this study the group EI model can be revised, reducing the number of overall competencies from 13 to 11—interpersonal understanding, perspective taking, confronting members who break norms, caring orientation, team self-assessment, creating resources for working with emotion, creating an affirmative environment, proactive problem solving, intergroup awareness, organizational awareness, and building external relationships. This is by no means a final product. Further research must be conducted to determine if there are greater reliabilities for interpersonal understanding and proactive problem solving and to revise and reassess confronting members who break norms. In addition, although divergent validity was acquired within this data set for all of the competencies, convergent was only present for three: interpersonal understanding, caring orientation, and creating an affirmative environment. Future research should provide additional convergent validity data to clarify what it is that each of the other subscales is measuring.

The confirmation of five reliable factors underlying the competencies provides additional support for Druskat and Wolff's (2000; 2001a; 2001b) theory. A closer analysis of subscale items within the factors offer some interesting supplementary information about what competencies from the Group EI scale feature prominently in the dimensions (table 5).

A review of the items in factor 1, Group Regulation of Members, reveals that of the four, two were from caring orientation, one was from confronting members who break norms and one was from perspective taking. Although the perspective taking competency does not theoretically fall within Group Regulation of Members, the item is consistent with caring orientation, as the valuing of all members' opinions in decision making communicates affection, appreciation, and respect for members. The Group Regulation of Members factor, therefore, is heavy on caring orientation. This may change with the improvement of items in the confronting members who break norms scale, allowing for additions to the factor from this competency. Also of note is that the items in Group Regulation of Members are all negatively worded. This suggests that perhaps group members are more attentive to the absence of a caring orientation and confronting members than they are to its presence.

In factor 2, there are three items from seeking feedback and three from team self-evaluation (table 5). The even distribution of subscale items within the factor would seem to offer no contradiction that the factor is indeed measuring Group Self-Awareness and its related underlying competencies. Review of the items indicates that this factor is measuring the group's awareness of its performance as reflected in the group's tendency to look inward and evaluate self and to seek feedback.

In factor 3, Group Self-Regulation, the five items that emerged as part of the factor were entirely drawn from the competency creating resources for working with emotion (table 5). Creating an affirmative environment and proactive problem solving were not represented. As a result, factor 3 may be more closely related to intimacy or

the collective belief of trust proposed in the model than Group Self-Regulation. A review of the items indicates that this factor is measuring the group's regulation of explicit expression and legitimization of the discussion of feelings in the group context.

The presence of two intergroup awareness and five organizational awareness items in factor 4, Group Social Awareness, suggests that the factor is indeed measuring the hypothesized dimension, although it is a little heavy on the organizational awareness end. Review of the items indicates that the factor is measuring the group's awareness of other groups, and the larger organization and its role within it.

Lastly, the representation of items from both underlying competencies in factor 5, Group Social Skills, provides preliminary data of the validity of the construct. Within the factor, there are two items from ambassadorial orientation and five from building relationships, all demonstrating that the Group Social Skills factor reflects the efforts of the group to extend its relations across group boundaries and toward other groups.

It is interesting to note that factors 4 and 5, although both falling within the cross-boundary level of the dimensions of group emotional intelligence seem to focus on different cross-boundary relationships. Items in factor 4, Group Social Awareness, seem to focus mainly on the group's awareness of the larger organization and its role within it. Items in factor 5, on the other hand, seem to focus more on other groups as opposed to the larger organization. In their book chapter, Druskat and Wolff (2001b) had subdivided group social awareness into awareness of other teams (groups) and awareness of the larger organization. The competencies in Group Social Skills in the

model, however, did not seem to reflect the same clear distinction between organizational and group cross-boundary relationships. Indeed, the two competencies were eventually collapsed together, both in Druskat and Wolff's (2001a; 2001b) publications and in this study, suggesting there is no clear distinction between the two. This does not mean, however, that such a distinction does not exist. It is possible that, given the opportunity, tests takers would identify distinct Group Social Skills, one in relation to organizations and one in relation to groups, just as they identified distinct Group Social Awareness competencies. The delineation between organizational and group cross-boundary competencies found within the factors suggests that consideration of teams and organizations as separate elements at the cross-boundary level is indeed practical and that the combination of intergroup awareness and organizational awareness is untenable.

There may be some question as to why five rather than six factors emerged. It is possible that the remaining factor, Group Awareness of Members, did not emerge because of the difficulty in isolating awareness of members from the other five dimensions. Awareness of members is characterized by two competencies: perspective taking and interpersonal understanding. In their discussion of perspective taking, Druskat and Wolff (2001b) indicate that consideration of alternative points of view is essential for successful problem solving. This may cause perspective taking items to be confounded with those associated with the competency proactive problem solving in the Group Self-Regulation dimension of the model. In addition, caring orientation, defined by Druskat and Wolff (2001b) as "communicating positive regard, appreciation, and

respect" (p. 142), may well be expressed via the behaviors associated with perspective taking. Caring orientation falls within the Group Regulation of Members dimension.

Interpersonal understanding is defined as "the accurate understanding of the spoken and unspoken feelings, interests, concerns, strengths, and weaknesses of group members" (Druskat & Wolff, 2001b, p. 141). Items aimed at revealing the aspect of interpersonal understanding that reflects understanding of the spoken and unspoken feelings of individual members may be indistinguishable from those items in creating resources for working with emotion, one of the competencies in group self-regulation. Creating resources for working with emotion is defined as the "effective interpretation of and response to emotional stimuli by providing resources that encourage the recognition of emotional stimuli and that help members discuss how they feel about those stimuli" (Druskat & Wolff, 2001b, pp. 147). Effective interpretation and response to emotional stimuli could conceivably be impossible to differentiate from the accurate understanding of feelings.

These apparent interrelationships between the theoretically defined competencies of Group Awareness of Members and those of the other five dimensions may make it difficult to isolate Group Awareness of Members as a separate and unique construct and may cause Group Awareness of Members' items to weigh on more than one factor. In fact, those items from this dimension that did weigh uniquely were scattered between several of the factors. Before the removal of items from the factors on a theoretical basis, four items from the Group Awareness of Members dimension

weighed uniquely on three of the five factors: Group Regulation of Members, Group Self-Regulation, and Group Social Awareness (Appendix J).

The differences between high-scoring groups and low-scoring groups on the instrument provide some interesting preliminary data for further research. Differences appeared in group size, type of task, response rates and data points left unreported, gender distribution, and average age.

Group size clearly appears to be associated with Group EI, with the highest-scoring groups emerging as smaller than their low-scoring counterparts. The smaller size may be more conducive to the discussion of emotion and intimate knowledge of other members associated with group EI. As the number of individuals in the group increases, members may find it more difficult to develop intimate knowledge of every other member. Without this sense of intimacy, emotional discussion may begin to feel less safe for individual members and the recognition of the emotions of members or the group as a whole more difficult. As a result, the development of group EI norms may be less likely.

