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A

Expectancy Effects for Group Performance on Diverse and Non-Diverse Groups

by

Elaine C. Bow

A dissertation submitted to the Graduate Faculty in Psychology in partial
fulfillment of the requirements for the degree of Doctor of Philosophy, The City
University of New York

2001

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This manuscript has been read and accepted for the Graduate Faculty in
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Abstract

Expectancy Effects for Group Performance on Diverse and Non-Diverse Groups

by

Elaine C. Bow

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Racial group diversity and level of expectation for group performance were experimentally manipulated to test their effects on productivity. Undergraduate students (N=126) from a large urban university system took part in the study. Participants were assigned to one of three experimental expectation conditions within either a diverse or non-diverse group: positive group outcomes, negative group outcomes, and no group outcomes. Expectation level was manipulated via contrived journal articles. Analysis of Variance supported the hypothesis that high expectancy groups would demonstrate the highest level of productivity. Results also supported the hypothesis that group composition would have no effect on group productivity. Diverse and non-diverse groups did not differ in their desire to work with their group again in the future.

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Expectancy Effects for Group Performance on Diverse and Non-Diverse Groups

Diversity initiatives, unlike Affirmative Action, and Equal Employment Opportunity efforts, have no legal construction around them, therefore making their success wholly dependent on the voluntary efforts of organizations. In order to reap the full benefits, diversity programs must be well constructed and well managed. Absent any legal grounding, if diversity initiatives, such as training programs, fail to produce the effects posited they would be abandoned. Therefore, the success of any diversity initiative depends on managing the organization's human resources to best advantage. The caveat: There is scant empirical research with which to design and direct organizational diversity efforts. There is however, strong direction to be taken from Expectancy research, which when combined with those findings most relevant in diversity research, offer some guidance in the formation of a successful diversity program.

There is extensive literature to support the ability to set individual's expectations for performance (c.f. Eden, 1990; Dvir, Eden, & Banjo, 1995; Rynes and Rosen, 1995). Indeed, expectation for performance may be set jointly, as when both supervisor and subordinate's expectations are set for a given outcome (Eden & Gad, 1982). There is some research to suggest that diversity, defined more broadly than simply variations in race and gender, leads to discomfort or

anxiety on the part of group members (Harrison, Price, & Bell, 1998; Hudson & Hines-Hudson, 1996; Jackson & Ruderman, 1995; Taifel, 1982). Such discomfort or anxiety may result in actual or psychological withdrawal for both minority and majority group members. If indeed diversity has the potential to cause discomfort, it is important to determine if such an effect can be influenced by managing expectations for group performance.

The research study reported herein investigated the effects of expectation for group performance on productivity and intragroup behavior in diverse and non-diverse groups. Group productivity was the primary dependent variable. Intragroup behavior served as the secondary dependent measure. Level of expectation for group performance (high, low or none) and group composition, (diverse or non-diverse) served as the independent variables.

The new workforce, heralded by the Hudson Institute study Workforce 2000 (Johnston & Packer, 1987), is now a reality. This new workforce is composed increasingly of women, racial and ethnic minorities, and recent immigrants to the United States. Increasingly present, too, are people with psychological and physical conditions uncommon to the more traditional workplace as well as persons who pursue non-traditional or alternative lifestyles (Kessler, 1990). While changes in the demographic makeup of the workforce continue, little has been

done to ready workers from such varied backgrounds to interact productively and effectively within the current organizational structures.

The focus of the present research was to empirically examine the effects of diversity and level of expectation for group performance on the outcome measures of productivity and intragroup behavior. Two questions were primary in this research: Will priming a group for a particular expectation of performance outcome lead to that outcome? and Would the racial composition of the group have a primary effect on, or interact with, expectation level to effect the performance of that group?

Diversity

Diverse work groups are cited in countless anecdotal articles as related to increased organizational productivity and creativity, despite a lack of empirical data. Some as a panacea has even presented the employment of diverse personnel for many of management's ills, such as low morale, unimaginative thinking, and sagging productivity (c.f. Cox, 1993; Copeland, 1988 a,b; Cross & White, 1996; Mandell & Kohler-Grey, 1990; Silva & Jacobs, 1993). While the intent driving this vein of research -- examining and understanding racially diverse groups -- is compelling, it is certainly not new. In fact, most extant empirical studies in the

area of diversity find their basis in the work of early social psychologists. The topic of diversity as it is explored today is a reexamination and extension of issues prominent in social psychology in the 1940s, and later in the group process work of the 1960s (Jackson, May, & Whitney, 1994). Indeed, Pettigrew is still a prominent voice in the field of race-related organizational research, albeit primarily within a social psychological context (c.f. Pettigrew & Martin, 1987, a,b, 1987).

Current research in the field of industrial and organizational psychology is distinguished from earlier work in social psychology by its shift in focus from the perceptions and concerns of those designated as different, to a more fundamental and arguably less altruistic concern -- the economic well-being of the United States. It has been said that absent training, the spectrum of workers depicted in Workforce 2000 may threaten the United States' ability to compete in the technology-dense, information driven, global marketplace (Conger, 1993; Foster, Jackson, Cross, Jackson, & Hardiman, 1988; Goldstein & Gillian, 1990; Hanamura, 1989; Hopkins, Sterkel-Powell, & Hopkins, 1994; Kimmerling, 1989; Kraiger, 1988; Mandell & Kohler-Gray, 1990; Offerman & Gowing, 1990; Turnage, 1990). The field of race-related research has now come full circle, once again examining groups who are currently minorities in the United States in an effort to determine what benefits and challenges may ensue from their

interpersonal contact within an organizational context, and how best to use all available talent.

The new workforce must be considered an integral part of the overall organizational system, with talent that can best be cultivated by removing any obstacles to communication and effective team processes. The real concern with a diverse workforce is how best to use their talents and address what may be novel, but nonetheless, surmountable problems, in order to effectively conduct business (Coates, Jarrett & Mahffie, 1990; Goldstein & Gillian, 1990; Kimmerling, 1989; Turnage, 1990). Ideally in a workgroup context, the personal and social characteristics of individuals are not the primary focus. Instead, the task at hand takes precedence over any personal characteristics or concerns. The need to motivate and develop workers who meaningfully contribute to the organization is now, and always has been, the well-run organization's end goal.

The Evolution of Diversity Research

The evolution of the study of diversity and diversity related initiatives, such as training programs, are demonstrated in its changing language. A shift has occurred from the Tayloresque focus of "managing diversity" (c.f. Loden & Rosener, 1991; Thompson & DiTamaso, 1988) to the more humanistic concern of

“valuing” diversity. In the former, the emphasis was on skills development, conceptualizing diversity as potentially problematic. The latter views diversity as an unquestioned good to be celebrated. Recently, attention has returned to an evolved conceptualization of “managing diversity,” which now has as its emphasis skills development for coping in increasingly complex social interactions (c.f. Cox, 1983; Morrison, 1992; Nkomo, 1992). The distinction between the concepts of “valuing” and “managing” diversity is a subtle, yet meaningful one. In practice, valuing and managing diversity programs have somewhat different goals, with the former concentrating on affective change, and the latter on behavioral change. The two concepts also result in two distinct research domains with different foci that can result in different research agendas.

Valuing and Managing Diversity

Roosevelt, Jr. Thomas (1991) states “valuing differences helps people accept diversity by examining stereotypes.” A valuing differences perspective views lack of information, not racism or sexism, as the underlying problem. It sees “adequate information as the key to acceptance and understanding, which lead, in turn, to greater harmony.” Thomas (1991) defines progress in this context as

improved interpersonal relations. In explicating the differences between valuing and managing diversity, Thomas notes managing diversity's (MD) prominence in

“making productive use of diversity's richness through the incorporation of appropriate attitudes and systems in the interest of corporate profits. The MD initiative extends the definition of diversity beyond ethnicity, race and gender to include those who are physically challenged or share a different sexual orientation.” Importantly, MD defines diversity as inclusive of such aspects as “different educational background, functional responsibilities, ages, and other characteristics. Progress, here, means creating a process – a culture and set of systems that will work naturally for everyone” (pp.vii- xii).

Thomas (1991) clearly advocates the use of managing diversity and affirmative action with valuing diversity initiatives. Thomas reports that as he continues to speak with people in organizations about managing diversity, he meets

“informed, intelligent people who don't accept --- let alone understand or value --- diversity. Alternately, he meets people “who understand that people are diverse but fail to see why that should matter. They ask: ‘what difference does it make? The values and assumptions and roots of my

corporation are such that anyone can buy into them.’ Upon reflection, these attitudes are not surprising. A cherished image in the United States is that the country is a “melting pot with its focus on assimilation”. “This belief allows us to avoid acknowledging the reality of diversity. As a result, we don’t anticipate the multiplicity of differences that exist or the potential of these differences, if unexamined, to result in misunderstandings. Yet legitimate differences do, in fact, exist. These differences are so multifaceted and ubiquitous that no one is exempt from their effects.”

Importantly, Thomas points out

“neither white corporations nor their managers perceive white men as diverse. Both define white able-bodied males as the norm, all others as different. As such ‘diverse’ connotes ‘less than’, and incorporating diverse means ‘doing for’. This perception and the attitudes it encourages underlay the inadequacies of Equal Employment Opportunity and Affirmative Action initiatives, the insistence on assimilation, and the subsequent reliance on mentoring as essential to corporate success. To effectively manage diversity is to understand that white males are not the norm; they are as diverse as their non-white, non-male counterparts. Managing diversity does not mean managing those ‘different ‘ folks who

increasingly populate America's corporations. It means acknowledging that we are all diverse and managing all -- -- including white males -- -- who are engaged in the company's business" (Thomas, 1991, p. xiii).

Valuing Diversity

The concept of valuing diversity, which has taken hold of so many organizational policies and training programs, has as its focus simply acknowledging or celebrating the differences in people. This concept of valuing diversity has been taken as so self-evidently good that it has not been empirically examined. Such things as depictions of religious and national holidays, cultural pursuits and customs ascribed to a particular group are put forth in training sessions and related materials (e.g., calendars) without examination of their impact on their audience. The rationale for valuing diversity activities is laudable, but somewhat simplistic: A respectful and mindful recognition of our cultural differences will lead to a greater understanding and valuing of the customs of those from a cultural and/or racial background different from one's own. The end result of such valuing diversity activities is said to be a more content and productive workforce (c.f. Copeland, 1988 a,b). While it is no doubt valuable to acknowledge each group's culture, such programs may do nothing to dispel the

negative stereotypes associated with the groups about which they seek to give guidance. Compounding the weaknesses of this approach to diversity is the fact that no real differentiation is made between ethnic groups within a given race, thereby further undermining the stated purpose of valuing differences (Chemers, Oskamo, & Costanzo, 1995). For example, Asian heritage month garners no additional appreciation of Asian heritage if all Asian groups and their varying cultures and traditions are not shown to be distinct. Simply offering Chinese food or presenting art from a single Asian artist does little to enhance appreciation of Filipino or Korean culture.

The valuing diversity literature leaves one with the impression that the only point to be made is that people are different, and despite this fact organizations will reap a myriad of benefits merely by training employees to acknowledge these differences. Indeed, an argument can be made that such an intense focus on differences, especially if portrayed in a stereotypical manner, may merely reinforce the audience's beliefs without increasing empathy and appreciation for one's coworkers and subordinates. For example, in one widely used training film, women of color are depicted as passive, Hispanic males as argumentative, and white males as cold and unfeeling (Copeland, a,b, 1988; Haight, 1990). This runs counter to Thomas' wisdom, and to basic learning principles. These programs are based on the assumption that what people need is information about others, and

research shows that simply providing information rarely affects complex feelings or behaviors. One only need look at the failure of informational campaigns to change behaviors in a more obviously dangerous area such as smoking (Auger, Wright, & Simpson, 1972; Epstein, Grunberg, Lichtenstein, & Evans, 1989; Shaffer, 1986; Evans, 1981). Information is important, but may not be enough to change attitudes, which have roots in socialization and have functions in people's lives (e.g., ego-enhancement).

Perhaps because of the well-intended assumption that diversity is to be valued and our differences revered, the utility and efficacy of the messages inherent in such training materials -- that diversity is beneficial -- are either not evaluated, or if evaluations do exist, they exist in-house, and do not appear in the scientific literature. What valuing diversity ignores is the potential downside of a diverse work force, namely that differences in perspectives may lead to discomfort within the work group. Diversity in the workplace may also carry with it negative consequences for performance, such as contradictory viewpoints, an outgrowth of the potential breakdown in communication. Such group conflict is not necessarily attributable to race or culture, but more to differing perspectives based on group members' differing experiences and expertise (Ancona, & Caldwell, 1992; Sessa & Jackson, 1995). Thomas' point is critical here: Individual and group differences are many and multifaceted. A complete examination of

differences in perspectives, needs, presses, strains, behaviors, and outcomes must precede the formation and execution of any successful diversity initiative.

Managing Diversity

Perhaps as a result of the failure of the concept of “valuing diversity” to adequately capture and address organizational concerns, there is a renewed interest in the concept of “managing diversity”. The expanded conceptualization of “managing diversity” as used by Jackson and others, suggests that diversity is complex and challenging, requiring management and a respectful understanding of other’s culture and background. In managing diversity, the objective is to provide managers with the skills necessary to deal effectively with the conflicts, which may emerge as diverse workers interact in a departmental setting. Diversity of perspective, race, gender, education, expertise, or any other individual trait, may lead to discomfort and breakdowns in communication, which, may impede performance and, lead to withdrawal and resignation by workers of all backgrounds. This school of thought proposes that while differences may exist between groups, they can and should be managed. This approach to diversity may be viewed as an extension of valuing diversity with a slightly more macro focus, often organization-wide, as opposed to the micro focus

of valuing each individual. The phrase “managing diversity” implies action, as opposed to the more passive, albeit important emphasis on valuing differences. This shift in focus was clearly a step forward in the field of diversity research, and one which ushered in empirical studies, with more sophisticated experimental design methodology with which to examine more complex questions, and largely absent the testimonials and sentimentality which characterized most of the earlier work which fell under the rubric of valuing diversity (Eric, 1996; Foster, Jackson, Cross, Jackson, & Hardiman, 1988; Geber, 1990; Hanamura, 1989).

Workforce 2000

In their book *Workplace 2000: Work and Workers for the Twenty-first Century*, Johnston & Packer (1987) reported that between the years 1985 and 2000, 85% of the net new workforce entrants will be so-called "non-traditional" workers: women, recent immigrants, and persons of color. Specifically, Johnston and Packer (1987, p. xxi) state that the net new workers will be comprised of: Native White Men (15%), Native White Women (42%), Native Non-White Men (7%), Native Non-White Women (13%), Immigrant Men (13%), Immigrant Women (9%). In addition, these workers will lack the requisite knowledge, skills,

abilities, and education to perform many of the available positions, especially at the entry level.

In the natural evolution of the field of race-related research, diversity research represents an extension of earlier work on, for example, racism and outgroups. Early research concerned with race-related issues initially sought simply to examine between-group differences, later focusing on segregation, and later the need for government mandated programs such as Affirmative Action, and most recently the effects of such programs on their recipients (Coates, Jarratt & Mahaffie, 1990; Heilman, Block, & Stathatos, 1997; Johnston & Packer, 1987; Joly, Beaton, & St.-Pierre, 1996; Kravitz, 1993; Leck, Saunders, & Charbonneau, 1996; Pettigrew, 1997; Tougas, Thomas, 1990). In line with past United States workplace demographics --- mostly male and mostly white --- those leaving the workforce due to attrition (e.g., retirement) are largely white males. This departure of white males is accompanied by a marked increase in women, racial minority group members, and recent immigrants to this country entering the workforce (Johnston & Packer, 1987; Morrison & Von Glinow, 1990; United States Department of Labor, 1995). Although the majority of newcomers to the workplace will continue to be white, the net effect will be a shift in workforce demographics, with greater representation of women and minorities. There is a clear and immediate need for effective diversity initiatives.