Like group size, the distinction between level of group EI and type of task is not altogether surprising. Those groups whose purpose it is to serve the needs of others will likely find that increased consciousness of the emotions in themselves and others and increased emotional regulation of the emotions of themselves and others will lead to better performance in the task. For this reason, it is likely that such service groups receive an emphasis in their training and supervision on attendance to emotion. In the case of the clinical case managers (table 7), for example, clinical training is often

characterized by exploration of emotion in self and others and supervision often contains some element of emotional examination. By contrast, the creative/intellectual tasks found in the low-scoring groups would typically have greater emphasis on the production of an artistic or intellectual final product than on service and interaction with client groups. This may result in a lowered emphasis on the importance of emotional awareness and regulation to the performance of the task. Indeed during feedback to the choir, one choir member remarked that there is little interaction between individual members and that individual input is even sometimes harmful to the final product. Members, she said, must subordinate their individuality and emotions to the demands of their conductor and subsequently the music.

These differences in type of task may provide the foundation for competency models at the group level. It is possible that creative/intellectual task groups require less elevated group EI across all competencies and rather elevations in just a few. In contrast, service groups may require elevations across all competencies for effective performance. These differences should be reflected in competency models according to task group.

The gender, age, and race distributions found within these high and low-scoring groups cannot be fully appreciated without an understanding of response rates and unreported data. Groups with low scores in Emotional Intelligence had lower response rates and greater amounts of unreported data. It is likely that those who failed to report demographic characteristics were members of a minority, as their minority status in the group may make them more easily identifiable and subsequently make their responses

less anonymous. By leaving demographic information blank, participants are able to protect their identities. Such behavior may be a reflection of the level of security individuals within the group experience in regard to their own opinions. It is interesting that in the highly emotionally intelligent groups, only two opted to leave their races unknown and only one left his/her gender unknown, indicating that anonymity may have been less of a concern for members of these groups. The lower average response rate in the low-scoring groups may be further evidence of the lack of security of members. As individuals feel less comfortable about expressing their feelings in regard to group they will be more likely to opt to say nothing. In addition, the lowered response rates may be reflective of individuals' perceptions of the importance of their perspectives. Groups with lower EI are less likely to demonstrate respect and appreciation for individual members' perspectives and input. The differences in response rates and unreported data between high and low-scoring groups may therefore also be taken as data on the groups' emotional intelligence norms.

The response rates and the amount of unreported data make it difficult to clearly understand demographic differences between high and low scoring groups. The findings herein, when demographic data was reported, are limited to those group members who opted to fill out the questionnaire. For this reason it is difficult to draw any conclusions about the overall demographic make-up of the groups in question. Non-respondents may have been proportionally underrepresented by those group members who did choose to respond, thereby skewing the demographic data. The discussion to follow, therefore, should be read with this in mind.

It could be hypothesized that the differences in age between high and low scoring groups may be reflective of generational differences in the acceptability of emotional discussion and exploration. Those who came of age in the 1980s and 90s will have found emotional expression more acceptable in the public arena than those who came of age in the 1950s. Although this may be true, it is important to note that the difference in average age between high and low scoring groups found in this study is less than a decade, making such an explanation less plausible. Further research in this area may show greater age differences than those demonstrated here, or such differences may disappear in larger samples.

The gender differences are more interesting and less easy to explain. The popular assumption is that women are more emotionally intelligent than men because they are more emotionally in tune with those around them. Subsequently, it might be assumed that groups of women would be more emotionally intelligent than groups of men. Although there is some evidence that women are higher in empathy, more aware of their emotions and more skilled interpersonally, men are more self-confident, optimistic and adaptive (Goleman, 1998), indicating that they are by no means less emotionally intelligent than their female counterparts. This also indicates that individual males and females may have somewhat different competency profiles, excelling and being less developed in different competencies. It is possible that these differences also appear in group emotional intelligence. Indeed, a closer review of the two higher scoring groups with greater numbers of males (computer services and social service leaders) demonstrates that their elevated competencies are largely at the cross-boundary

level; both are high in intergroup awareness, organizational awareness, and building external relationships. At the group level, both are also high in problem solving (table 7). A review of the low-scoring group with greater numbers of females (choir) reveals that it is three of these competencies in which the group is deficient: problem solving, intergroup awareness, and building external relationships (table 8). This may be indicative of gender differences in elevated EI competencies of groups similar to those found in individuals. It would be interesting to explore if those group EI competencies more elevated in male groups are more valued in work settings and subsequently are more likely to be developed. This may provide an explanation for the higher levels of group EI in groups with greater proportions of males.

Lastly, although the data appear to demonstrate that there is no difference in racial diversity between high and low scoring groups, one needs to be cautious in making any conclusions. Note that in a number of instances, respondents failed to indicate their race, and there were fewer respondents than members in the groups which may hide diversity where it does exist.

Implications for practice

In their chapter, Druskat and Wolff (2001b) argue that in order for groups to be effective in carrying out their tasks, they need the fundamental characteristics of cooperation and collaboration. These characteristics are predicted by the collective beliefs of trust, group identity, and group efficacy which, in turn, are developed via group emotional intelligence. According to their theory, practitioners interested in enhancing the effectiveness of groups will want to focus their assessment and

interventions on group emotional intelligence. This will improve effective interactions within the group and between groups and will ultimately foster the cooperation and collaboration necessary for strong performance.

In this study, the reliability and validity data found for the Group EI competencies identified in Druskat and Wolff's (2000, 2001a, 2001b) theory as essential for the development of trust, group identity, and group efficacy provide practitioners with a starting point for conducting assessments and interventions on emotional intelligence at the group level. The Group EI instrument developed here is currently the only instrument available that measures all the elements of Group EI and is one of the few group measurement instruments with reliability and validity data.

In feedback to participating groups in this study, a number of benefits of the use of the instrument emerged. The managing partner in the architectural firm from which three groups came, felt the descriptive material that resulted from the test was invaluable in working with these groups. The findings were exactly as he would have predicted and the instrument results and associated theory gave him and his groups the language to speak about those characteristics they felt were impeding their performance progress. The more specific language allowed greater clarity in discussion and subsequently enhanced the potential for EI development. Members of the choir indicated that the results enabled them to look more closely at roles within the group and resulted in a frank discussion with their conductor as to his and their expectations of one another.

Although little research has thus far been conducted on emotional intelligence at the group level, it seems logical to assume that group EI would mirror individual EI in its utilization and connection to performance. At the individual level, Spencer and Spencer (1993) have proposed that the nature of the tasks in a given profession requires specific combinations of competencies to excel. For example, it has been determined that extremely high levels of optimism greatly increase the potential for success in sales personnel (Seligman, 1998), and such high levels are not as essential for managers (Spencer & Spencer, 1993). Similarly, the nature of the tasks in a given group would require elevation of specific EI competencies over others. Practitioners will want to conduct a preliminary assessment to determine the emotional intelligence competencies essential to performance in the group in question. Such an assessment can be conducted through the administration of the group EI instrument to top performing and average performing groups with the same tasks and comparison of the results. The profiles of top performing groups on the group EI instrument will provide a prototype for development of group EI in similar task groups. Following this identification of the relevant dimensions, practitioners can assess the group in question and plan their interventions according to those characteristics of the prototype which need elevation and those which need reduction for optimal performance in the client group.