Diversity in Practice

The evolution of the workforce in terms of race and gender necessitates consideration of the impact of diversity on intragroup and intergroup relations and its ultimate effect on organizational productivity. In practice, most organizational diversity programs are a combination of activities designed to “value diversity” (e.g., cultural celebrations), and foster sensitization of management (e.g., tying performance review to the promotion of diversity in the workplace as defined by a given organization). Indeed, the very definition of diversity has returned to the original conceptualization to include one's race, but ethnicity, culture, and sexual preference; as well as, physical and psychological challenges (Thomas, 1988; 1991; 1995; Thomas, Gray, Woodruff, 1992).

The definition of diversity has so expanded, that many authors now include professional expertise and level within the organization as important components of diversity (Cox, 1993; Fernandez, 1991; Harrison, Price, & Bell, 1998; Jackson & Ruderman, 1995; Jackson & associates, 1992; Jameson & O'Mara, 1991; Loden & Rosener, 1991). The breadth of this definition of diversity accompanies an increasing recognition that the pool of entry-level employees is diverse with respect to countless individual characteristics, without a single-minded concentration on demographic differences between groups. Instead there is a

healthy shift to examining the more relevant question of how best to manage within a diverse population while achieving the corporate mission. Significantly, diversity here is taken as a given, as another factor of the social system of which employees are a part (c.f. Cox, 1991; Jackson, Brett, Sessa, & Cooper, Julin, Peyronnin, 1991; Jackson, May, & Whitney, 1994; Rothbart & John, 1985; Stephan & Stephan, 1985).

The plethora of articles related to diversity awareness training, also known as “valuing” or “managing” diversity programs, is evidence of the importance diversity now has on the organizational agenda (c.f. Bartz, Hillman, Lehrer, & Mayhugh, 1990; Rynes & Rosen, 1995). The new organization now largely consists of teams: some temporary and some more permanent in nature (Jackson & Ruderman, 1995). An example of a temporary team would be one which brings together differently skilled persons to solve an organization-wide problem, such as a task force to integrate health services organization-wide. In this instance, different persons would be chosen to participate in the group based on the expertise they bring to the problem. In such a group it is conceivable that persons representing Systems, Marketing, Human Resources, and Quality would form a temporary group charged with meeting a particular organizational need, or solving some well-defined problem. A newly formed line of business charged with serving the needs once served by multiple departments (e.g., a shared services unit

that provides full accounting services to internal departments) is an example of a long term or more permanent team configuration. Both short and long term teams have accompanying challenges to overcome if they are to be successful, among them diversity. Diversity can be very narrowly defined to include only immutable differences such as race and gender, or more broadly defined to include skill, education, and ability level, and organizational level differences (Bantel & Jackson, 1989; Jackson, Brett, Sessa, Cooper, Jolin, & Peyronnin, 1991; Harrison, Price, & Bell, 1998; Jackson, May, & Whitney, 1994; Jackson & Ruderman, 1995; Jackson, May, & Whitney, 1995; Jackson, in Worchel, Wood, & Simpson, 1992).

The Challenges of Diversity

There is a long history of psychological literature to suggest that interacting with those that are actually or perceived to be different from oneself may lead to conflict (Allport, 1954; Jackson & associates, 1992; Kraut, 1975; Stephan & Stephan, 1985;). The first researcher to broaden the definition of diversity and draw attention to possible challenges related to diversity within teams or work groups is Jackson. Jackson and Ruderman (1995) points out that diverse work groups are neither inherently superior nor inferior to non-diverse work groups.

They have the potential assets of diverse teams include quantity of ideas presented, increased quality of solutions generated, and diminished chances of making judgment errors. Potential liabilities include internal disagreement, mistrust, miscommunication, and ambiguity about norms and expectations. To be effective, diverse work teams must carefully manage these assets and liabilities. (Jackson & Ruderman, 1995).

Jackson & Ruderman (1995) define diversity widely, including expertise and level within the organization. In an extension of the Bantel & Jackson research (1989), a study was undertaken to examine team composition in terms of age, education level, college curriculum (i.e., area of expertise), and industry experience. Significantly, results of this study confirmed that group diversity, as defined by Jackson & associates (1992) to include level of expertise, education, and place in the organizational hierarchy, had a negative predictive effect on turnover in top management groups. That is, those managers who were older, had dissimilar educational levels and credentials, and varied from the rest of the group in level of experience outside the industry, were more likely to leave the group (Jackson, Brett, Sessa, Cooper, Julin, & Peyronnin, 1991).

Using this definition of diversity Bantel & Jackson (1989) found that among senior bank officers, diversity of functional expertise, and highly educated managers were positively associated with innovation. Wanous & Youtz (1986)

found that initial disagreement within a group regarding which strategy to take to solve a group problem led to superior decision-making. Other researchers have found that educational curriculum heterogeneity has a significant positive effect on strategic change and diversification (Wieserman & Bantel, 1992). Still other researchers have obtained results that demonstrate that ethnically diverse groups' decisions are rated as more creative (McLeod, Liker, & Lobel, 1992). These findings are consistent with group research which shows that homogeneous groups tend to have less turnover and absenteeism, (Shaw, 1982), and heterogeneous groups tend to generate more and better ideas (Maier, 1957). Recent research suggests that more fundamental or "deep level" attitudinal differences are more likely to be the source of work group interaction challenges than are the more "surface-level" differences associated with demographic differences such as race and gender (Harrison, Price, & Bell, 1998).

In most organizations it no longer matters if one wishes to interact outside their immediate cultural, ethnic or racial group. The success of one's job-related endeavors with all organizational members are paramount to the success of the organization that employs them. Indeed, organizations themselves are viewed as more desirable or effective when they have shown a commitment to supporting and maintaining a diverse workforce (Fine, Johnson, & Ryan, 1990; Robinson & Dechant, 1997; Sanchez & Brock, 1996; Williams, 1997). Yet the preponderance

of the social psychological research evidence indicates people are most comfortable with those to whom they feel similar. This literature has also shown that differences are a primary source of discomfort when persons from varied backgrounds are required to interact. As noted by Harrison, Price, & Bell (1998), it is not at all clear that racial, ethnic and gender differences are in themselves sources of group discomfort. However, as noted by Kraut (1975) in a seminal study of reactions to affirmative action in the 1960s, expectations for acceptance among Black/African Americans into traditionally white work groups was initially low. Nevertheless, even nearly 40 years ago, those expectations were reversed after a relatively short period of time in the work group. Relatively little work has been done in the intervening years focusing specifically on work group dynamics as a function of race. It is, however, logical to assume that if and when such discomfort exists it is transferable to a work setting, and thus may be a potential source of work group discord (Jackson & associates, 1992).

Expectancy

Positive and negative priming for expectation of a particular outcome may be integral to the success of diverse work groups, and may in fact vary by group composition (Bem, 1996; Livingston, 1988; Olson, Roese & Zann, 1996).

Expectancy research, specifically the concept of the Self-Fulfilling Prophecy or Pygmalion Effect, provides some fine insights regarding the effects of expectancy on performance. However, this research has been conducted with either school students with clear cut differences in both socio-economic status (SES) and racial backgrounds (Dvir, 1995; Livingston, 1988), or with military personnel, who it may be assumed share at the very least a common interest in the military, and perhaps even a similar personality profile (c.f. Eden, 1993), both of which would tend to make any differences they may possess less salient when working together as a unit.

A self-fulfilling prophecy results when “a false definition of the situation evokes a new behavior which makes the originally false conception come true” (Merton, 1957, as cited in Rosenthal & Jacobson, 1968, p. 423). More recently the concept of the self-fulfilling prophecy has been defined as a process by which another’s expectations about a person leads to the fulfillment of the expected behavior (Rosenthal & Jacobson, 1968). The self-fulfilling prophecy may be seen as resulting from a three-step process: One forms an expectation of the target, then acts on the basis of this expectation, which elicits the expected behavior from the target person (Cooper & Good, 1983; Harris & Rosenthal, 1985).

The self-fulfilling prophecy has been the subject of much research, most of it in academic settings (c.f. Harris & Rosenthal, 1985; Jussim, 1993; Madon,

Jussim, & Eccles, 1997; Rosenthal, 1966; Rosenthal & Jacobson, 1968), and the military (Dvir, Eden, & Banjo, 1995; Eden, 1990; Eden & Shani, 1982; Eden & Ravid, 1982; Eden & Kinnar, 1991; Oz & Eden, 1994), with relatively few references to its application in business settings (Eden, 1984; Eden, 1986; Eden, 1990; Livingston, 1988).

Robert Merton (1957), a sociologist, is credited with being the first to recognize that another's expectations can lead one to behave in the expected manner. But it was not until the seminal work by Rosenthal & Jacobson (1968) on the effects of teacher expectations of students that the concept of the self-fulfilling prophecy or the Pygmalion Effect was given any widespread attention.

In their now classic study, Rosenthal & Jacobson (1968) were able to demonstrate priming of elementary school teachers to have positive or normal expectations of pupils based on their being labeled either as "late bloomers" (positive expectations for performance) or not (comparison group). It was found that those students labeled as "late bloomers," whom the teachers were told had high intelligence test scores were expected to be on the "cusp of intellectual growth", did in fact improve by 30 points on their intelligence test scores at retesting. Propelled by this study, thirty years of research into the effects of expectation of performance on the target person -- the self-fulfilling prophecy -- was launched, and has become one of the most widely studied areas in

psychology. In his meta-analysis of over 400 experiments on the effects of expectation for student performance on the student, Harris & Rosenthal (1985) concluded that a full 36% of the experiments reviewed were able to demonstrate a significant effect.

Self-fulfilling prophecies or expectancies, in the form of the Pygmalion Effect, the Golem Effect, and the Galatea Effect have many practical applications, from something as mundane as reducing seasickness (Eden & Ravid, 1982; Eden & Zuk, 1995) to more effectively managing one's staff (Oz & Eden, 1994). The Pygmalion Effect is produced by setting or priming the expectations of one person regarding another's (i.e., the target person's) behavior, and inducing changes in the target person, which are consistent with that expectation. The Golem Effect is the negative side of the Pygmalion Effect, whereby the observer uses negative expectations for the actor's performance to either lower or completely stunt their performance (Oz & Eden, 1994). The Galatea Effect, requires only that the individual's own expectations regarding their performance be raised to produce the intended effect, with no manipulation of the observer necessary (Eden & Kinnar, 1991). Drawing on this vast research, some sought to examine the efficacy of the self-fulfilling prophecy on military personnel; most prominent among those pursuing this line of research is Eden.

Eden's research has spanned sixteen years, during which he has refined our understanding of expectancy effects in a variety of work settings. In one of a series of studies on the Israeli military, Eden & Shani (1982) examined the self-fulfilling prophecy within an Israeli military combat command military training course. Results confirmed that the self-fulfilling prophecy or Pygmalion effect held within a non-academic setting; instructor expectancies did influence trainee performance. Instructors were told that their male trainees fell into one of three command potential categories: high, regular, and unknown. Trainees who were expected to have high command performance did in fact score significantly higher on measures of learning and willingness to continue in training. Trainees in the high expectation group also gave their instructors higher satisfaction ratings, additional evidence of a self-fulfilling prophecy.

Eden & Ravid (1982) replicated the Eden & Shani study (1982), with the addition of directly inducing high self-expectancy to test its effect on learning. Eden & Ravid (1982) thus differentiated two types of self-fulfilling prophecies: the Pygmalion Effect and the Galatea Effect. Sixty male soldiers enrolled in a seven-week clerical course served as subjects. The men were divided into five training groups, each of which contained subjects in one of three possible conditions: men described to their instructor-commander as high success potential (self-fulfilling prophecy), men directly told by a military Psychologist that they

had high success potential (directly induced self-fulfilling prophecy or The Galatea Effect) and a control group. The results supported Eden & Ravid's (1982) earlier study that instructor expectation lead to a Self-fulfilling prophecy. In fact, the self-fulfilling prophecy was shown to be sustainable even when the "prompted" instructor was replaced midway through the course with an "unprompted" instructor. In addition, the self-induced self-fulfilling prophecy, i.e., the Galatea Effect, was also shown to exist, with these soldiers also scoring significantly higher on instructor ratings of performance, performance exams, and self-expectancy ratings than the control groups.

Eden (1990) was later able to demonstrate that the Pygmalion Effect was not an aberration due to some interpersonal contrast effect by using independent platoons of soldiers within a single condition as subjects. Using the platoon as the level of analysis in a 2 x 10 (treatment by company) randomized block design, Eden was also able to show the relevance of the Pygmalion Effect to groups, as well as to the individual. Of the 29 platoons studied under the two conditions (control and high expectation), those assigned to the high expectation conditions significantly outperformed those in the control condition.

Building on and extending prior research, Eden & Kinnar (1991) were able to extend the findings of Eden & Ravid (1982) to show that manipulating an individual's expectations for performance does, in fact, create the Galatea Effect

(enhanced performance) even in the absence of any attempt to induce a Pygmalion Effect. Study participants were 556 Special Forces qualified military candidates in the Israeli Armed Forces, who were randomly assigned to either the traditional or the experimental information program related to Special Forces. The use of expectations for one's performance (Galatea Effect) proved to have both practical and statistical significance. In line with their hypothesis, Eden & Kinnar (1991) found that the experimental program increased volunteering for Special Services by 8% and decreased the attrition rate in the program by 33%.

Men had been the sole focus of research on the Pygmalion Effect and the Galatea Effect with adult populations. More recently however gender and the self-fulfilling prophecy as they relate to the Pygmalion Effect have been the focus of research, with some interesting results (Dvir, Eden, & Banjo, 1995).

Participants in the first experiment were 345 female Israeli Defense Forces cadets forming 23 squads, all led by women commanders. As intended, the female officers' expectation levels of the female cadets under their command were in fact raised, but there was no significant difference in performance measures; no Pygmalion Effect was found. In the second experiment, a Pygmalion Effect was found for male officers leading female and male cadets, but no such effect was found for exclusively female officer-cadet pairs. The Pygmalion Effect has also been shown to work in the reverse, where low expectations held by a leader result

in a denigration of performance in the target person. This reverse effect has been deemed the Golem Effect (Oz & Eden, 1994). The research on these types of expectancies leads to the same conclusion: One can in fact induce others to alter their behavior in a positive or negative direction. Performance can be enhanced, self-esteem boosted, motivation improved, cooperation encouraged, and conflict minimized. The practical implication for this research is that managers can consciously alter their behavior to bring about the desired effect in a subordinate, or group of subordinates. It is important to note that this effect has been shown for both men and women, but only when men are in the leadership position (Devir, Eden, & Banjo, 1995).

Within a non-military organizational setting the concepts of the self-fulfilling prophecy and the Pygmalion Effect has been the focus of relatively little empirical research (c.f. Eden, 1984; Eden, 1986; King, 1971; Livingston, 1988). King (1971) found that designating a group of underprivileged workers attending training courses in welding, pressing, and mechanics as high aptitude led to a positive Self-fulfilling prophecy. Subjects designated as "high aptitude" scored higher on post-training achievement tests and performance evaluations. However, the methodology employed in King's experiment was flawed, making it impossible to determine if participants' prior abilities in the areas for which they were receiving training led to a confounding of the results (Harris & Rosenthal,

1985). The remainder of the non-military literature on the Pygmalion Effect in the workplace are conceptual pieces which suggest use of the Self-fulfilling prophecy for boosting productivity by managing subordinates' expectancies of success (Eden, 1988; Livingston, 1988) and raising client expectations as a means of furthering an organizational intervention agenda (Eden, 1986).