Limitations of the study

A number of weaknesses in the questionnaire itself were identified by participants following their participation in the study and may have affected results. First, participants indicated that the instructions on the Group Emotional Intelligence

instrument did not indicate what to do if questions do not apply to the group under review. In some instances, participants followed the instructions on the instrument preceding the Group EI instrument, namely Hemphill's (1956), which indicated that irrelevant questions should be left blank. Other participants indicated that they responded to irrelevant questions by circling "4" or "neutral." These differing responses in the same instances will have contributed to error in the results. The instrument should be revised so as to avoid this confusion in the future and to ensure that members of the same group are answering irrelevant questions in the same manner.

Second, participants indicated that within group responses to questions about other groups may have varied by frame of reference. A number of items on the Group EI questionnaire make statements about "other" groups, groups outside of the group under review (for examples, see questions 12, 34, 51, 60 in Appendix B). Several participants in the same groups indicated that they used different "other" groups as frames of reference in answering this question. For example, in the organizational consulting team some used other groups in the larger organization of which they are a part, some other consulting groups, some all groups including those outside of the organization, and some felt these questions did not apply because they could think of no other relevant groups. This may indicate a need to be more specific in questions dealing with other groups. Perhaps when the instrument is administered, the instructions should specify that the group first work together to determine what other groups are relevant to their work and should be a frame of reference, or perhaps "other groups" should be

identified as “other groups in this organization” or “other groups in this organization and/or with which we have contact.”

There were also limitations in the generalizability of the findings. Although a wide range of task groups was used from a range of geographical locations in the United States, the majority of respondents were white and fell between the ages of 21 and 50. In order to acquire greater generalizability of both the theory and the reliability and validity results, a more diverse sample must be used.

In addition, the use of Hemphill’s (1956) instrument to provide convergent and divergent validity data produced promising results, but additional data needs to be collected in order to determine the construct validity of the instrument. Eight of the eleven competencies have no convergent validity to date. In addition, the convergent validity findings for confronting members who break norms in this study are inconsistent with theory and subsequently their meaning for the construct validity is not entirely clear.

It has been argued that much greater numbers are required for an accurate factor analysis (Cattell, 1978; Comrey & Lee, 1992). The issue of sample size in factor analysis is an area that is currently in great dispute and recommended sample sizes vary widely. Although the sample size for this study fell within the range of those deemed adequate by several researchers (Arrindell & van der Ende, 1985; Barrett & Kline, 1981; Gorsuch, 1983; Kline, 1979), it could be argued that N was insufficient for an accurate extraction of factors. To that end, it is suggested that additional studies be

performed with the original version of the Group Emotional Intelligence Questionnaire to determine if the findings in this research are replicable.

Lastly, it should be noted that the data used for comparison between high and low scoring groups was limited in scope and was largely restricted to the demographics of individual members. It is possible that other, more important relationships between group EI scores and group characteristics were overlooked. One important area to investigate further would be the impact of the organizational culture and context on group EI. A number of researchers have identified the power of the organizational system to influence individual and group processes and outcomes (Deming, 1986; Peterson & Speer, 2000). In addition, no information was gathered on the performance of these groups. A connection between group EI and quality of task performance should be established in order to fully appreciate the rationale behind developing group EI. The relationship between the organizational system, group performance, and the group EI of groups within it is an area untouched in this study and worthy of investigation.

Directions for future research

Future research should be conducted to address some of the limitations of this study. First, it is suggested that it is too early to reject outright the confronting members who break norms competency from the model and the instrument. Revisions of the scale need to be made and further research conducted before a final determination of the viability of such a construct is made. Also, the instructions for the instrument should be revised in order to address the issues raised by participants in this study of frame of reference for other groups and strategies for answering irrelevant questions. Then, in

order to strengthen and further validate the findings reported here, additional administration of the original instrument to more diverse populations with a larger N and a factor analysis of the results would be useful to determine if the findings in this study can be replicated and similar conclusions drawn.

In addition, efforts should be made to incorporate other instruments for validation into future research. Specific attention should be directed at finding convergent validity for perspective taking, team self-assessment, creating resources for working with emotion, proactive problem solving, intergroup awareness, organizational awareness and building external relationships and at clarifying the underlying meaning of confronting members who break norms. After several studies produce additional factor and validity data, the official version of the instrument can be finalized.

With a group EI instrument supported by the findings of several studies, researchers can begin to focus their attention on the development of competency models for group emotional intelligence similar in theory to those developed at the individual level. It is suggested that, as with individuals, the performance of specific tasks in a group requires the development and maintenance of specific competencies. Different groups with different tasks may require different levels of competencies for effective performance. Researchers will want to investigate specific task groups and, following a diagnostic model similar to that used by Spencer and Spencer (1993) and the Consortium for Research on Emotional Intelligence (1999), compare high performing groups to low or average performing groups on the emotional dimensions identified in the group EI instrument. Determination of optimal levels of each dimension for

different task groups will be necessary for the development of group competency models. Ultimately, it will be these models that practitioners will use when working with client groups.

Researchers may also want to expand the exploratory study of characteristics associated with group EI performed here. Additional investigation of age, gender, and racial diversity differences should be conducted in an effort to better understand their relationships with group EI. Such knowledge may help practitioners to consider individual demographics when putting together work groups. Similarly, investigation of the impact of organizational characteristics on group EI may help practitioners to determine at what level on which to intervene. And lastly, researchers will want to draw a clear connection between group EI and performance. Only with this connection will the rationale behind creating competency models and developing group EI in task groups become clear.

References

Abraham, I.L. & Foley, T.S. (1984). The work environment scale and the ward atmosphere scale (short forms): Psychometric data. Perceptual and Motor Skills, 58, 319-322.

Arrindell, W.A. & Ende, J. van der (1985). An empirical test of the utility of the observations-to-variables ratio in factor and components analysis. Applied Psychological Measurement, 9(2), 165-178.

Bales, R.F. (1950). Interaction Process Analysis: A method of the study of small groups. Cambridge, MA: Addison-Wesley.

Baron, R.A. & Markman, G.D. (2000). Beyond social capital: How social skills can enhance entrepreneurs' success. Academy of Management Executive, 14(1), 106-115.

Barrett, P.T. & Kline, P. (1981). The observation to variable ratio in factor analysis. Personality Study in Group Behavior, 1, 23-33.

Bion, W.R. (1961). Group dynamics: A review. International Journal of Psychoanalysis, 33, 235-247.