Diversity and Expectancies

Because people are not free to choose whether or not they are assigned to a diverse work group in an organization, they may feel coerced to interact with dissimilar others. Research suggests that under such circumstances employees may have negative expectations regarding their intragroup behaviors (Dovidio, Gaertner, Isen, & Lowrance, 1995; Jackson & associates, 1992; Jackson & Ruderman, 1995). People's predispositions to others different from themselves may be affected by such interactions. Specifically, the novelty and lack of comfort with diverse groups of persons may lead to negative expectations for group performance. It is therefore imperative to investigate if priming for a positive expectation for group performance will result in the positive effects that are heralded in the diversity literature, but are as yet largely unsubstantiated. Moreover, it is important to determine if such positive effects will accrue equally

within all racial configurations of diverse groups, or only within certain ones. The mere proclamation that diverse groups are effective or ineffective may not be sufficiently strong to set expectation and positively affect group functioning when salient differences within groups exist. Additionally, the almost exclusive use of African-American to White comparisons in the empirical research that does exist in this area is shortsighted. Such comparisons clearly do not accurately mirror the population of new job entrants, or many current organizational group configurations, and therefore have limited utility.

Expectation of superior group performance continues to be explicitly advanced by proponents of diversity programs in the workplace. Evident in much of the diversity research, and all of the reviewed training materials targeted at corporate clients is an expectation of superior performance by diverse groups. However, missing in this literature is any empirical examination of the effects of such expectations on group functioning. Missing too is the fundamental examination of how the expectations of increased productivity and superior intragroup behavior within diverse groups affect such work groups, if at all. The issue of expectancy for performance is central in the exploration of diverse work groups, yet it is merely taken as a given. The present research will bridge the gap between the assertions about performance of diverse work groups, and the actual impact

expectation for performance has on work group functioning, as defined by an objective measure of group performance: productivity.

The workplace is diverse and will continue to grow in its diversity. The obvious has been ignored: that diversity need not be a positive asset, just that it should not be a negative, such that a group's racial composition has no effect on group performance. The imperative for American business therefore is that diversity not be an impediment to performance. While it might be highly desirable if diversity were found to be an asset to performance, the key issue is that diversity not be associated with performance deficits. While the finding of performance differences between diverse and non-diverse work groups would be an interesting addition to the current body of research in the area, the finding of no differences between diverse and non-diverse groups would likewise be notable, as it would suggest that diversity does not equate to negative effects.

It is assumed by many writers in the field of diversity research that the diverse work group, merely by virtue of being diverse, will outperform the non-diverse work group, regardless of task complexity, on both qualitative or subjective dimensions (e.g., intragroup behavior) and quantitative or objective measures of job performance (e.g., productivity). This dual pronged performance benefit is said to derive from the diversity of perspectives inherent in diverse groups. This line of reasoning, simply stated, is that the more diverse the group, the more

varied the ideas, solutions and viewpoints brought to the corporate table (Copeland, 1988 a,b; Thomas, 1990).

In terms of racial diversity, the idea that a racially diverse group will bring more varied ideas remains an untested hypothesis. The present study was conducted to evaluate empirically the effects of expectation level and diversity in two key elements of the workplace: group performance and intragroup behavior.

Hypotheses

The prevailing wisdom in much of the field of diversity is that diverse groups will perform better than non-diverse groups, although the empirical evidence to date is mixed and inconsistent. It is important to investigate the effects of expectation-set on performance, because should expectancy make a difference in performance, it could then be used to shape organizational programs and procedures. The important questions are what effects, if any, expectations for performance have on actual group performance, and how organizations might use such expectations to inform their diversity programs and procedures. If setting expectations of performance has an effect on group performance it is clearly an aspect of the work environment that needs to be managed proactively because there may be exciting possibilities associated with its productive use.

Research has demonstrated that establishing expectation for negative performance outcome can in fact induce the desired effect (Oz & Eden, 1994). This effect, known as the Golem effect, has been clearly demonstrated within a military setting that can be said to mimic organizations in structure and demeanor. There is no reason to doubt it would exist in a non-military setting (Eden 1986; Eden, 1990; Livingston, 1988). Based on the literature suggesting that expectation levels affect group performance and interaction, the following results are hypothesized.

Hypothesis 1. A main effect for expectancy is proposed, such that groups receiving the high expectations for performance manipulation will demonstrate significantly higher productivity than will the groups with who receive the low or no expectancy manipulation for group performance.

There is no conclusive evidence to suggest that race itself ensures a group to be more productive. Expectation of superior performance for racially diverse groups continues to be advanced by proponents of diversity programs in the workplace. Evident in much of the diversity research, and all of the reviewed training materials targeted at corporate clients, is an expectation of superior performance

by diverse groups. This line of reasoning, simply stated, is that the more racially diverse the group, the more varied the ideas, solutions and viewpoints brought to the corporate table (Copeland, 1988 a,b; Thomas, 1990).

Empirical research has found that diversity of ideas and experience lead to enhanced productivity (Jackson, May, & Whitney, 1995; Jameson & O'Mara, 1991). However, it has likewise been demonstrated that because interaction in a diverse work group is a matter of duty in organizations, not choice, negative expectations regarding those perceived to be different from one's self may have a negative impact on group performance and interaction. For example, employees mandated to work together may experience intragroup conflict because of their heterogeneity of ideas, which are often the result of varying degrees of education, experience, and professional orientation, which are believed by the group to be critical to their effective performance (Dovidio, Gaertner, Isen, & Lowrance, 1995; Jackson, May, & Whitney, 1994; Jackson & Ruderman, 1995).

Interestingly, "surface level" demographics such as race and gender have been shown to be less prominent features of positive intra-group interaction than the more "deep level" attitudinal variables of, attitudes, beliefs, and values, which are likely to be related to education and experience (Harrison, Price, & Bell, 1988; Jackson & Ruderman, 1995). Despite conflicting evidence regarding the impact

of race, there continues to be an expectation of superior group performance in racially diverse work groups (Copeland, 1988 a,b).

Hypothesis 2. No main effect for racial diversity on productivity is postulated. Non-diverse groups are predicted to be as productive as diverse groups.

Research suggests that diversity, defined more broadly than simply variations in race and gender, leads to discomfort or anxiety on the part of group members (Harrison, Price, & Bell, 1998; Jackson & Ruderman, 1995). When one experiences such discomfort, the result may be actual or psychological withdrawal from the group for both minority and majority group members.

Hypothesis 3. It is hypothesized that diverse work groups will indicate a lower desire than non-diverse work groups to work with each other again in the future.

Method

Overview of the Design

A 2x3 factorial design was used to examine the effects of varying levels of priming for expectation for performance on diverse and non-diverse groups. A diverse group was operationalized in this study as one that contained persons of self-identified different races, e.g., Asian American, Latina (o), and White, not merely non-White persons. A non-diverse group was operationalized as one whose members self-identified as having a common racial background, with no differentiation made between those traditionally held to fall into either a “minority” or “majority” group membership status. Triad group formations were employed, in order to avoid the particular interaction patterns evidenced in dyads and the probable confusion and confounding associated with running an experimental group of four or more persons (Dovidio, Gaertner, Isen, & Lowrance, 1995; Saavedra, Earley, & Van Dyne, 1993).

Expectation for Performance

Expectation level for performance was manipulated via a document purported to be a review of the current literature on group performance (see Appendix C). Three experimental conditions for expectation of group performance were created: high, low, and none. Participants in each of the high and low expectation for performance conditions received a two page “literature review” that led to the expectation that a group such as theirs (diverse or non-diverse) functions either at a high or low level, respectively. The first page of the documents was the same for each of these conditions, with the second page varying to set expectation. The one page no expectation condition (comparison group) participants’ reading made no conclusions about group functioning. Both the diverse and non-diverse comparison groups received identical expectancy group manipulations.

Statistical Power Analysis

A power analysis was conducted to determine the number of groups needed to sample in order to obtain a high probability of adequately testing the hypotheses of interest, with desired power set at .80 and alpha set at .05 (Cohen, 1988; Hayes, 1988). The power analysis revealed that alpha set at .05, with a conservative .3

effect size, requiring 42 groups or 126 participants (6 conditions x 3 participants per group x 7 groups = 126) was sufficient to obtain the moderately high statistical power of .88 (Hayes, 1988).

Subjects

One hundred and twenty-six undergraduate students enrolled in one of the senior colleges of a large urban university system served as participants in this study. Participants were recruited from the Introduction to Psychology Subject Pool. The sample population consisted of females and males, with approximately equal numbers of each within groups. A chi-square analysis of gender composition showed that the gender makeup of the experimental conditions was essentially equivalent ($\chi^2 (1, N=126) = .848, p = .36$). Female and male participants were approximately the same age ($M = 21$, and $M = 20$ respectively). The sample population ranged from 16-48 years of age ($M = 20$).

Two prerequisites were set for participation in this research study: Being an enrolled student in the university system, and having had some compensated part or full-time work experience. Group homogeneity on the variables of enrollment in college and work were deemed important to increase the internal validity of the study. The guarantee of previous work experience better ensured a sample that

more closely mirrors that found in organizations. Therefore, all of the participants possessed some compensated work experience. As a group, the participants had slightly more part-time ($\underline{M} = 2.1$) than full-time work experience ($\underline{M} = 1.5$). When asked to describe their present employment status, 63.5% of participants reported being gainfully employed: 4% on a full-time basis and 59.5% on a part-time basis; 36.5% were not presently employed.

Because of the general population of the university system from which the sample was drawn, a truly diverse sample that included Asian Americans, Black/African-Americans, Latina (o)s, Native Americans, and Whites was obtained. In addition, within the racial categories cited, the university system has a broad spectrum of nationalities from which to select participants. Therefore, the study sample represented not only various racial groups, but was ethnically diverse within those groups. For example, the racial category of Asian American contained not only Chinese, but also Indian, Japanese, Korean and Philippine participants.

The racial composition of the diverse and non-diverse groups was varied within each group to as great an extent possible given the availability of participants and the constraints regarding group composition and previous compensated work experience. When asked to identify themselves in terms of race, the sample was composed of: 35 Asian Americans, 23 Black/African

Americans, 34 Latina (o)s, 27 whites, and 1 Native American. Six participants self-identified as “other” than those races designated.

Diverse Groups

Diverse groups consisted of persons from different self-identified racial categories. An effort was made to obtain subject groups whose racial composition was highly varied, for example, groups were comprised of a mix of Asian Americans, Blacks/African Americans, and Whites.

Within the diverse groups, the participants ranged in age from 16 to 48 years ($M = 20$). Women participating in the study were of comparable age to the entire group ($M = 20$), with a range of 16-42 years. Men ranged in age from 18-35 years ($M = 20$). The diverse groups were composed of 42 women and 21 men, 54% of whom were employed on either a part-time (52%) or full-time basis (2%); 46% were unemployed. Latina(o)s accounted for 24% of the entire subject pool ($n=15$), with Asian Americans 28% ($n=18$), Whites 27% ($n=17$), Black/African Americans 19% ($n=12$) and Native Americans 2% ($n=1$) accounting for the remainder of those who identified their race. Six percent ($n=4$) chose “other” as

their racial category. The racial composition within diverse groups was also varied to as great an extent as possible (see Appendix A).

Non-Diverse Groups

Non-Diverse groups consisted of persons whose racial self-identification fell within the same racial category. In this study, a non-diverse group consisted of same race individuals, without regard to their minority or majority group status. An effort was made to configure groups such that there would be as many different same race groups as possible. The goal was to obtain groups that were not merely all Black/African Americans or all Whites, but also all Asian Americans, or all Latina(o)s. An effort was also made to obtain persons of the same ethnicity within a racial group, for example, all Indian groups or all Korean groups, not merely all Asian American groups. Within the non-diverse groups, age varied ($M=21$), ranging from 16 to 48 years (Table 1). Women's age likewise ranged from 16-48 years, ($M=21$); with men slightly younger, with a range of 17-29 years ($M=20$). The non-diverse groups were composed of 37 women and 26 men, 73% of whom were employed on either a part-time (67%) or full-time basis (6%); 27% were unemployed. Asian Americans accounted for 33% of the non-diverse group ($n=21$), with Latina(o)s 29% ($n=18$), Whites 19%

Table 1

Racial Composition of Non-Diverse Groups

Race	Number of Groups
Asian American	7
Black/African American	4
Latina(o)	6
White	4

Table 2

Participant Demographic Information by Group Assignment

	Diverse Groups	Non-Diverse Groups
Overall Mean Age	20 (16-48), n=63	21 (16-48) n= 63
Mean Age Women	20 (16-42), n=42	21 (16-48), n= 37
Mean Age Men	20 (18-35), n=21	20 (17-29) n= 26
Employment Status	52% part-time 2% full-time 46% unemployed	67% part-time 6% full-time 27% unemployed
Race (Percent & Number)	Asian American: 30%, 19 Black/African American: 19%, 12 Latina(o): 24%, 15 Native American: 2%, 1 White: 25%, 16	Asian American: 33%, 21 Black/African American: 19%, 12 Latina(o): 29%, 18 White: 19%, 12

Materials

A 30-item survey was administered to participants following completion of the group-based task (Appendix B). The experimental manipulation, which set expectation for group outcomes, was given to participants prior to task commencement. The manipulation consisted of a contrived written summary of the psychological literature (Appendix C). Manipulation checks for "the take" of the expectancy group conditions (questions 17 and 19) were included in the survey given to each participant following completion of the task.

Identical IKEA digital timers were employed to ensure that each of the 42 groups was given only the allotted time for their practice and treatment sessions.

Post-Task Survey

The survey given this sample of subjects is the result of numerous iterations based on the results of two complete pilot testing sessions which led to the refinement of each question based on item performance and extensive post-study participant interviews (see Appendix D). Each participant completed a survey, which elicited answers to questions pertinent to the task, the group, and

themselves (i.e., demographic questions). The task and group related questions as they appear in the post-task survey are given below.

The Task

2. How enjoyable was the task for you?

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Enjoyable Enjoyable Enjoyable UnEnjoyable UnEnjoyable Unenjoyable

3. How enjoyable was the task for your group?

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Enjoyable Enjoyable Enjoyable Unenjoyable Unenjoyable Unenjoyable

The Group

8. Did all of the members of your group contribute equally to the completion of the task?

Yes _____ No _____

10. To what extent would you like to work with your group again?

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Great Moderate Slight Very Not
Great Extent Extent Extent Slight At All
Extent Extent Extent Extent Extent

11. Choose the one point on the scale that best describes your group.

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Cooperative Cooperative Cooperative Competitive Competitive Competitive

12. Choose the one point on the scale that best describes your group.

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Friendly Friendly Friendly Hostile Hostile Hostile

13. Choose the one point on the scale that best describes your group.

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Talkative Talkative Talkative Untalkative Untalkative Untalkative

14. Choose the one point on the scale that best describes your group.

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Interested Interested Interested Uninterested Uninterested Uninterested
In The Task In The Task In The Task In The Task In The Task In The Task

15. How efficient was your group on the task?

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Efficient Efficient Efficient Inefficient Inefficient Inefficient

16. How productive was your group on the task?

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Productive Productive Productive Unproductive Unproductive Unproductive

17. Circle the number that represents the level of performance you expected from your group prior to the task.

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
High High High High Low Low

18. Circle the number that represents the level of performance your group actually achieved on the task.

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
High High High Low Low Low

19. How did the literature you were given to read before the task began suggest a group such as yours would perform?

3 _____ 2 _____ 1

High Performance No Expectation of Performance Low Performance

20. How much did you personally agree with the research findings in the literature you were given to read before the task began?