Bogardus, E.S. (1959). Social distance. Yellow Springs, Ohio: Antioch Press. Cited in D.C. Miller (1976) Handbook of research design and social measurement. New York: David McKay Company, Inc.

Cattell, R.B. (1978) The scientific use of factor analysis in behavioral and life sciences. New York: Plenum Press.

Comrey, A.L. & Lee, H.B. (1992) A first course in factor analysis. Hillsdale, NJ: Erlbaum.

Consortium for Research on Emotional Intelligence (1999). The business case for emotional intelligence [on-line]. www.eiconsotirum.org/business.htm

Deming, W. Edward (1986) Out of the crisis. Cambridge, MA: Massachusetts Institute of Technology

Druskat, V.U. & Wolff, S.B. (2000). Group emotional competence and its influence on group effectiveness. Unpublished manuscript.

Druskat, V.U. & Wolff, S.B. (2001a). Building the emotional intelligence of groups. Harvard Business Review, March, 81-90.

Druskat, V.U. & Wolff, S.B. (2001b) Group emotional intelligence and its influence on group effectiveness. In C. Cherniss & D. Goleman (Eds.), The emotionally intelligent workplace: How to select for, measure, and improve emotional intelligence in individuals, groups, and organizations (pp. 132-156). San Francisco: Jossey-Bass.

Fisher, C.D. & Ashkanasy, N.M. (2000). The emerging role of emotions in work life: an introduction. Journal of Organizational Behavior, 21, 123-129.

Goleman, D. (1998). Working with emotional intelligence. New York: Bantam Books

Goleman, D. (2001) An EI-based theory of performance. In C. Cherniss and D. Goleman (Eds.), The emotionally intelligent workplace (pp. 27-44). San Francisco, CA: Jossey-Bass

Gorsuch, R.L. (1983). Factor analysis. Hillsdale, NJ: Erlbaum.

Hare, A.P. (1976). Handbook of small group research. New York: The Free Press

Hartley, P. (1997) Group communication. New York: Routledge.

Hemphill, J.K (1956). Group dimensions: a manual for their measurement. Columbus, OH: Ohio State University.

Hirokawa, R.Y., Giuran, D.S. & Martz, A.E. (1988). Understanding the sources of faulty group decision making: A lesson from the Challenger disaster. Small Group Behavior, 19, 411-433.

Kline, P. (1979). Psychometrics and psychology. New York: Academic Press Incorporated.

Likert, R. (1967). The human organization: Its management and value. New York: McGraw-Hill.

Lubin, B. & Harrison, R.L. (1964). Predicting small group behavior with the Self-Disclosure Inventory. Psychological Reports, 15, 77-78.

Miller, D. C. (1976). Handbook of research design and social measurement. New York: David McKay Company.

Moorhead, G., Ference, R., & Neck, C. (1991). Group decision fiascoes continue: Space Shuttle Challenger and a revised group think framework. Human Relations, 44(6), 539-551.

Moos, R.H. (1972). Assessment of the psychosocial environments of community-oriented psychiatric treatment programs. Journal of Abnormal Psychology, 79(1), 9-18.

Moos, R.H. (1974). Evaluating treatment environments. New York: Wiley. Cited in I.L. Abraham & T.S. Foley (1984) The work environment scale and the ward atmosphere scale (short forms): Psychometric data. Perceptual and Motor Skills, 58, 319-322.

Moos, R.H. (1981). Group Environment Scale manual. Palo Alto, California: Consulting Psychologists Press. Cited in C.S. Hartsough & J.M. Davis (1986) Dimensions of the Group Environment Scale. American Journal of Community Psychology, 14(4), 371-375.

Moos, R.H. & Insel, P. (1974) Preliminary manual for the Work Environment Scale. Palo Alto, California: Consulting Psychologists Press. Cited in I.L. Abraham & T.S. Foley (1984) The work environment scale and the ward atmosphere scale (short forms): Psychometric data. Perceptual and Motor Skills, 58, 319-322.

Peterson, N.A. & Speer, P. (2000). Linking organizational characteristics to psychological empowerment: Contextual issues in empowerment theory. Administration in Social Work, 24(4), 39-58.

Rubin, A. & Babbie, E. (1997). Research methods for social work. New York: Brooks/Cole Publishing Company.

Schwartz, T. (2000). “How do you feel?” Fast Company Magazine [on-line]. http://www.fastcompany.com/online/35/emotion.html.

Seligman, M.E. (1998). Learned optimism: How to change your mind and your life. New York: Booket Books.

Shaw, M.E. (1981). Group dynamics. New York: McGraw-Hill.

Spencer, L.M. & Spencer, S.M. (1993). Competence at work: Models for superior performance. New York: John Wiley & Sons.

Stock, D. & Lieberman, M.A. (1974). Methodological issues in the assessment of total-group phenomena in group therapy. In G.S. Gibbard, J.J. Hartman, & R.D. Mann (Eds.) Analysis of groups: Contributions to theory research and practice (pp. 57-74). San Francisco: Jossey-Bass.

Stock, D. & Thelan, H.A. (1958). Emotional dynamics and group culture: Experimental studies of individual and group behavior. New York: New York University Press. Cited in: A.P. Hare (1976) Handbook of small group research. New York: The Free Press.

Thorndike, E.L. (1920) A constant error in psychological ratings. Journal of Applied Psychology, 4, 25-29.

Weiss, H.M. & Cropanzano, R. (1996). Affective events theory: A theoretical discussion of the structure, causes, and consequences of affective experiences at work. Research in Organizational Behavior, 18, 1-74.

Wharton Risk Management and Decision Processes Center (2000). About the Wharton Risk Management and Decision Processes center [on-line]. http://grace.wharton.upenn.edu/risk/core.html .

Appendix A

Group Dimensions Description Questionnaire

Directions: Record your answer to each of the items for the group you are describing. In considering each item, go through the following steps:

1. Read the item carefully.
2. Think about how well the item tells something about the group you are describing.
3. After each question you will find the numbers 1, 2, 3, 4, and 5.
   If the item you are considering tells something about the group that is definitely true, circle 1.
   If the item you are considering tells something that is mostly true, circle 2.
   If the item tells something that is to an equal degree both true and false, or you are undecided about whether it is true or false, circle 3.
   If the item you are considering tells something that is mostly false, circle 4.
   If the item you are considering tells something about the group that is definitely false, circle 5.
4. In rare cases where you believe that an item does not apply at all to the group or you feel that you do not have sufficient information to make any judgment concerning what the item tells about the group, leave that item blank.
5. After you have completed one item, proceed to the next one in order. You may have as long as you need to complete your description.

Questions:

The questions that follow make it possible to describe objectively certain characteristics of social groups. The items simply describe characteristics of groups; they do not judge whether the characteristic is desirable or undesirable. Therefore, in no way are the questions to be considered a "Test" either of the groups or of the person answering the questions. We simply want an objective description of what the group is like.

		Definitely true Mostly true Neutral Mostly false Definitely false
1	The group has well understood but unwritten rules concerning member conduct	1 2 3 4 5
2	Members fear to express their real opinions	1 2 3 4 5
3	The only way a member may leave the group is to be expelled	1 2 3 4 5
4	No explanation need be given by a member wishing to be absent	1 2 3 4 5
5	An individual's membership can be dropped should he or she fail to live up to the standards of the group	1 2 3 4 5
6	Members of the group work under close supervision	1 2 3 4 5
7	Only certain kinds of ideas may be expressed freely within the group	1 2 3 4 5
8	A member may leave the group by resigning at any time he or she wishes	1 2 3 4 5
9	A request made by a member to leave the group can be refused.	1 2 3 4 5
10	A member has to think twice before speaking in meetings	1 2 3 4 5

		Definitely true	Mostly true	Neutral	Mostly false	Definitely false
11	Members are occasionally forced to resign	1	2	3	4	5
12	The members of the group are subject to strict discipline	1	2	3	4	5
13	Each member's personal life is known to other members	1	2	3	4	5
14	Members of the group lend each other money	1	2	3	4	5
15	A member has the chance to get to know all other members	1	2	3	4	5
16	Members are not in close enough contact to develop likes or dislikes for one another	1	2	3	4	5
17	Members of the group do small favors for one another	1	2	3	4	5
18	All members know each other very well	1	2	3	4	5
19	Each member of the group knows all other members' full names	1	2	3	4	5
20	Members are in daily contact either outside or within the group	1	2	3	4	5
21	Members of the group are personal friends	1	2	3	4	5
22	Certain members discuss personal affairs among themselves	1	2	3	4	5
23	Members of the group know the family backgrounds of other members of the group	1	2	3	4	5
24	Members address each other by their first names	1	2	3	4	5
25	The group is made up of individuals who do not know each other well	1	2	3	4	5
26	Personal dissatisfaction with the group is too small to be brought up	1	2	3	4	5
27	Members continually grumble about the work they do for the group	1	2	3	4	5
28	The group does its work with no great vim, vigor, or pleasure	1	2	3	4	5
29	A feeling of failure prevails in the group	1	2	3	4	5
30	There are frequent intervals of laughter during group meetings	1	2	3	4	5
31	There are two or three members of the group who generally take the same side on any group issue	1	2	3	4	5
32	Certain members are hostile to other members	1	2	3	4	5
33	There is constant bickering among members of the group	1	2	3	4	5
34	Members know that each one looks out for the other one as well as for him or herself	1	2	3	4	5
35	Certain members of the group have no respect for other members	1	2	3	4	5
36	Certain members of the group are considered uncooperative	1	2	3	4	5
37	There is a constant tendency toward conniving against one another among parts of the group	1	2	3	4	5
38	Members of the group work together as a team	1	2	3	4	5
39	Certain members of the group are responsible for petty quarrels and some animosity among other members	1	2	3	4	5
40	There are tensions among subgroups that tend to interfere with the group's activities	1	2	3	4	5
41	Certain members appear to be incapable of working in the group	1	2	3	4	5
42	There is an undercurrent of feeling that tends to pull the group apart	1	2	3	4	5

Appendix B

Group Emotional Intelligence Questionnaire

Directions:
This survey is about your experience with your group. The following pages contain a number of statements that describe groups in general. Thinking specifically about your group, please read each of the following statements and then indicate how much you believe they are true for your group by circling an answer ranging from completely agree to completely disagree.

There are no right or wrong answers on this questionnaire. Groups and the individuals within them typically vary in their responses. The survey is merely a measure of the way your group prefers to do things, and is aimed at understanding behaviors and needs that are characteristic of your group.

		Completely agree Mostly agree Somewhat agree Neutral Somewhat disagree Mostly disagree Completely disagree
1	The opinion of even our quietest members is actively sought	1 2 3 4 5 6 7
2	Unless someone came out and said it, group members wouldn't know if one of our group was upset	1 2 3 4 5 6 7
3	We grumble about members who behave inappropriately, but don't address them directly	1 2 3 4 5 6 7
4	Members of the group act in ways that show they care about each other	1 2 3 4 5 6 7
5	In our group, we often discuss what is helping or hurting our performance	1 2 3 4 5 6 7
6	Members of the group often provide one another with constructive criticism	1 2 3 4 5 6 7
7	When problems occur we wait for someone outside of our group to fix them	1 2 3 4 5 6 7
8	In our group, we never know who will find a task difficult	1 2 3 4 5 6 7
9	In our meetings, we try to save time to talk about frustration or other emotions	1 2 3 4 5 6 7
10	The people in our group can easily explain how decisions are made in this company	1 2 3 4 5 6 7
11	We don't know much about other groups in our company	1 2 3 4 5 6 7
12	If another group needs our help, we try to assist them	1 2 3 4 5 6 7
13	Our group often looks outside itself for support or resources	1 2 3 4 5 6 7
14	Only a few members' opinions carry any weight in decision-making	1 2 3 4 5 6 7
15	In our group, we know what tasks would be difficult for which members	1 2 3 4 5 6 7
16	Our group has well understood rules concerning member conduct, either written or unwritten	1 2 3 4 5 6 7
17	Some members treat other members badly	1 2 3 4 5 6 7
18	We try to be aware of the group's mood	1 2 3 4 5 6 7
19	Learning how others evaluate our performance is not a top priority	1 2 3 4 5 6 7

		Completely agree Mostly agree Somewhat agree Neutral Somewhat disagree Mostly disagree Completely disagree
20	Our group comes up with ways to solve those problems that others might say are out of our control	1 2 3 4 5 6 7
21	People get energized when working in our group	1 2 3 4 5 6 7
22	Group members are careful not to let feelings enter into any discussions	1 2 3 4 5 6 7
23	Our group works the system well	1 2 3 4 5 6 7
24	People in our group can describe what other groups in this organization need	1 2 3 4 5 6 7
25	Helping other groups often slows us down so we try not to get involved in their problems	1 2 3 4 5 6 7
26	Members of our group meet with others to get support for our work	1 2 3 4 5 6 7
27	In our group, most members' opinions are not sought before a decision is made	1 2 3 4 5 6 7
28	Certain members of the group treat other members with no respect	1 2 3 4 5 6 7
29	If a member behaves in a way that makes the rest of us uncomfortable, we confront him or her directly	1 2 3 4 5 6 7
30	Emotions are irrelevant to our ability to do the work	1 2 3 4 5 6 7
31	We are continuously changing in response to feedback	1 2 3 4 5 6 7
32	When something goes wrong we look at it as a challenge rather than an obstacle	1 2 3 4 5 6 7
33	We have certain words or phrases we use to label the moods that arise in our group	1 2 3 4 5 6 7
34	We don't consider having good relationships with other groups a priority	1 2 3 4 5 6 7
35	The perspectives of all members are considered useful to the group	1 2 3 4 5 6 7
36	We work to anticipate problems before they occur	1 2 3 4 5 6 7
37	There is so much bureaucracy in our organization that our group has trouble getting things done	1 2 3 4 5 6 7
38	Our group doesn't do a good job talking about our achievements with others	1 2 3 4 5 6 7
39	There is very little behavior that is considered unacceptable in our group	1 2 3 4 5 6 7
40	In our group we express our appreciation for team member effort	1 2 3 4 5 6 7
41	We do not evaluate our group and its performance	1 2 3 4 5 6 7
42	Our group often focuses on how the tasks we are given will be difficult to accomplish	1 2 3 4 5 6 7
43	We build relationships with groups that can help make a difference in our performance	1 2 3 4 5 6 7
44	People in our group keep their concerns hidden	1 2 3 4 5 6 7
45	Our group often asks others if they are satisfied with our performance	1 2 3 4 5 6 7
46	Negative thinking is discouraged in our group	1 2 3 4 5 6 7