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Strongly Moderately Mildly Mildly Moderately Strongly
Agree Agree Agree Disagree Disagree Disagree

21. How similar do you feel to the other members of your group?

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Similar Similar Similar Dissimilar Dissimilar Dissimilar

22. How different do you feel from the other members of your group?

6 _____	5 _____	4 _____	3 _____	2 _____	1 _____
Very Different	Moderately Different	Mildly Different	Mildly Similar	Moderately Similar	Very Similar

Experimental Manipulations

Six experimental conditions were set in this study: High diverse, high non-diverse, low diverse, low non-diverse, and no expectation for group performance within diverse and non-diverse groups. The experimental manipulations employed in this study are the result of multiple iterations based on the results of two complete pilot studies and extensive post-study interviews with participants. The experimental manipulations used are given in their entirety in Appendix C.

Design

The design of this study was a 2x3 factorial design with group composition (diverse or non-diverse) and level of expectation for group performance and functioning (high, low, and no) as the independent variables. Group productivity, as measured by the number of acceptable Origami boats made, was the primary

dependent variable. Intragroup behavior is indicative of group performance, and was therefore treated as the secondary dependent variable, as measured by post-task survey questions 10, 11, 12, 13, 14, 15, 18, 21, and 22 (Appendix B). The final research design was the product of extensive information gained from two Pilot Studies, which were conducted in order to set the task and the experimental manipulations (see Appendix D).

A total of 42, three-person groups were run; seven in each of the six conditions. In order to accommodate the scheduling requirements of the participants in the subject pool, and to assess what impact, if any, the presence of another group had on the performance of another group, two of the seven groups within each condition were run simultaneously in a large classroom, and five were run alone in separate rooms. That is, a total of 12 groups were run in the same room as another group, and 30 groups were run in isolation. Observation of group functioning gave no indication that the groups run in tandem with another group were at all interacting or interested in each other. This lack of interaction, along with the fact that the groups were not in close enough proximity to hear or speak to each other, and were configured so they were unable to view the other group's interaction, would seem to obviate the need to regard proximity as a confounding variable.

Expectation of Group Performance

Participants' expectations regarding group performance and functioning (high, low, or none) were experimentally manipulated. Three levels of expectancy were created within each group composition category (diverse or non-diverse), thereby creating six distinct experimental conditions. To aid in the identification and sorting of materials, each of the six experimental groups was identified by a unique color code, which appeared on the experimental manipulations and Origami boat building materials.

Productivity

The productivity measure was derived by counting the number of acceptable "product" (Origami boats) issued from each of the groups in the six experimental conditions. A raw measure of productivity was deemed appropriate, as each group was given the same amount of practice and production time in which to perform the identical task. Allocation of time for task completion was assured by use of identical digital timers, which rang at the end of the allotted practice session and task completion times. The acceptability of the product (Origami

Boat) was assessed by two raters; the experimenter and another trained rater, using the criteria detailed in Appendix E.

The task of producing Origami boats was chosen because it is a task for which straightforward instructions could be given in written and pictorial form, thereby ensuring participants' understanding of the task requirements. Additionally, productivity could easily be measured by counting those boats conforming to the acceptability criteria. The number of boats that conform to the standards equals the productivity number per group. Finally, it was important to employ a task which would allow participants to cooperate, but which would not require them to do so.

Intragroup Behavior

Intragroup behavior was gauged by the following six questions included in the Post-Task Survey:

3. How enjoyable was the task for your group?

6	5	4	3	2	1
Very	Moderately	Mildly	Mildly	Moderately	Very
Enjoyable	Enjoyable	Enjoyable	Unenjoyable	Unenjoyable	Unenjoyable

8. Did all of the members of your group contribute equally to the completion of the task?

Yes _____ No _____

11. Choose the one point on the scale that best describes your group.

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Cooperative Cooperative Cooperative Competitive Competitive Competitive

12. Choose the one point on the scale that best describes your group.

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Friendly Friendly Friendly Hostile Hostile Hostile

13. Choose the one point on the scale that best describes your group.

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Talkative Talkative Talkative Untalkative Untalkative Untalkative

14. Choose the one point on the scale that best describes your group.

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1

Very Moderately Mildly Mildly Moderately Very
Interested Interested Interested Uninterested Uninterested Uninterested
In The In The In The In The Task In The In The
Task Task Task Task Task Task

Procedure

Students who participated in this study received two credits for their participation. One credit was awarded to participants for attending an administrative session they chose from the hours posted on the Psychology Department's Human Subjects Pool bulletin board. In this administrative session the participants were asked to choose times that best suited them for participation in the second part of the study, to provide basic demographic information to facilitate their assignment to groups, and to receive assignment to either a diverse or non-diverse group in one of the six experimental conditions. The participants were told that this was a group assignment session, told that they would be participating in a three-person group task, and were asked to read, sign and date an informed consent form (Appendix F). Participants were informed in writing and orally that their participation in the study was voluntary, and that they were free to withdraw from the study at any time. However, participants were told that credits would be awarded only for the participation given: one credit for the group assignment session, and one credit for their participation in the actual experiment.

In order to obtain the second of the two credits, participants were required to reconvene at the time and place appointed them at the administration session, and take part in the group-based exercise with two other participants. At this time the

participants were again asked to give their written informed consent by reading, signing, and dating the same informed consent form which they were given to read, and which was read aloud to them, and signed during the group assignment session.

Once seated, and after consent forms were completed and name tags affixed to their shirts, participants were asked to introduce themselves to the other members of their group. Participants were then given a fifteen minute practice session, before which each of the four pages of the instruction booklet were read aloud to each group of participants as they themselves read them.

It was made clear to the group that the practice Origami cargo carriers would be collected, but not counted toward the overall score of the group. At the completion of the practice session, the practice Origami cargo carriers were collected, bagged, and tagged by the experimenter and assigned a unique group identification number. Participants were given the opportunity to have any task completion specific questions answered before and after the instructions for the practice task session were read. Materials for completion of the Origami cargo carriers were then distributed to each person in the group, and the group was permitted to begin the actual task.

Experiment participants were given a four page written and illustrated instruction guide for constructing the Origami boats. The first page indicated the

amount of time the group was given to complete the task – twenty minutes – and asked that participants treat this task as they would a real job. Participants were also instructed to follow the instructions, noting the five quality control points required for the Origami cargo carrier to be considered an acceptable product. Finally, the first page of instructions indicated that only those Origami cargo carriers that met all five quality control points would be considered acceptable products from the group. The five quality control points were then described, as participants read the instructions along with the experimenter. The final three pages of the instruction booklet provided detailed illustrated and written instructions for completing the Origami cargo carrier (see Appendix E). Here too, the instructions were read aloud to the participants by the experimenter as they themselves read them.

Upon completion of the task, participants were each asked to read a full disclosure form -- which explained the full purpose of the study -- as it was read aloud to them, which they were then asked to sign and return to the primary experimenter (Appendix G). Finally, participants were given the opportunity to ask and have answered any questions they had about any aspect of the study. Participants were instructed to write their name and address on a separate piece of paper to be given to the primary researcher, should they wish to receive the results of the experiment at its conclusion.

Task

Participants were assigned to one of three possible conditions within either a diverse or non-diverse group: high expectation for performance, low expectation for performance, or no expectation for performance. Assignment of participants to expectancy conditions was largely a function of self-reported race, as it was important to configure the groups in such a way as to attain a balance of diverse and non-diverse groups, with as much diversity within the diverse, and as much racial and/or ethnic similarity within the non-diverse groups, as possible.

Although gender was not a focus of the present research, an effort was made to have similar numbers of men and women within each experimental condition.

Participants were asked to reconvene for participation in the group task. Participants were given a one or two page long document to read that ostensibly dealt with how the Industrial and Organizational Psychology literature has determined groups such as theirs perform on work tasks. Comparison group members were given a one page document, and experimental group members a two page document. Once participants finished reading the "literature" they were instructed to read the instructions for task completion. The instructions directed the participants to make as many "good" boats per group as possible, but did not specify whether or not group members needed to interact with one another to do

so. Therefore, the decision of whether or not to interact with the other members of the group was purely the participant's. That is, the specifications for what constituted an acceptable product were given, but the choice of whether or not to make the production process of making the Origami boats a solitary or a team effort was left up to each group.

The definition of a "good" boat consisted of one which conformed to the five quality points as given in the instructions: The colored lettering and octagonal shape must appear on the outside of the boat on both sides; the two inside points must be even with the sides of the boat; the two inside points must be points, not curved; there must be a point at each end of the boat, and there may not be any tears in the paper used to form the boat.

Results

The three major hypotheses were tested by means of a 2x3 Analysis of Variance (ANOVA). Experimental manipulation checks were done using chi-square and t-tests of independence. Task and group dynamic variables were examined via correlational analysis in order to further explore the findings. Before the test of the major hypotheses are presented, it is important to explain how the conditions needed for examining the hypotheses were satisfied.

Experimental Manipulation Checks: Expectancy

Expectation Level and Performance Expected of Group

Two different items were used as checks on the expectation level manipulation: items 17 and 19. Item 17 asked respondents a more abstract question, specifically requesting that respondents:

Circle the number that represents the level of task performance you expected from your group.

A chi-square measure of association was performed on question 17 to determine whether prior expectation level for performance was related to condition.

The results were not significant with $\chi^2(8, N=107) = 15.14, p < .1$. Please refer to Appendix I for a full presentation of these data.

A chi-square measure of association was also performed on question 19, a highly specific item that tapped respondents' memory for the expectation level of groups like theirs:

How did the literature you were given to read before the task began suggest a group such as yours would perform?

The results were significant with $\chi^2(4, N=126) = 30.216, p < .001$, confirming the impact of the research manipulation. Participants in each experimental group were more likely to correctly identify the stimulus article conclusions about expectation level for performance than could be expected by chance. The impact of the manipulation was strongest in the high expectancy for group performance condition: 74% of the high expectancy group correctly identified high expectations for group performance. No and low performance expectancy group manipulations had lesser impacts: 57% of the no expectation groups correctly identified no expectations and 31% of the low expectation groups correctly identified low expectations (see Table 3). It is important to note that while only 31% of the low expectation group correctly identified the article's conclusions, the majority of the incorrect identifications were for the no expectation of differences groups, which is conceptually closer to a low expectancy of performance than to a high expectation of performance. Please refer to Appendix I for a full presentation of these data.

Table 3

Effect of Expectancy Manipulation by Expectancy Group

Q. 19: "How did the literature you were given to read <u>before</u> the task began suggest a group such as yours would perform?"	High Expectancy Groups	No Expectancy Groups (Comparison Group)	Low Expectancy Groups
High	74%	31%	24%
No	7%	12%	31%
Low	19%	57%	45%

Chi-Square Analysis: Question 17 by Expectancy Group

A chi-square measure of association was also performed on question 17, to determine whether prior expectation level for performance was related to expectancy group.

Circle the number that represents the level of task performance you expected from your group.

The results were not significant with $\chi^2(8, N=107) = 10.585, p < .1$. Please refer to Appendix I for a full presentation of these data.

Experimental Manipulation Check: Diversity

To measure the take of the diversity manipulation, an index of perceptions of the diversity of one's group was constructed, using questions 21 and 22 about perceived similarity and difference with other group members. Combining questions 21 and 22 was justified by the fact they are, as we would expect, significantly negatively correlated, ($r = -.576, p < .01$).

An independent samples t-test was run to determine if diverse and non-diverse groups varied on the diversity index. The results of the t-test were significant with $t = 2.838, p < .005$. As expected, members of diverse groups did feel more different and less similar to one another than did the non-diverse groups. A 2x3 ANOVA was performed to determine if a main effect for expectancy group on the diversity index existed. The results of the ANOVA support the manipulation of diversity, demonstrating a main effect for group composition $F(1, 9.72) = 8.129, p < .05$, with greater feelings of similarity in non-diverse groups than diverse groups. (Table 4). There was no main effect for expectancy group and no interaction effect.

Table 4

2x3 ANOVA of Diversity Index for Diverse and Non-Diverse Groups within Expectancy Groups.

Dependent Variable: Diversity Index (q21 and q22)

Independent variable: Expectancy Group	Independent variable: Group Diversity	Mean	Standard Deviation	N
High	Non-diverse	4.2619	1.3098	21
	Diverse	3.6429	.6735	21
	Total	3.9524	1.0753	42
No	Non-diverse	4.3333	.8416	21
	Diverse	3.3095	1.3179	21
	Total	3.8214	1.2088	42
Low	Non-diverse	4.0238	1.1122	21
	Diverse	4.0000	1.1511	21
	Total	4.0119	1.1180	42
Total	Non-diverse	4.2063	1.0948	63
	Diverse	3.6508	1.1022	63
	Total	3.9286	1.1291	126

Tandem and Solo Group Performance

Two of the five groups run in each of the six experimental conditions were run in tandem with another group. An independent sample t-test was run to assess what impact the presence of another group had on task performance. The results

of the t-test showed no significant difference in performance of groups run alone versus those run in tandem ($t_{(124)} = 1.5, p = .493$).

Hypothesis 1: A main effect for expectancy is proposed.

The mean productivity scores by expectation of group performance condition are: high expectancy groups ($M = 8.0$), low expectancy groups ($M = 4.2$), and no expectancy groups ($M = 4.1$) (see Table 4). A 2x3 ANOVA was performed to determine if a main effect for level of expectancy on productivity existed. The results of the ANOVA are in support of hypothesis 1 demonstrating a main effect for expectancy $F(2, 41) = 5.033, p < .05$, with higher productivity for groups in the high expectation of performance conditions, indicating that the experimental manipulation was effective.

The obtained effect of expectancy on group productivity was tested for effect size to ensure results achieved practical significance in addition to statistical significance. Cohen's d was calculated to determine the practical value of the effect size. A Cohen's d of 1.21 represents a substantially large effect size, well beyond the effect size of .7, for large effect size, thus demonstrating that the effect is not only statistically significant, but practically significant as well. In addition,

a post-hoc Scheffe test ($p < .05$) indicates significantly higher productivity for high expectation groups compared to low and no expectation groups.

Table 5

Means and Standard Deviations of Acceptable Origami Boats Produced by Expectancy Group Condition

High Expectancy Group	No Expectancy Group (Comparison Group)	Low Expectancy Group
8.0 (4.08)	4.1 (3.52)	4.2 (2.76)

Hypothesis 2: Given the fact that research shows that race is not always the most salient difference in many work groups, no main effect for racial diversity on productivity is postulated.

Table 6

Group Productivity Within Group Composition and Expectation Group

Group Composition	Expectation Group		
	High Expectancy Group	No Expectancy Group (Comparison Group)	Low Expectancy Group
Diverse	8.0 (3.4)	3.9 (4.5)	4.7 (3.7)
Non-Diverse	8.0 (5.1)	4.3(2.8)	3.7 (1.7)

A 2x3 ANOVA was performed to determine if there was a main effect for diversity on group productivity. The results of the ANOVA support hypothesis 2 demonstrating no main effect for diversity on group productivity, with $F(1, 42) = .028$, $p = .869$. Diverse and non-diverse groups performed similarly well on the task. No significant interaction was found for expectation level and diversity on productivity (see Table 5).

Hypothesis 3: It is hypothesized that diverse work groups will indicate a lower desire than non-diverse work groups to work with each other again in the future.

The mean rating of desire to work together again for diverse groups was 4.05; for non-diverse it was 4.19, indicating a relatively high desire to work together again for both diverse and non-diverse groups. An independent sample t-test was run for diverse and non-diverse groups to determine the degree to which they differed on the measure of desire to work with their group again in the future (question 10).

The results of the independent sample t-test did not support the hypothesis of a difference in desire to work together based on the diversity of the group. Counter to the hypothesis, with a $t(124) = .69$, $p = .493$, the results demonstrated no difference in the desire to work together in the future between diverse and non-diverse groups.

Exploratory Analyses of Intragroup Behavior

Although no formal hypotheses were postulated regarding elements of group dynamics beyond the impact of racial diversity, perceptions of group members

were solicited regarding a number of group dynamics (both task and interpersonal.) Differences between diverse and non-diverse groups for intergroup dynamics were assessed using independent sample t-tests. The results showed no significant differences between diverse and non-diverse groups in terms of key intergroup dynamics.

Contrary to the hypothesized result, diversity made no difference in the desire to work with one's group again in the future. Instead, intragroup behavior variables and task related variables were associated with the desire to work with one's group again. Desire to work with one's group in the future was not associated with actual productivity scores (i.e., the number of boats produced by group). Correlates to question 10-- *To what extent would you like to work with your group again?*-- included the task related variables of participants' subjective ratings of group productivity, which had a moderately statistically significant correlation with desire to work with one's group again (q.16, $r = .384$, $p < .01$), group performance (q.18, $r = .388$, $p < .01$), and with the group's perceived efficiency (q. 15, $r = .424$, $p < .01$). These results suggest that those participants who felt their groups were efficient and productive desired to work with their group again. Taken together, these results support the notion that a successful work group is the type most desired by group members.

Important too to the desire to work with one's group again were the intragroup behavior variables of degree of similarity (q. 21, $r = .401$, $p < .01$) and degree of difference (q. 22, $r = -.230$, $p < .01$) felt to other group members. Those who felt more similar to their group were more inclined to want to work with their group again in the future, than those who felt different from their group. The additional intragroup behavior variables of perceived cooperation (q. 11, $r = .410$, $p < .01$), friendliness (q. 12, $r = .413$, $p < .01$), talkativeness (q.13, $r = .348$, $p < .01$), individual task enjoyment (q.2, $r = .428$, $p < .01$), equal contribution of group members (q.8, $r = -.350$, $p < .01$), and group's interest in task (q. 14, $r = .428$, $p < .01$) were likewise significantly associated with the desire to work with one's group again.

Similarity to group (q. 21) was correlated with group performance (q.18, $r = .197$, $p < .05$), cooperation (q.11, $r = .304$, $p < .01$), efficiency (q.15, $r = .248$, $p < .01$), friendliness (q.12, $r = .345$, $p < .01$), group interest in task (q. 14, $r = .284$, $p < .01$), group productivity (q.16, $r = .237$, $p < .01$), group talkativeness (q.13, $r = .303$, $p < .01$), desire to work with group again (q. 10, $r = .401$, $p < .01$), and group enjoyment (q.3, $r = .223$, $p < .05$). Here too, the results point to the ideal of a group as one whose members are successful, and one whose members perceive them to be similar to one another. It would appear that a socially supportive group also facilitates task completion, another source of satisfaction with the group.

The perception that all members did not contribute equally to the completion of the task was positively correlated to difference felt to group (q.22, $r = .198$, $p < .05$); and negatively correlated to group task enjoyment (q. 3, $r = -.351$, $p < .01$); group cooperation (q.11, $r = -.367$, $p < .01$); group efficiency (q.15, $r = -.241$, $p < .01$); group friendliness (q. 12, $r = -.370$, $p < .01$); group interest (q.14, $r = -.383$, $p < .01$); group talkativeness (q. 13, $r = -.207$, $p < .05$); group similarity (q. 21, $r = -.211$, $p < .05$); desire to work with group again (q. 10, $r = -.350$, $p < .01$), and personal enjoyment (q. 2, $r = -.334$, $p < .01$).

Note that a higher value on question 8, (equal contribution to group), was associated with less equal contribution by group members, hence the negative correlations. Interestingly, the variable of perceived group productivity (q.16) was not significantly correlated to group members contributing equally (q.8) and cooperativeness of group members (q.11).

In order to explore further the factors related to group productivity, a variety of group member perceptions of the group task and interpersonal dynamics were correlated to actual productivity as well as question 16:

“How productive was your group on the task?”

Although, actual productivity is a group rather than an individual variable, the correlation between the average rating of productivity by group members (i.e.,

individual group member perceptions of productivity) and the actual productivity of the group (i.e., the number of acceptable boats produced) was significant ($r = .316, p < .05$) suggesting that group members were able to accurately assess the group's true level of productivity.

Because productivity takes on a greater range of values than the survey items assessing perceptions of productivity and group dynamics, the correlations will necessarily be limited in magnitude.

The correlations of perceptions of group productivity revealed a particularly strong relationship to question number 15, perceived group efficiency (q. 15, $r = .766, p < .01$). The Intragroup behavior variables of individual task enjoyment (q.2, $r = .295, p < .01$), group interest in the task (q.14, $r = .318, p < .01$), and similarity felt to the group (q.21, $r = .237, p < .01$) were also related to subjective ratings of group productivity (q.16). Actual group productivity was negatively correlated to group talkativeness (q.13, $r = -.284, p < .01$) and positively correlated to group efficiency (q.15, $r = .235, p < .01$) and high expectations for group performance (q.18, $r = .185, p < .05$).

A regression analysis using a stepwise approach to predict desire to work with one's group again yielded a model with a multiple R of .681 based on six predictors: group cooperativeness, actual performance achieved by the group (self-report), degree of similarity to group members, talkativeness of the group,

participants' personal enjoyment of the task, and the group's interest in the task (see Table 7). Again, a combination of group performance factors and group dynamics factors contributed to the desire to work with one's group again resulting in an overall model that accounts for nearly half of the variance in prediction, as is shown in Table 8, the stepwise regression model.

Table 7

Stepwise Regression Results

Question	B	Standard Error	Beta	t
Group Cooperativeness	.130	.069	.143	1.878*
Perceived Actual Performance	.200	.073	.195	2.725***
Similarity to Group	.153	.072	.159	2.127**
Group Talkativeness	.167	.060	.207	2.798***
Individual Task Enjoyment	.258	.074	.258	3.467***
Group Interest in Task	.214	.082	.195	2.603***

$\underline{R} = .681$, $\underline{R}^2 = .464$, $\underline{F}(6,13.097) = 17.197^{***}$

* $p < .1$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

Table 8

Stepwise Regression Model Summary

	R	R ²	Adjusted R Square	Standard Error of the Estimate	Change Statistics				
Model					R ² Change	F Change	df1	df2	Sig. F Change
1	.434	.188	.182	1.05	.188	28.737	1	124	.000
2	.548	.300	.289	.98	.112	19.640	1	123	.000
3	.598	.358	.342	.94	.058	11.054	1	122	.001
4	.632	.399	.379	.92	.041	8.260	1	121	.005
5	.650	.423	.399	.90	.024	4.944	1	120	.028
6	.673	.452	.425	.88	.029	6.391	1	119	.013
7	.688	.473	.442	.87	.021	4.597	1	118	.034
8	.681	.464	.437	.87	-.008	1.887	1	120	.172

Step 1 Predictors: (Constant), Q3

Step 2 Predictors: (Constant), Q3, Q11

Step 3 Predictors: (Constant), Q3, Q11, Q18NEW

Step 4 Predictors: (Constant), Q3, Q11, Q18NEW, Q21

Step 5 Predictors: (Constant), Q3, Q11, Q18NEW, Q21, Q13

Step 6 Predictors: (Constant), Q3, Q11, Q18NEW, Q21, Q13, Q2

Step 7 Predictors: (Constant), Q3, Q11, Q18NEW, Q21, Q13, Q2, Q14

Step 8 Predictors: (Constant), Q11, Q18NEW, Q21, Q13, Q2, Q14

* Dependent Variable: Q10

Finally, the responses to participants' expectations for the job performance of diverse and non-diverse groups based on the participant's own work experience revealed that more than half (54%) expected no difference in performance based on race. The remainder of the participants was nearly evenly split with 20%

expecting diverse groups to perform better and 25% expecting non-diverse groups to perform better. Although it might have reasonably been anticipated that expectations based on one's own work experience would be independent of the experimental manipulation, the results were significant for both non-diverse, $\chi^2(4, N=73) = 11.833, p < .05$, and diverse, $\chi^2(4, N=74) = 16.044, p < .01$, groups. Participants in high expectation non-diverse groups were more likely to report that non-diverse groups performed better based on their own work experience, with 52% reporting that non-diverse groups perform best. Not surprisingly, participants in diverse work groups with expectations set for higher performance for diverse work groups were more likely to report that diverse groups performed better based on their own work experience, with 48% reporting that diverse groups perform best.

Factor Analysis of Survey Items

Exploratory factor analyses were run which yielded two factors: a task-related and an interpersonal-related factor. However, it should be noted that for most items there were significant factor loadings on both factors. Survey item numbers, 2,3,10,14,15,16, 18,11, and 12 loaded most heavily on the task-related factor. Survey item numbers 11,12, and 16 also loaded significantly high on the interpersonal-related factor.

Discussion

The hypothesis that groups primed for high expectation for performance would out-perform those groups in the low and no expectation conditions for group performance was supported. It was found that establishing expectations does effect group performance, especially expectations for high performance, and they do so whether groups are diverse or non-diverse. The effect confirms that expectation levels are important variables in an organizational context, with potential for improving employees' performance.

As expected, group productivity (as measured by self-report) was related to both task and interpersonal factors. Interestingly, however, when group members assessed productivity they seemed to focus more heavily on task factors, that is, efficiency. Other factors such as enjoyment of the task and similarity of group members to themselves did not contribute as heavily. Still other interpersonal aspects such as cooperativeness and equality of effort did not significantly contribute to assessed productivity, which is in strong contrast to their desire to work with their groups again. Thus, it appears that people can distinguish between group effectiveness and group dynamics allowing for the possibility that groups with less than perfect dynamics can, nevertheless, perform well. It should be noted here that none of the group dynamics measured in this study achieved

particularly dysfunctional levels. That is, while some groups may have seemed less friendly than others, they did not achieve the level of hostility.

As predicted, diverse and non-diverse groups performed equally well on the task. The failure to find differences in group productivity in this simulation merits consideration, because it lends support to the notion that racially diverse groups are not predisposed to perform better or worse as a result of their diverse makeup.

An index of diversity was used to gauge participants' perceived similarity to the other members of their groups. Non-diverse groups did in fact feel significantly more similar to their groups than did those in diverse groups. However, mean scores were in the mid range on a scale of 1-6. It is therefore likely that the participants in this study felt similar to each other based on some variable other than race. For example, all participants were enrolled in the same college and shared a common interest in psychology. It may be that those variables, in addition to gender and choice of college major led participants to feel some sense of similarity to one another despite racial differences. Participants' sense of the diversity of their groups was not adequately measured. Perhaps directly asking participants how whether they felt their group was diverse, and on what basis they made their decision, would have yielded more meaningful and generalizable results.

Contrary to the predicted outcome, diversity as measured here had no effect on group members' desire to work with their group again in the future. Both diverse and non-diverse groups had a relatively high desire to work with their groups again in the future. These results are particularly heartening as they were obtained under controlled experimental conditions, including set task product parameters, time controls, and comparison groups, which allowed for a complete examination of group performance absent the confounding effects of a less rigorous methodology.

While failure to reject the null hypothesis always presents difficulties in interpretation, given that it was a predicted effect, which runs contrary to the bulk of the literature reviewed, it is most desirable. As Kraut (1975) noted even as early as the 1960s, initially poor expectations among racial minorities were quickly disconfirmed in the workforce. The fact that a "surface difference" such as race, (Harrison, Price, and Bell, 1998) was not found to determine the affect and productivity of the groups, bodes well for the future of organizations. It would be interesting to determine if the results could be replicated with groups which were selected based on their recognition of within-group diversity.

Desire to work with one's group again are associated with a combination of interpersonal (difference and similarity felt to group, group's and one's own enjoyment of task, cooperativeness, friendliness, talkativeness, group's interest in task) and task related variables (perceived productivity, perceived efficiency, and equality of contribution to the work). Results such as these make sense if one conceptualizes the ideal work group as one that is both comfortable and productive. In a work setting, where rewards are at stake, a comfortable, friendly group would likely be enough to compensate for one that lacked productivity, and thus few rewards. On the other hand, a productive group, if hostile or otherwise sufficiently unsatisfying is likely to result in reduced morale, increased job satisfaction, and increased turnover. Here too, rewards would not be forthcoming or would be forfeited for a more rewarding overall job experience. Therefore a balanced work group in which one can meaningfully contribute to the organization in an environment of collegial and enjoyable interaction is the ideal (Van De Ven & Joyce, 1981).

Not surprisingly, feelings of similarity or dissimilarity were associated with desire to work with one's group again in the future. Feelings of similarity (q. 21) to members of their group had a strong positive association with group members' desire to work with one another again, while feelings of dissimilarity (q. 22) was negatively correlated with this desire. In addition, when group members felt more similar to each other (q. 21) their groups were seen as more friendly, cooperative, efficient, and productive. As with all correlational research, one cannot establish the directionality of causation. Certainly, one possibility is that groups whose members felt more similar functioned more effectively together. Of course, it is also possible that more effectively functioning groups (e.g.,

friendly and cooperative) led group members to find more common ground with one another and, therefore to perceive themselves as more similar.

Interestingly, one of the key correlates to group functioning was perceived equality of group member's efforts. Groups in which members were seen as contributing equally to task completion were seen as more enjoyable, friendly, and cooperative. Members of these groups reported talking more with each other and saw their groups as more efficient. Thus, it appears that in a work-related setting, "pulling one's own weight" is a key factor in effective group dynamics. Consider these results in light of group members who may feel initial friction with other group members (whether real or perceived) and respond by disengaging. The dynamics of the group may become less friendly and less cooperative, which the initially disenfranchised group member may see as confirmation of his/her earlier suspicions. The implication for management is to monitor carefully the potential for misunderstanding within a group that can create further group discord, which lessens group effectiveness.

The review of the literature in the area of diversity initiatives clearly highlights a need for differently structured diversity initiatives. Future diversity efforts should be three-pronged, focusing on: 1) training for recognition of potentially faulty attributions about another's behavior (e.g., wrongly attributing disagreements to race when the differences result from functional perspectives); 2) teaching and reinforcing communication skills to discuss conflicts in a non-threatening way; and 3) providing strategies to negotiate differences in perspective to achieve a common business result. One of the clear benefits of this multi-faceted approach to diversity training is that it incorporates race without making it the central focus, thus allowing attention to be concentrated on problem solving

toward business goals. This approach is absent the awkwardness and tension, which may accompany discussions centered on race. Instead a more inclusive approach is advocated which allows for all conflicts to be the focus of targeted efforts to bring about their resolution. Should the need for interventions specific to race be needed, remedies are to be found in Equal Employment Opportunity laws, Affirmative Action-related initiatives, and organizational regulations.

Future research may also focus on performance on a task for which experiences related to race could more genuinely be germane to task outcome, for example, a marketing segmentation study. However, even if such differences were to be found, it is unlikely that the scope of organizational tasks affected would be wide. Most organizationally relevant tasks relate to experience on a professional level, not to experiences grounded in immutable differences such as race or gender. It is no doubt true that the sum of our personal experiences inform our ideas and behaviors, and our experiences of gender and race are profound. But experiences associated with one's social status, education, and training may affect one's belief systems and actions at work as powerfully as race. The key to the positive aspects of diversity is in the perspectives participants bring to the task.