		Completely agree Mostly agree Somewhat agree Neutral Somewhat disagree Mostly disagree Completely disagree
47	In any situation, our group could tell you what each member would be worried about	1 2 3 4 5 6 7
48	When dealing with problems, this group spends most of its time putting out fires	1 2 3 4 5 6 7
49	We don't make time in our group to let people discuss their frustrations	1 2 3 4 5 6 7
50	It is unclear to us why many of the decisions are made in this organization	1 2 3 4 5 6 7
51	We know what other groups need from us	1 2 3 4 5 6 7
52	We do not often use the input from other groups as a resource	1 2 3 4 5 6 7
53	Some members of our group consistently offer points of view that are not useful	1 2 3 4 5 6 7
54	When one of us is in a bad mood, people in the group notice	1 2 3 4 5 6 7
55	If someone isn't pulling his or her weight in our group, we ignore it	1 2 3 4 5 6 7
56	In our group, people admire each other's work	1 2 3 4 5 6 7
57	We often compare ourselves to other groups to see how we are performing	1 2 3 4 5 6 7
58	Our group does not change in response to constructive criticism	1 2 3 4 5 6 7
62	If someone in our group seems blue, we respect their privacy and don't ask what's wrong	1 2 3 4 5 6 7
63	In our group we understand how our work tasks fit into the larger picture	1 2 3 4 5 6 7
64	We don't know what other groups might want from us	1 2 3 4 5 6 7
65	When this group sets out on a task we often seek the advice of other groups	1 2 3 4 5 6 7
66	Other members' points of view are solicited prior to making a decision	1 2 3 4 5 6 7
67	We tell group members who aren't doing their fair share of the work to shape up	1 2 3 4 5 6 7
68	In this group people's efforts are unappreciated	1 2 3 4 5 6 7
69	We don't spend time evaluating our own work	1 2 3 4 5 6 7
70	Our group often brainstorms to figure out solutions to difficulties	1 2 3 4 5 6 7
71	Our group is highly effective in our work	1 2 3 4 5 6 7
72	I don't get feedback from other members as to how I'm performing	1 2 3 4 5 6 7
73	If someone in our group seems blue, we ask them what is wrong	1 2 3 4 5 6 7
74	It isn't clear how our work impacts the big picture	1 2 3 4 5 6 7
75	Our group is not concerned with the needs of other groups	1 2 3 4 5 6 7
76	Others in this organization do not meet our needs for equipment or facilities	1 2 3 4 5 6 7
77	We don't usually have time to help other groups	1 2 3 4 5 6 7
78	We understand other groups in our organization	1 2 3 4 5 6 7

Appendix C

Demographic Information Questionnaire

Below are a few questions about your group. Please be as specific as possible, but don't include your name anywhere on this form.

What kind of work does your group do? _____

_____

What is the title of your group (if there is one)?

_____

Approximately how many people are in your group?

_____

Approximately how long have you been a member of this group?

_____

Below are some basic demographic questions about your own background. These are only for purposes of data analysis and will not be conveyed to anyone in your organization. Feel free to leave a blank where you wish.

What is your age? (please circle one)

Less than 20 21-30 31-40 41-50 51-60 61-70 71-80 80+

Are you _____Male or _____Female? (please check one)

Which group best describes you? (check all that apply)

_____Black/African-American
_____Asian/Pacific Islander
_____Native American or Alaska Native
_____Hispanic/Latino(a)
_____White/Non-Hispanic (includes Middle Eastern)
_____Other (please explain)_____

Appendix D

Group Emotional Intelligence Model

Level	Dimensions	Norms	Associated Questions on the Instrument
Individual	Group Awareness of Members	Perspective taking (asking others' points of view, willing to consider others' opinions)	• The opinion of even our quietest members is actively sought • Only a few members' opinions carry any weight in decision-making • In our group, most members' opinions are not sought before a decision is made • The perspectives of all members are considered useful to the group • Some members of our group consistently offer points of view that are not useful • Other members' points of view are solicited prior to making a decision
		Interpersonal understanding (understanding feelings, interests, concerns, strengths and weaknesses of members)	• Unless someone came out and said it, group members wouldn't know if one of our group was upset • In our group, we never know who will find a task difficult • In our group, we know what tasks would be difficult for which members • People in our group keep their concerns hidden • In any situation, our group could tell you what each member would be worried about • When one of us is in a bad mood, people in the group notice
	Group Regulation of Members	Confronting members who break norms (having rules of conduct, speaking up when a member does something out of line)	• We grumble about members that behave inappropriately, but don't address them directly • Our group has well understood rules concerning member conduct, either written or unwritten • If a member behaves in a way that makes the rest of us uncomfortable, we confront him or her directly • There is very little behavior that is considered unacceptable in our group • If someone isn't pulling his or her weight in our group, we ignore it • We tell group members who aren't doing their fair share of the work to shape up
		Caring orientation (communicating affection, appreciation, and respect for other members)	• Members of the group act in ways that show they care about each other • Some members treat other members badly • Certain members of the group treat other members with no respect • In our group we express our appreciation for team member effort • In our group, people admire each other's work • In this group people's efforts are unappreciated