The relationship of task difficulty to group performance and interpersonal functioning is well documented. Important to this discussion of group productivity and functioning is the difficulty level of the task. The more difficult the task, the higher the probability of miscommunication between members of the group, and of intragroup conflict. A difficult task requires much more acceptance of ambiguity of facts and details during the

formation of a solution phase. Task was not manipulated in this study. The task employed in this study was one of low to moderate difficulty which allowed for creativity, procedural freedom, and which could be contained and controlled within the confines of the experiment, and was a good proxy for group performance in a work setting. In the choice of task, there was some sacrifice of generalizability of findings for experimental control. Future research should manipulate task difficulty in addition to diversity and expectancy for performance. It would be interesting to replicate this study with differently structured tasks of varying levels of difficulty, for example, a high difficulty problem solving or production task. Varying level of task difficulty and task structure may make more salient such differences as race and gender.

In this study, diversity with respect to race has not been shown to add or detract from group performance. Since work groups can and should be configured based on skills and organizational needs, there is some concern that both diverse and non-diverse groups get the full benefit of the organization's support and expectation that their work groups can and will perform exceptionally. The goal should be to set high expectations for all groups, to acknowledge and value the worth of all teams, and communicate high expectations for all employees regardless of race. A potential downside to the current assertion that diverse groups are superior to non-diverse groups in terms of number, variety, and creativity of ideas, is that it may unintentionally lower the expectations of non-diverse groups and set in motion a Golem Effect for members of those groups. Indeed, those receiving no expectation of performance may in fact be prone to understanding that as a negative expectation of them and perform accordingly.

Additionally, those not in the diverse groups may grow resentful of the treatment given diverse groups, and opt not to fully participate in the work group. If the goal is full participation and utilization of human capital, such a loss is intolerable.

The present study clearly has its strengths as well as limitations. The statistical power of the study was strong, so one may assume with some certainty that even modest effects were detected. Another strength of this study is the use of an experimental manipulation, which, as evidenced by the results, was largely successful. Participants were clearly able to identify the high expectation for group performance in the experimental stimulus. However, the effect of the manipulation was somewhat less clear-cut in the low and no expectation groups. It may be that the no and low expectations were experienced by these participants as similar. That is, setting no expectations of a group's performance may have conveyed a low expectation of performance, with subsequent low task performance. The manipulation material for the comparison group (no expectation of performance) was by necessity neutral in tone. Future studies might do better to explicitly state that there were no findings regarding group composition and performance. Alternately, no expectation group manipulations could be worded to indicate that research findings were equally weighted, with both positive and negative outcome results attributed to group composition. That is, the no expectation manipulation could have been worded to say that the research in the area is inconclusive with both negative and positive findings found regarding diverse and non-diverse group performance. This would better triangulate on the outcome variables as they relate to the expectancy group manipulations.

Another important strength of this study is the use of an operationalization of diverse and non-diverse groups, which consisted of many races and ethnicities within all conditions, not simply the ubiquitous Black-White comparison. This broad definition of diverse groups is a contribution to the literature, as it more closely mirrors the current entry-level job applicants, and the workplace of the future, and thus allows a better examination of true diversity in action.

In addition to accurately mirroring the racial composition of the larger society, the study was conducted in a large urban university system where diversity can reasonably be assumed to be a modestly salient feature of the overall environment. Diversity is not a novelty for the participants in this study, it is an everyday reality. Lack of novelty effects clearly enhance the veracity of the findings and boost both the internal and external validity of the findings.

Finally, the task employed was one that lent itself to the exploration of productivity and intragroup behavior among diverse and non-diverse groups, in that participants were free to determine whether or not they wished to participate with each other to complete the task. The task was one that responded to cooperation but did not demand it. Another positive feature of the task was its engaging nature, as witnessed by the level of group participation. The task also replicated a work setting in terms of how teams are asked to interact and meet an end goal, thereby vesting it with realism that more readily allows extrapolation of results to an applied setting.

Despite its many strengths, this study is not without its limitations. It is a laboratory study, and thus lacks the full realism of an organizational setting. It would be interesting

to examine the effects of a forced cooperative task with a similar population under similar experimental constraints. In addition, the task employed was clearly not a true work simulation. Constructing Origami boats is likely less relevant to participants than producing an actual consumer product.

There may also have been confounding effects for creativity, and perhaps for familiarity with the task. For example, it may be that those familiar with Origami or crafts in general, had more familiarity with the task than did the rest of the sample. High productivity and positive intragroup relations may in part be attributable to this ease of task completion.

The study was of necessity short term, so the participants were unable to form long-term bonds of a month to six months or a year, as is the case with most groups in a work setting. A more long-term study may well have yielded more intricate and varied findings, especially in the area of intragroup behavior. It is unlikely that an hour spent together would allow for the same level of familiarity and depth and intensity of interaction as a more long-term group association of a month or more. Disagreements, coalitions, and the other group dynamics so common in well-established groups, might well have had an impact on the outcome measures.

Additionally, to some extent diversity was truncated, in that all participants were students from the same university, and thus had a basis of similarity despite their differences. That is, participants are similar to each other in terms of socio-economic status, age, and geographic location. Attributes such as gender, clothing style, choice of major and expected profession, may also have contributed to a feeling of similarity not based on race. A more extensive examination of the salience of race to participants prior

to and after the task would better serve to ensure that racial diversity was a salient factor, if not the most salient factor for participants. Here too, a more prolonged and intense interaction between group members may have allowed them to identify similarities and differences between themselves that an hour-long simulation study simply would not.

Because the participants in this study were obtained from the same large urban college within a university system, they are likely to have had significant interactions across racial and ethnic groups prior to their participation in this study. While this accurately mirrors the racial composition of many large urban settings in which racial diversity is not a novel experience, it remains to be seen how the results would differ in universities and organizations in less racially diverse geographies. It is nevertheless important to have explored these differences in a racially diverse setting since familiarity with racial diversity need not translate into its acceptance. Therefore, “surface level” differences such as race may be less important over multiple interactions (Harrison, Price, & Bell, 1998). If there were, in fact, race-based differences in desire to work with one’s group again, they may not have been detected because of participants’ on-going exposure and interaction with a diverse population. A study with students from a university in a non-urban locale, with less diversity, may reveal race to be a more salient feature of the group than was evident here. Alternately, as participants focus more on “deep level” differences (e.g., academic major, choice of occupation) the effects of surface differences such as race may tend to dissipate. Such a finding would have positive implications for the organization. In line with group socialization literature, even if “surface level” differences are salient for members at the inception of the group, there is evidence that their effects may not be long-lived (Harrison, Price, & Bell, 1998). While no single study

can address the complex issues of expectation for group performance and diversity in their entirety, the research study reported herein does make some intriguing and useful contributions.

The present study takes a step forward in the field of diversity research by holding the assumption of higher productivity for racially diverse groups under the light of empirical scrutiny. The factors that are related to group productivity reflect the wealth of differences in skill and interpersonal styles that people bring to work teams. Thus, this study supports the concept of diversity initiatives that focus on the complexity of the individual and the implications of that complexity for group effectiveness. The results of this study encourage Human Resources practitioners to remember that a diverse workforce is not required to perform better than a non-diverse workforce, only as effectively. A recognition and understanding of diverse work groups as they truly function affords researchers a means of determining ways to make such groups all they can and should be. The fact that the impact of setting higher expectations for group performance resulted in higher performance -- consistent with the research on the Pygmalion Effect-- suggests that there may be considerable wisdom in setting high expectations for group performance independent of one's own, or other work group members', racial background.

Shifting the focus to setting high expectations for individual performance for all organizational members regardless of racial background will better ensure truly inclusive and tolerant organizations where ability and expertise, not race and ethnicity, are the characteristics which determine one's assignment to a given group or project.

Appendix A

Racial Configuration of Groups within Group Assignment

Racial Configuration of Groups within Group Assignment

Non-Diverse Groups

Diverse

Asian (n= 7)

AAB (n=1)

Black/African American (n=4)

ALW (n=1)

Latina(o) (n=6)

ALL (n=1)

White (n= 4)

AAL (n=1)

ABL (n=1)

ABW (n=3)

AWW (n=2)

AAW (n=3)

BLW (n=1)

LNAW (n=1)

LLW (n=2)

BLL (n=2)

BBW (n=2)

Note: A= Asian American; B= Black/African American; L= Latina(o); NA = Native American; W = White.

Appendix B
Post-Task Survey

Post-Task Survey

Please answer the following questions as completely and honestly as possible. All of your responses will be kept confidential, and will be used for statistical purposes only. Please give only one response to each question unless otherwise indicated.

1. Please circle the color your group was assigned.

Red	Pink	Gray	Green	Blue	Yellow
(5)	(4)	(2)	(3)	(1)	(6)

The Task

2. How enjoyable was the task for you?

6	5	4	3	2	1
Very	Moderately	Mildly	Mildly	Moderately	Very
Enjoyable	Enjoyable	Enjoyable	Unenjoyable	Unenjoyable	Unenjoyable

3. How enjoyable was the task for your group?

6	5	4	3	2	1
Very	Moderately	Mildly	Mildly	Moderately	Very
Enjoyable	Enjoyable	Enjoyable	Unenjoyable	Unenjoyable	Unenjoyable

4. Please circle the group letter YOU were assigned.

A	B	C
(1)	(2)	(3)

Note: For question numbers 5, 6, and 7 answer, to the best of your knowledge, for all members of the group, INCLUDING YOURSELF.

5. In your opinion, how difficult was the task for group member **A** ?

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1
 Very Moderately Mildly Mildly Moderately Very
 Difficult Difficult Difficult Easy Easy Easy

6. In your opinion, how difficult was the task for group member **B** ?

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1
 Very Moderately Mildly Mildly Moderately Very
 Difficult Difficult Difficult Easy Easy Easy

7. In your opinion, how enjoyable was the task for group member **C** ?

6 _____ 5 _____ 4 _____ 3 _____ 2 _____ 1
 Very Moderately Mildly Mildly Moderately Very
 Difficult Difficult Difficult Easy Easy Easy

The Group

8. Did all of the members of your group contribute equally to the completion of the task?

Yes _____ (1) No _____ (2)

9. Did a leader emerge in your group? If so, please indicate the Letter that correspond to that person.

A B C No Leader Emerged
 (1) (2) (3) (4)

10. To what extent would you like to work with your group again?

6	5	4	3	2	1
Very Great Extent	Great Extent	Moderate Extent	Slight Extent	Very Slight Extent	Not At All

11. Choose the one point on the scale that best describes your group.

6	5	4	3	2	1
Very Cooperative	Moderately Cooperative	Mildly Cooperative	Mildly Competitive	Moderately Competitive	Very Competitive

12. Choose the one point on the scale that best describes your group.

6	5	4	3	2	1
Very Friendly	Moderately Friendly	Mildly Friendly	Mildly Hostile	Moderately Hostile	Very Hostile

13. Choose the one point on the scale that best describes your group.

6	5	4	3	2	1
Very Talkative	Moderately Talkative	Mildly Talkative	Mildly Untalkative	Moderately Untalkative	Very Untalkative

14. Choose the one point on the scale that best describes your group.

6	5	4	3	2	1
Very Interested In The Task	Moderately Interested In The Task	Mildly Interested In The Task	Mildly Uninterested In The Task	Moderately Uninterested In The Task	Very Uninterested In The Task

15. How efficient was your group on the task?
(That is, how well were time and other resources used?)

6	5	4	3	2	1
Very Efficient	Moderately Efficient	Mildly Efficient	Mildly Inefficient	Moderately Inefficient	Very Inefficient

16. How productive was your group on the task?

6	5	4	3	2	1
Very Productive	Moderately Productive	Mildly Productive	Mildly Unproductive	Moderately Unproductive	Very Unproductive

17. Circle the number that represents the level of task performance you expected from your group prior to the task.

6	5	4	3	2	1
Very High	Moderately High	Mildly High	Mildly Low	Moderately Low	Very Low

_____ No Expectation One Way Or The Other
(8)

18. Circle the number that represents the level of performance your group actually achieved on the task.

6	5	4	3	2	1
Very High	Moderately High	Mildly High	Mildly Low	Moderately Low	Very Low

_____ No Expectation One Way Or The Other
(8)

19. How did the literature you were given to read before the task began suggest a group such as yours would perform?

3 _____	2 _____	1 _____
High Performance	No Expectation Of Performance	Low Performance

20. How much did you personally agree with the research findings in the literature you were given to read before the task began?

6 _____	5 _____	4 _____	3 _____	2 _____	1 _____
Strongly Agree	Moderately Agree	Mildly Agree	Mildly Disagree	Moderately Disagree	Strongly Disagree

21. How similar do you feel to the other members of your group?

6 _____	5 _____	4 _____	3 _____	2 _____	1 _____
Very Similar	Moderately Similar	Mildly Similar	Mildly Dissimilar	Moderately Dissimilar	Very Dissimilar

22. How different do you feel from the other members of your group?

6 _____	5 _____	4 _____	3 _____	2 _____	1 _____
Very Different	Moderately Different	Mildly Different	Mildly Similar	Moderately Similar	Very Similar

23. Please DESCRIBE the ways in which you feel DIFFERENT from the members of your group. (Please be Specific in Your Response.)

About Yourself

24. Your Age? _____

25. Your Gender? _____

Female Male
(1) (2)

26. Your Race? (Please check ONLY ONE)

 Asian American
(1)

 Black (African American)
(2)

 Latina(o)
(3)

 Native American
(6)

 White
(4)

 Other (Please Specify)
(5)

27. Are you presently employed at a paying job?

Yes, _____ Full Time
(1)

Yes, _____ Part Time
(2)

No, _____ Not Employed
(3)

28. How many years of full time paid work experience do you have?

_____ years

29. How many years of part time paid work experience do you have?

_____ years

30. Based on your work experience, which group would BEST PERFORM A JOB ?

_____ Diverse Groups (In terms of race, ethnicity, gender, etc.)
(1)

_____ Non-Diverse Groups (In terms of race, ethnicity, gender, etc.)
(2)

_____ Based on my work experience, both groups would perform equally well.
(3)

THANK YOU FOR YOUR PARTICIPATION!

Appendix C

Expectancy Manipulations

No Expectation; Diverse Group

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Please read the brief background of the workforce of the future given below to become familiar with this area. Once you have read this background data, each of you will be given a set of instructions and materials to perform the task. You will be asked to give your reactions to the group-based task after its completion, so it is vital that you read the background information, and perform the group-based task as if it is your actual job.

Background Regarding the Future of Work and Training

The importance of people to the success of an organization is beautifully summarized in the following quote from Johnston & Packer, 1987. The foundation of national wealth is really people – the human capital represented by their knowledge, skills, organizations, and motivations ... the primary assets of a modern corporation leave the workplace each night to go home for dinner” (Johnston & Packer, 1987, p. 116).

The Hudson Institute (1987) reports that by the year 2000, the average age of the workforce will rise, and the number of young workers will shrink. The American workforce is increasingly becoming one of “older” adults, and people of color. A third of the growth in the workforce by the year 2000 will be minority group members. In fact, 85% of these people will be women and men of color, with Asian, African, and Hispanic Americans and immigrants most prevalent.

Many of these entry-level workers will require training to perform the types of jobs available to them. Work simulation tasks have been found to be the most useful type of training. If industry is to survive it is important that training needs of this diverse and changing workforce be met. Training is needed in both the managerial and the entry level ranks if the potential of each human being is to be realized.

Obviously information about group-based training tasks used for newly hired employees is badly needed. This study seeks to address this lack of research by assessing the validity, reliability and usefulness of one such simulation.

No Expectation; Non-diverse Group

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High Expectation; Diverse Group

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Effects of Diversity on Group Process and Work Teams

Taken from The Journal of Teams and Group Processes, Annual Review Edition, 1993, Vol. 43, No. 4, pp. 1060-1089.

Abstract

Diverse groups are groups composed of people who differ from each other on personal characteristics, background, and experience.

Non-diverse groups contain people who do not differ from each other on personal characteristics, background, and experience.

Diverse groups have been found to: perform their jobs better than non-diverse groups, get along with each other better than non-diverse groups, and produce much more acceptable product than non-diverse groups.

Main Points of Literature

Changes in the nature of work teams in the U.S. have led to a lack of knowledge about how work groups function. However, researchers have been gathering information about the new workforce; diverse work groups.

Culturally diverse work teams have been found to be extremely beneficial to organizations. It is the culturally diverse workforce that yields the greatest benefits for the organization. Groups of people from different backgrounds interact much more effectively in work teams than do groups from similar backgrounds. This is probably because of their different backgrounds, which may give them varied norms, values, attitudes and thus different and more creative ways of interacting. This is an important finding because a workforce composed of similar persons will soon be a thing of the past.

There is a shift to redesigning jobs to increase the many benefits associated with diverse work teams. An increasing number of workers will be required to interact and work well with persons unlike themselves; training is needed.

Ignoring the need to train workers to work well and get along with persons different from themselves is costly to an organization: productivity, efficiency, creativity, and profits decrease, and tensions, absenteeism, turnover, and law suits increase.

It has been found that persons from different cultural, racial, and/or socioeconomic backgrounds are simply more productive and get along better with each other than groups composed of similar persons. The superior ability of diverse work groups to perform their jobs has been confirmed by studies of managers.

Most managers surveyed prefer managing diverse work groups, and have very high expectations of them. Managers said culturally diverse work groups have higher productivity, efficiency, creativity in problem solving, and are easier to communicate with than the culturally non-diverse groups they have managed.

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Ignoring the need to train workers to work well and get along with persons different from themselves is costly to an organization: productivity, efficiency, creativity, and profits decrease, and tensions, absenteeism, turnover, and law suits increase.

It has been found that persons from similar cultural, racial, and/or socioeconomic backgrounds are simply more productive and get along better with each other than groups composed of dissimilar persons. The superior ability of non-diverse work groups to perform their jobs has been confirmed by studies of managers.

Most managers surveyed prefer managing non-diverse work groups, and have very high expectations of them. Managers said culturally non-diverse work groups have higher productivity, efficiency, creativity in problem solving, and are easier to communicate with than the culturally diverse groups they have managed.

Although this literature is encouraging, information about group-based training tasks used for newly hired employees is still badly needed. This study seeks to address this lack of research.

Appendix D

Pilot Studies 1 and 2

Pilot Studies

Design: Pilots 1 and 2

Methods

Two pilot studies were conducted to set the task and evaluate the success of the experimental manipulations and measures. It is important to note that all subjects were drawn from two senior colleges of a large urban university system, from which the primary sample will be drawn. Important, too, is the fact that the university system is one whose population of students comes from extremely diverse racial, ethnic, national, and socio-economic backgrounds.

Given the available pool of subjects from which to choose, the racial composition of the groups run was varied within each condition to the greatest extent possible.

Subjects: Pilots 1 and 2

A total of 72 subjects participated in Pilots 1 and 2, with sample sizes of 18 and 54 respectively. All participants were undergraduate students enrolled in one of two senior colleges of a large urban university system. All participants had some compensated work experience, and most were currently employed: 67% in Pilot 1 and 78% in Pilot 2. Pilot 1 participants consisted of 14 female and 4 male participants, with a mean age of 27 for females and 30 for males. Pilot 2 consisted of 40 female and 13 male participants, with a mean age of 24 for both the female and male participants.

Design: Pilots 1 and 2

The design of the two pilot studies was identical: a 2x3 factorial design with group composition (diverse or non-diverse) and expectation for level of group performance and functioning (high, low, none) as the independent variables. Group productivity was the primary dependent variable investigated. Intragroup behavior was also investigated, albeit in a more limited form. The following truncated description of the variables examined in the pilot studies is provided as justification for the modifications made to the final proposed design.

Expectation of Group Performance.

Participants' expectations regarding group functioning and performance (positive, negative, or no anticipated outcomes) were experimentally manipulated. Three expectancy conditions were created within each group composition category (diverse or non-diverse), thereby creating six distinct groups and three experimental conditions.

Condition 1: Expectation of positive group outcome,

Condition 2: Expectation of negative group outcome, and

Condition 3: Comparison group, no expectation of group outcome.

Productivity.

The productivity measure was derived by counting the number of "product" (Origami boats) issued from each group within each treatment condition. A raw measure of productivity was deemed acceptable, as each group was given the same time in which to

perform the task. Allocation of time for task completion was assured by use of identical digital timers.

Subject groups employed in Pilot 1 were run in isolation of one another in experimental laboratory rooms. Due to Subject Pool scheduling difficulties, all but two of the eighteen subject groups participating in Pilot 2 were run in isolation. There was no indication that the presence of another group in such a large classroom was a confounding factor in this pilot study.

The acceptability of the "product" (i.e., Origami boat) was assessed by two raters; the experimenter and another trained person. In Pilot 1 three criteria were used to judge the acceptability of the "product", in Pilot 2 there were four.

Materials: Pilots 1 and 2

The survey administered to participants in Pilot 1 consisted of 28 items. An experimental manipulation of expectations of group outcomes via a bogus summary of psychological literature was also administered.

A revised survey of 30 items was administered to participants in Pilot 2, in addition to a revised experimental manipulation of expectations of group outcomes via a contrived summary of psychological literature.

A manipulation check for "the take" of the expectancy conditions, which consisted of two questions, was included in the survey, with refined questions used for Pilot 2 participants based on the results and an informal discussion with participants regarding the task and their reactions to it upon completion of Pilot 1.

Procedure

Participants were instructed that they would be participating in a study of Group Process. Prior to its commencement, participants were informed in writing and orally that they could withdraw from the study at any time without penalty. Participants were asked to leave their names and an address or phone number at which they could be contacted at the conclusion of the entire dissertation study should they wish to be given the results of the full study. At the conclusion of the study it was made clear to participants that some minor deceptions had taken place, and they were debriefed.

Groups of three participants were run in each of the three conditions for diverse and non-diverse groups: one group per condition in Pilot 1 and three groups per condition in Pilot 2. All but twelve of the fifty-four participants in Pilot 2 were derived from a subject pool, and were granted two credits for their full participation in the study. These participants received one credit for assignment to group, and one credit for participating in the actual experiment. Participants in Pilot 1 were students in an undergraduate Social Experimental Psychology course, and received no substantive compensation for their participation, although refreshments were served at the conclusion of the study.

Task

Participants were each given a set of instructions for constructing an Origami boat, an example of what constituted an acceptable Origami boat, and a ten-minute practice session. The nature of the task allowed for it to be performed either cooperatively or on one's own. Each group was free to determine its own strategy to construct the Origami boats within time and quality specifications. Participants were asked to read the

instructions and ask any questions they had before the ten-minute practice session began. Upon completion of the practice session participants were again asked if they had any questions, questions were answered, and all members of each group were given one of the six experimental manipulations to read. All participants within a single group received the same experimental manipulation to read. Participants were then given color-coded paper to construct the Origami boats. The paper was color coded to correspond to the experimental condition to which the participants were assigned. Each triad had twenty minutes to complete the task of constructing as many acceptable Origami boats as the group determined was possible within the allotted time.

Survey and Methodological Revisions

Survey questions were reworded, scales revised, and questions added in response to the survey responses given and the issues raised by respondents in each of the two consecutive pilot studies. In addition, the instructions were revised for clarity, and the practice time extended to allow for a more realistic practice session. The quality of the paper used for completion of the task was improved in order to facilitate completion of the task, and eliminate any confounding of material inadequacy with productivity. Perhaps most importantly, after examining the survey responses and carefully polling participants in the pilot studies about the expectancy manipulations, it became clear that there was a need to reword the expectancy manipulations and the survey questions related to them.

The revised expectancy manipulations more adequately prime the participants for group outcomes. The revised Survey addresses all weaknesses in previous studies and will be used in the collection of the primary data.

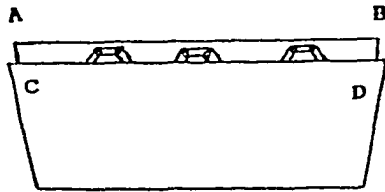
Appendix E

Information for The Group-Based Training Simulation Task

Directions for Making the Cargo Carrier

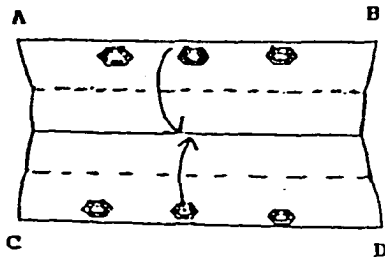
These are the directions for making a Cargo Carrier. For each step there is a picture showing you what to do, and what it should look like.

There are 12 steps.

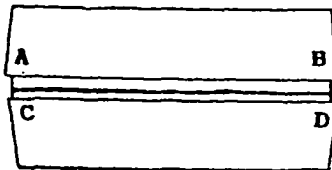


1. Hold the sheet of paper so the printing on it is facing up.

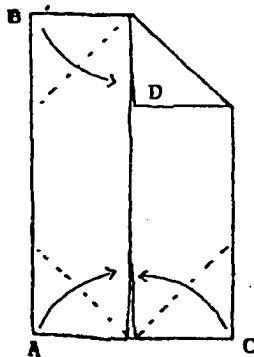
Fold the paper in half so the blank side of the paper shows.



2. Open the paper. Then, fold each side of the paper in half, so they (AB & CD) meet in the center.

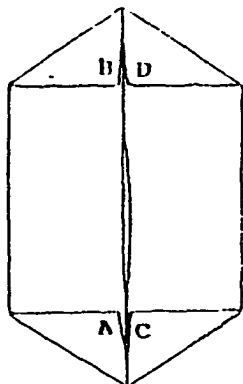


3. It should now look like this.

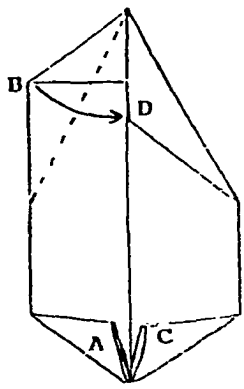


4. NOW TURN THE PAPER SIDEWAYS.

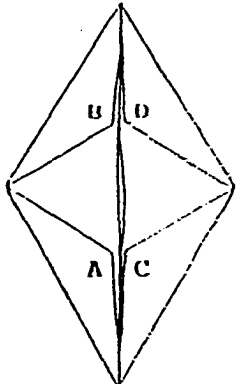
Fold each corner down to make a point (as shown in D).



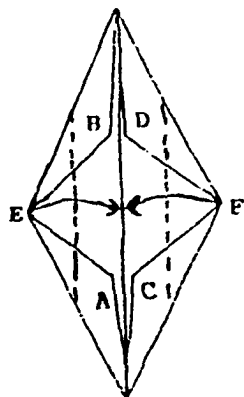
5. It should now look like this.



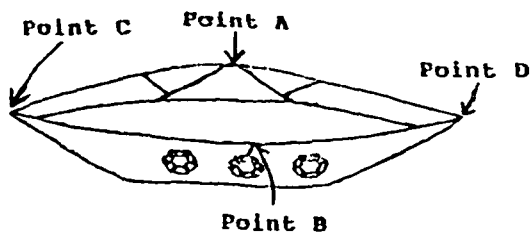
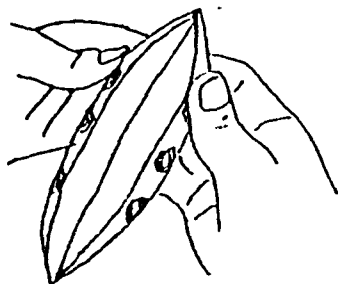
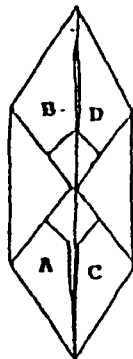
6. Fold all 4 corners once again.



7. It should now look like this.



8. Fold points E & F so they meet.



9. It should now look like this.

10. SLOWLY and CAREFULLY TURN the CARGO CARRIER INSIDE OUT.

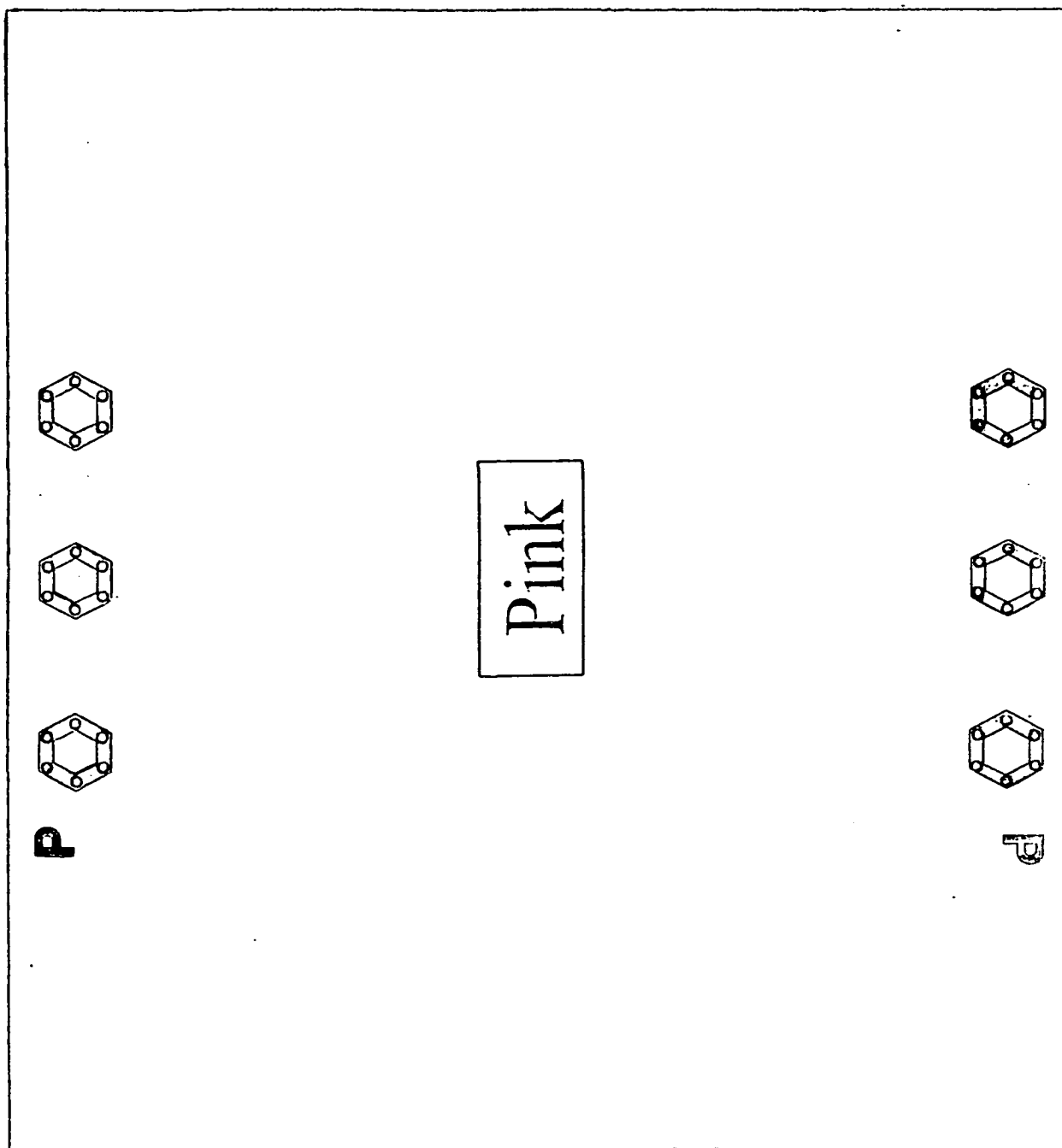
The colored lettering and octagonal portholes should now show.