Level	Dimensions	Norms	Associated Questions on the Instrument
Group	Group Self-Awareness	Team self-evaluation (evaluating self, including emotional states, strengths & weaknesses in interaction and operation)	• In our group, we often discuss what is helping or hurting our performance • We try to be aware of the group's mood • Emotions are irrelevant to our ability to do the work • We do not evaluate our group and its performance • We often compare ourselves to other groups to see how we are performing • We don't spend time evaluating our own work
		Seeking feedback (obtaining feedback from outside sources, giving feedback in group, attending to feedback)	• Members of the group often provide one another with constructive criticism • Learning how others evaluate our performance is not a top priority • We are continuously changing in response to feedback • Our group often asks others if they are satisfied with our performance • Our group does not change in response to constructive criticism • I don't get feedback from other members as to how I'm performing
	Group Self-Regulation	Creating resources for working with emotion (accept emotions as part of group and encourage expression and examination of feelings)	• In our meetings, we try to save time to talk about frustration or other emotions • Group members are careful not to let feelings enter into any discussions • We have certain words or phrases we use to label the moods that arise in our group • We don't make time in our group to let people discuss their frustrations • If someone in our group seems blue, we respect their privacy and don't ask what's wrong • If someone in our group seems blue, we ask them what is wrong
		Creating an affirmative environment (positive group affect, optimistic outlook, feelings of group efficacy)	• People get energized when working in our group • When something goes wrong we look at it as a challenge rather than an obstacle • Our group often talks about how the tasks we are given will be difficult to accomplish • Negative thinking is discouraged in our group • When something goes wrong, we get discouraged • Our group is highly effective in our work

Group		Proactive problem solving (taking initiative to change problem situations)	• When problems occur we wait for someone outside of our group to fix them • Our group comes up with ways to solve those problems that others might say are out of our control • We work to anticipate problems before they occur • When dealing with problems, this group spends most of its time putting out fires • All our problems are solved by one or two people in our group • Our group often brainstorms to figure out solutions to difficulties
Cross-Boundary	Group Social Awareness	Organizational awareness (understanding the socio-political system of which group is a part)	• The people in our group can easily explain how decisions are made in this company • Our group works the system well • There is so much bureaucracy in our organization that our group has trouble getting things done • It is unclear to us why many of the decisions are made in this organization • In our group we understand how our work tasks fit into the larger picture • It isn't clear how our work impacts the big picture
		Intergroup awareness (understanding the expectations and needs of other teams)	• We don't know much about other groups in our company • People in our group can describe what other groups in this organization need • We know what other groups need from us • We don't know what other groups might want from us • Our group is not concerned with the needs of other groups • We understand other groups in our organization
	Group Social Skills	Building relationships with external sources (help other teams, ensure positive contact with other groups)	• If another group needs our help, we try to assist them • Helping other groups often slows us down so we try not to get involved in their problems • We don't consider having good relationships with other groups a priority • We build relationships with groups that can help make a difference in our performance • Other groups know that if they need our assistance or advice, we will give it to them • We don't usually have time to help other groups
		Ambassadorial orientation (gather support and secure resources)	• Our group often looks outside itself for support or resources • Members of our group meet with others to get support for our work • Our group doesn't do a good job talking about our achievements with others • We do not use the input from other groups as a resource • When this group sets out on a task we often seek the advice of other groups • Others in this organization do not meet our needs for equipment or facilities

Appendix E

Hemphill's (1956) Four Subscales and their Associated Items

Subscale	Item #	Items
H1-Control	1	The group has well understood but unwritten rules concerning member conduct
	2	Members fear to express their real opinions
	3	The only way a member may leave the group is to be expelled
	4	No explanation need be given by a member wishing to be absent from the group
	5	An individual's membership can be dropped should he fail to live up to the standards of the group
	6	Members of the group work under close supervision
	7	Only certain kinds of ideas may be expressed freely within the group
	8	A member may leave the group by resigning at any time he wishes
	9	A request made by a member to leave the group can be refused
	10	A member has to think twice before speaking up in group meetings
	11	Members are occasionally forced to resign
	12	The members of the group are subject to strict discipline
H2-Intimacy	13	Each member's personal life is known to other members of the group
	14	Members of the group lend each other money
	15	A member has the chance to get to know all other members of the group
	16	Members are not in close enough contact to develop likes or dislikes for one another
	17	Members of the group do small favors for one another
	18	All members know each other very well
	19	Each member of the group knows all other members' full names
	20	Members are in daily contact either outside or in the group
	21	Members of the group are personal friends
	22	Certain members discuss personal affairs among themselves
	23	Members of the group know the family backgrounds of other members of the group
	24	Members address each other by their first names
	25	The group is made up of individuals who do not know each other well

Subscale	Item #	Items
H3-Hedonic Tone	26	Personal dissatisfaction with the group is too small to be brought up
	27	Members continually grumble about the work they do for the group
	28	The group does its work with no great vim, vigor, or
	29	pleasure
	30	A feeling of failure prevails in the group
		There are frequent intervals of laughter during group meetings
H4-	31	There are two or three members of the group who generally take the same side on any group issue
Viscidity	32	Certain members are hostile to other members
	33	There is constant bickering among members of the group
	34	Members know that each one looks out for the other one as well as for him or herself
	35	Certain members of the group have no respect for other members
	36	Certain members of the group are considered uncooperative
	37	There is a constant tendency toward conniving against one another among parts of the group
	38	Members of the group work together as a team
	39	Certain members of the group are responsible for petty quarrels and some animosity among other members
	40	There are tensions among subgroups that tend to interfere with the group's activities
	41	Certain members appear to be incapable of working as part of the group
	42	There is an undercurrent of feeling among members that tends to pull the group apart

Appendix F

Convergent and Divergent Validity Chart

Group Emotional Intelligence Instrument		Hemphill's Instrument		
		Convergence		Divergence
Competency	Associated Questions	Construct	Questions	Construct
Perspective taking (asking others' points of view, willing to consider others' opinions)	• The opinion of even our quietest members is actively sought • Other members points of view are solicited prior to a decision			All 13
Interpersonal understanding (understanding feelings, interests, concerns, strengths and weaknesses of members)	• Unless someone came out and said it, group members wouldn't know if one of our group was upset • In our group, we never know who will find a task difficult	Intimacy	• Each member's personal life is known to other members of the group • Members are not in close enough contact to develop likes or dislikes for one another	All 13, but intimacy
Confronting members who break norms (having rules of conduct, speaking up when a member does something out of line)	• We grumble about members that behave inappropriately, but don't address them directly • There is very little behavior that is considered unacceptable in our group	Control	• No explanation need be given by a member wishing to be absent from the group • The group has well understood but unwritten rules concerning member conduct	All 13, but control
Caring orientation (communicating affection, appreciation, and respect for other members)	• Members of the group act in ways that show they care about each other • Some members treat other members badly	Viscidity	• There is constant bickering among members of the group • Members of the group work together as a team	All 13, but viscidity
Team self-evaluation (evaluating self, including emotional states, strengths & weaknesses)	• In our group, we often discuss what is helping or hurting our performance • We try to be aware of the group's mood			All 13

Group Emotional Intelligence Instrument		Hemphill's Instrument		
		Convergence		Divergence
Competency	Associated Questions	Construct	Associated Questions	Construct
Seeking feedback (obtaining feedback from outside sources, giving feedback in group, attending to feedback)	• Members of the group often provide one another with constructive criticism • We are continuously changing in response to feedback			All 13
Creating resources for working with emotion (accept emotions as part of group and encourage expression and examination of feelings)	• In our meetings, we try to save time to talk about frustration or other emotions • Group members are careful not to let feelings enter into any discussions			All 13
Creating an affirmative environment (positive group affect, optimistic outlook, feelings of group efficacy)	• People get energized when working in our group • When something goes wrong we look at it as a challenge rather than an obstacle	Hedonic tone	• A feeling of failure prevails in the group • Members continually grumble about the work they do for the group	All 13, but Hedonic Tone
Problem solving (proactively solving problems)	• When problems occur we wait for someone outside of our group to fix them • We work to anticipate problems before they occur			All 13
Organizational awareness (understanding the socio-political system of which the group is a part)	• The people in our group can easily explain how decisions are made in this company • Our group works the system well			All 13

Group Emotional Intelligence Instrument		Hemphill's Instrument		
		Convergence		Divergence
Competency	Associated Questions	Construct	Associated Questions	Construct
Intergroup awareness (understanding the expectations and needs of other teams)	• We don't know much about other groups in our company • People in our group can describe what other groups in this organization need			All 13
Building relationships with external sources (help other teams, ensure positive contact with other groups)	• If another group needs our help, we try to assist them • Helping other groups often slows us down so we try not to get involved in their problems			All 13
Ambassadorial orientation (gather support and secure resources)	• Our group often looks outside itself for support or resources • Members of our group meet with others to get support for our work			All 13

Appendix G

Consent Form

Dear Group Member:
Enclosed you will find 2 questionnaires on group characteristics. The purpose of the study is to develop a questionnaire that measures those characteristics of groups which are important for effective functioning. Your responses, combined with the responses from about 200 people in many other work groups, will help us begin to understand what kinds of questions are important and relevant to describing many different types of work teams. Ultimately, this will help teams to identify areas of strength and areas for development and to make changes to the group that improve members' satisfaction and group performance.

You will be asked to fill out two surveys and some basic demographic information about yourself. In total, this should take about ½ hour. Your decision to participate is completely voluntary and there will be no penalty should you decide to stop participating at any time. More importantly, steps have been taken in the conduct of this survey to keep your responses anonymous. Your name will not be revealed or associated with this study and your answers will not be connected to you. No feedback of results will be provided. In order to assure your anonymity, please do not put your name or other identifying marks anywhere on this questionnaire.

Your participation in this project simply will involve completing the enclosed materials. I would like to stress the following:

- Your participation is completely voluntary;
- Your participation is not a requirement of the organization, and
- You may decide to withdraw from participation at any time without repercussions.

This project is dissertation research being conducted by Christina Hamme. If you have any questions or comments about this research, please feel free to contact me, Christina Hamme, via email at: hanne@eden.rutgers.edu. Also, if you have any questions about your rights as a research subject, you may contact Brenda Ruotolo, the Sponsored Programs Administrator at Rutgers University at (732) 445-2799.

If you agree to participate, please detach this piece of paper from the questionnaires and sign and date below.

_____ _____

Signature of participant Date

_____ _____

Signature of researcher Date

Appendix H

Distribution Script

Date

Dear (group leader) ,

Thanks so much for being willing to help with my dissertation. Enclosed you'll find the questionnaire packet I described to you and the consent form. Below is the script I described to you for use when you distribute the questionnaire. Please read it aloud as you go through the steps.

"I have been in contact with a doctoral student at Rutgers who is studying work groups. She has asked that we help her in her data collection by filling out some questionnaires. First, I will pass out the consent form. Please read it over and then sign it. The form basically describes the study, the reasons for conducting it, your role, and how your results will be used should you decide to participate. If you have questions, you should email the student, Christina Hamme, at the contact address on the consent form."

Pass out consent form. Once it is completed, collect the consent forms and then distribute the questionnaires. This way the consent form and the questionnaire remain separate, thereby preserving their anonymity. No identifying marks are on the questionnaire so I won't be able to directly connect their responses with any specific individual person.

"Here are the questionnaires. Please fill out the first page of the questionnaire first (the page that asks for demographic information). The information about your personal demographics is not as essential as the info about the group demographics. If anyone is concerned about their anonymity, you can omit the demographic information about yourself, but you need to fill out the group info or else your responses are not useable. For the purposes of today, fill in the 'title of the group' question with (title of group) Everyone should put in the same title of group. You all should be thinking of (title of group) when you answer the questions that follow."

"Lastly, don't collaborate on your answers. The point of the study is in part to see how much individuals describing the same group agree or disagree—not that agreement is necessarily more correct."

That should about do it. If you have more questions, please email me or call me. Look forward to speaking with you again soon.

Thanks again,
Christina

Appendix I

Unreliable Items Dropped from the Group EI Competency Scales

Scale	Item
Perspective taking	♦ Some members of our group consistently offer points of view that are not useful
Confronting members who break norms	♦ There is very little behavior that is considered unacceptable in our group
Team self-evaluation	♦ Emotions are irrelevant to our ability to do the work
Creating resources for working with emotion	♦ Group members are careful not to let feelings enter into any discussions
Creating an affirmative environment	♦ Our group often talks about how the tasks we are given will be difficult to accomplish ♦ Negative thinking is discouraged in our group
Proactive problem solving	♦ When dealing with problems, this group spends most of its time putting out fires ♦ All our problems are solved by one or two people in our group
Organizational awareness	♦ There is so much bureaucracy in our organization that our group has trouble getting things done
Ambassadorial orientation	♦ Our group often looks outside itself for support or resources ♦ Our group doesn't do a good job talking about our achievements with others ♦ Others in this organization do not meet our needs for equipment or facilities

Appendix J

Factors and competencies for each item removed from the factors

Factor	Associated competency	Item	Factor loading
1- Group regulation of members	Problem solving	When problems occur we wait for someone outside of our group to fix them	.43
	Creating an affirmative environment	When something goes wrong we get discouraged	.41
	Problem solving	All our problems are solved by one or two people in our group	.47
2- Group self-awareness	Problem solving	Our group comes up with ways to solve those problems that others might say are out of our control (R)	.42
	Creating an affirmative environment	Negative thinking is discouraged in our group (R)	.40
3- Group self-regulation	Interpersonal understanding	Unless someone came out and said it, group members wouldn't know if one of our group was upset	.49
	Team self-evaluation	We try to be aware of the group's mood (R)	.66
	Interpersonal understanding	When one of us is in a bad mood, people in the group notice (R)	.66
	Confronting members who break norms	We tell group members who aren't doing their fair share of the work to shape up (R)	.42

Factor	Associated competency	Item	Factor loading
4- Group social awareness	Confronting members who break norms	Our group has well understood rules concerning member conduct, either written or unwritten (R)	.46
	Perspective taking	Other members' points of view are solicited prior to making a decision (R)	.51
5- Group social skills	Intergroup awareness	We know what other groups need from us (R)	.67
	Intergroup awareness	Our group is not concerned with the needs of other groups	.71
	Intergroup awareness	We understand other groups in our organization (R)	.49