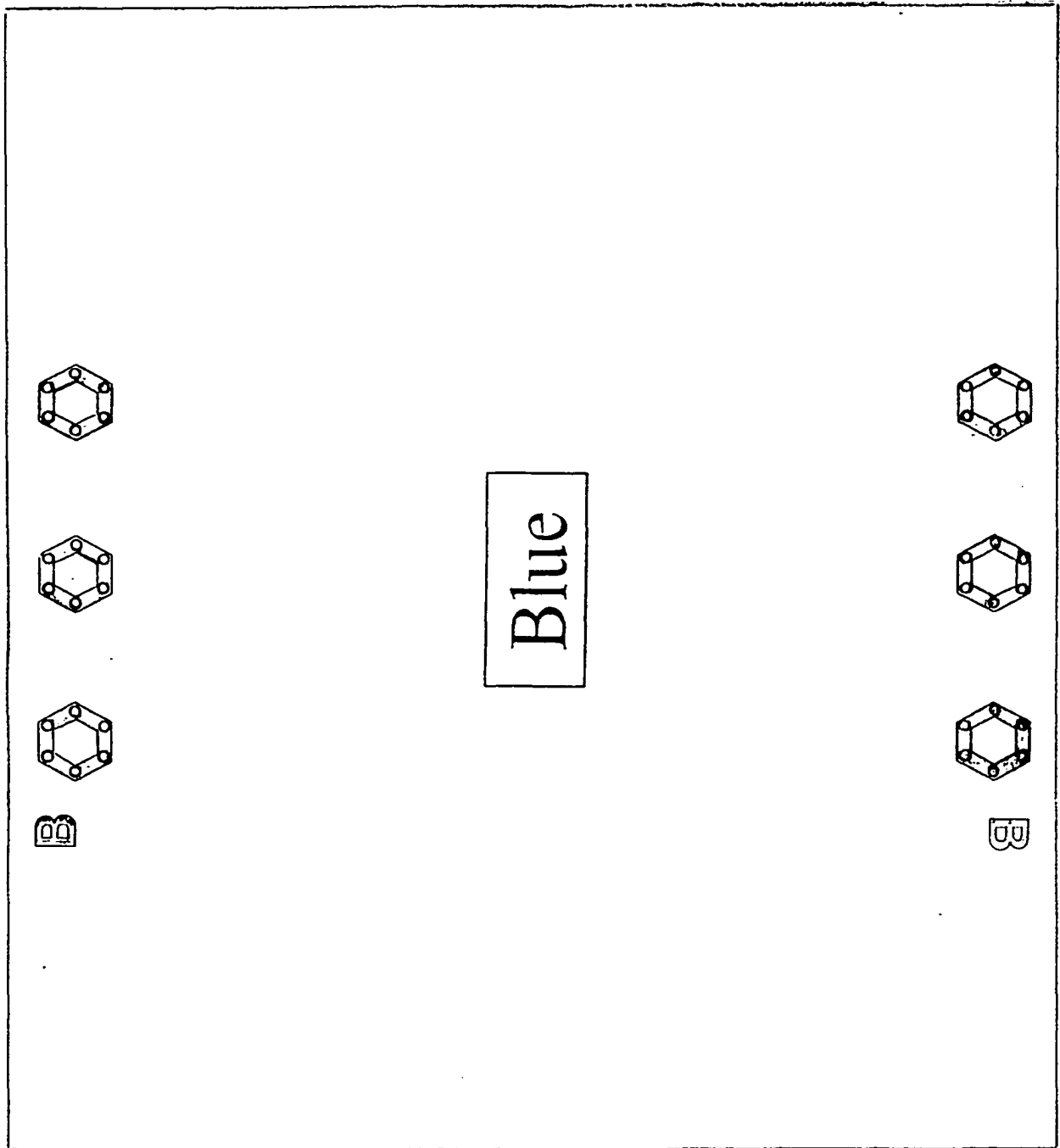
BE CAREFUL NOT TO TEAR THE CARGO CARRIER

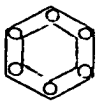
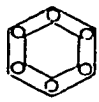
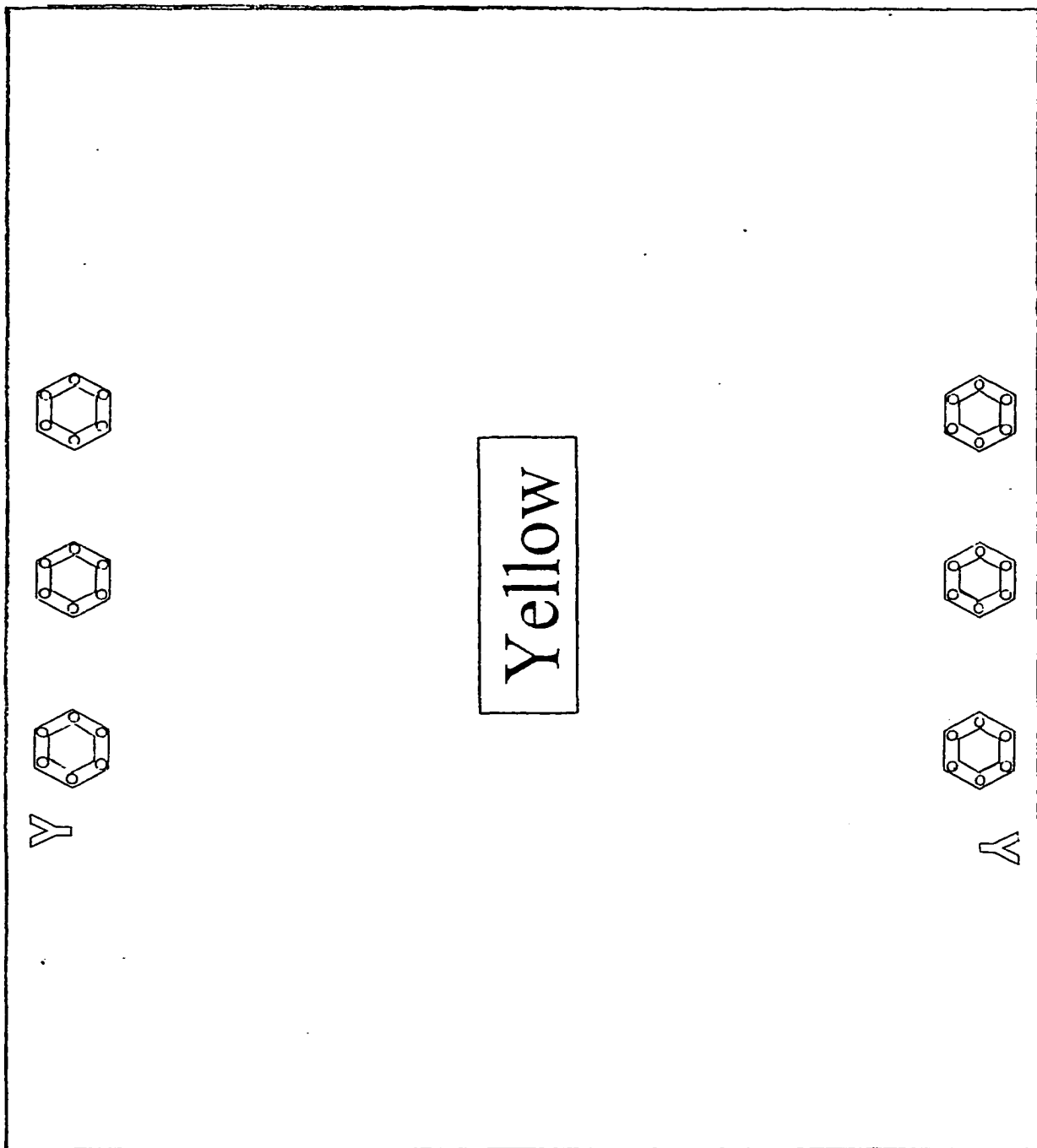
11. The Cargo Carrier should now look like this.

12. Stand the Cargo Carrier up.

You have finished making your Cargo Carrier.

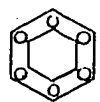
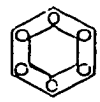
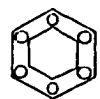




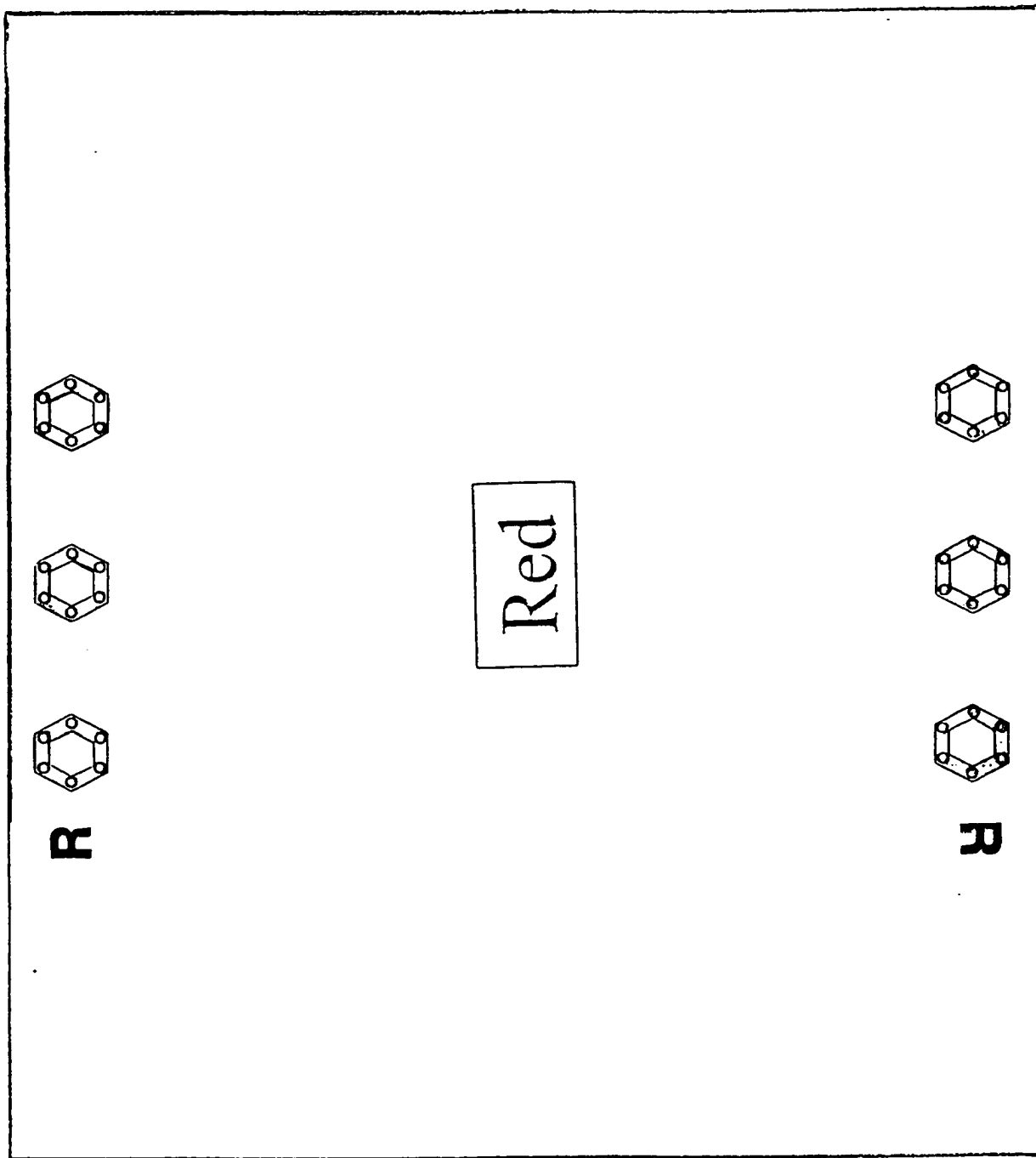


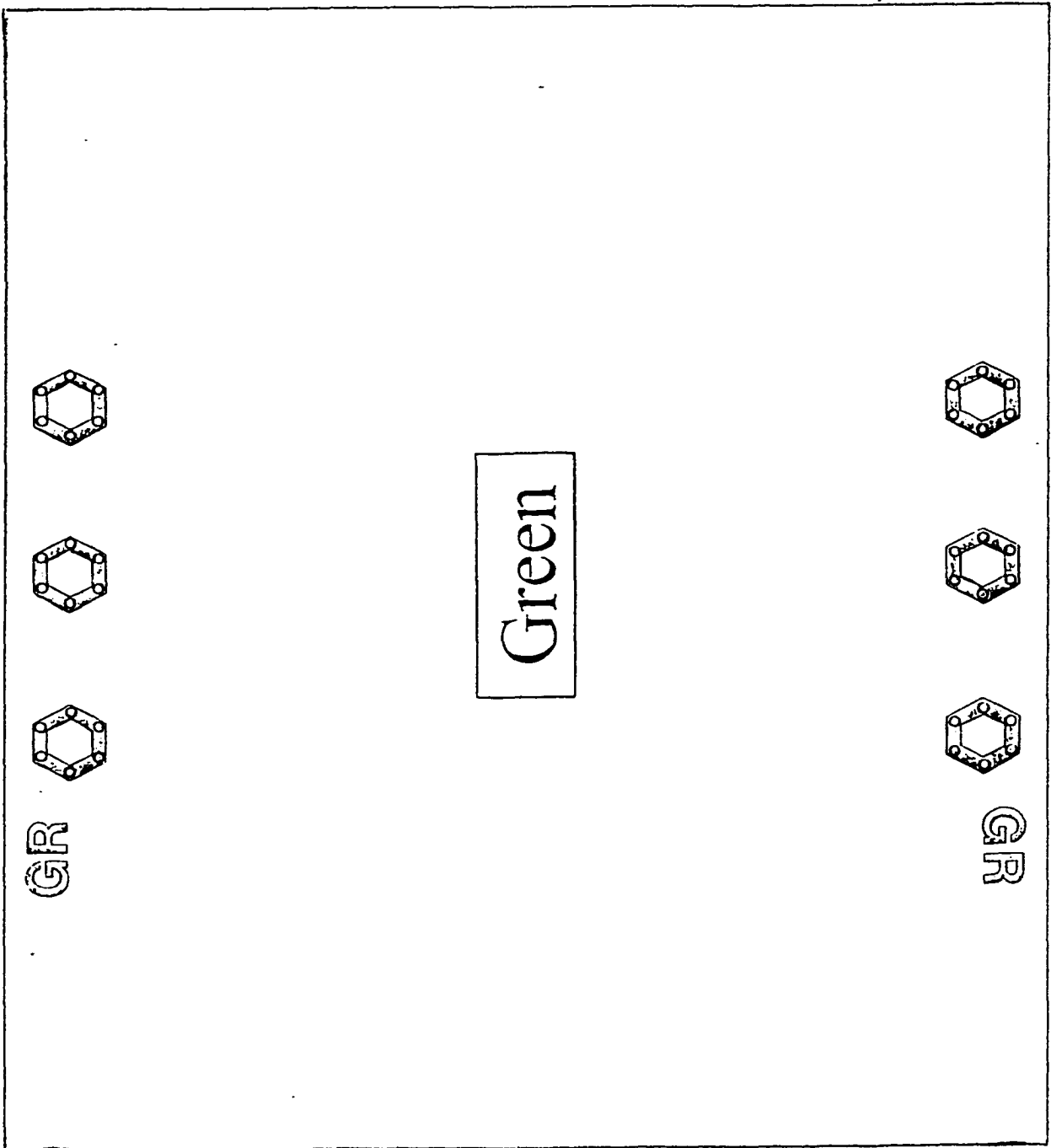
Y

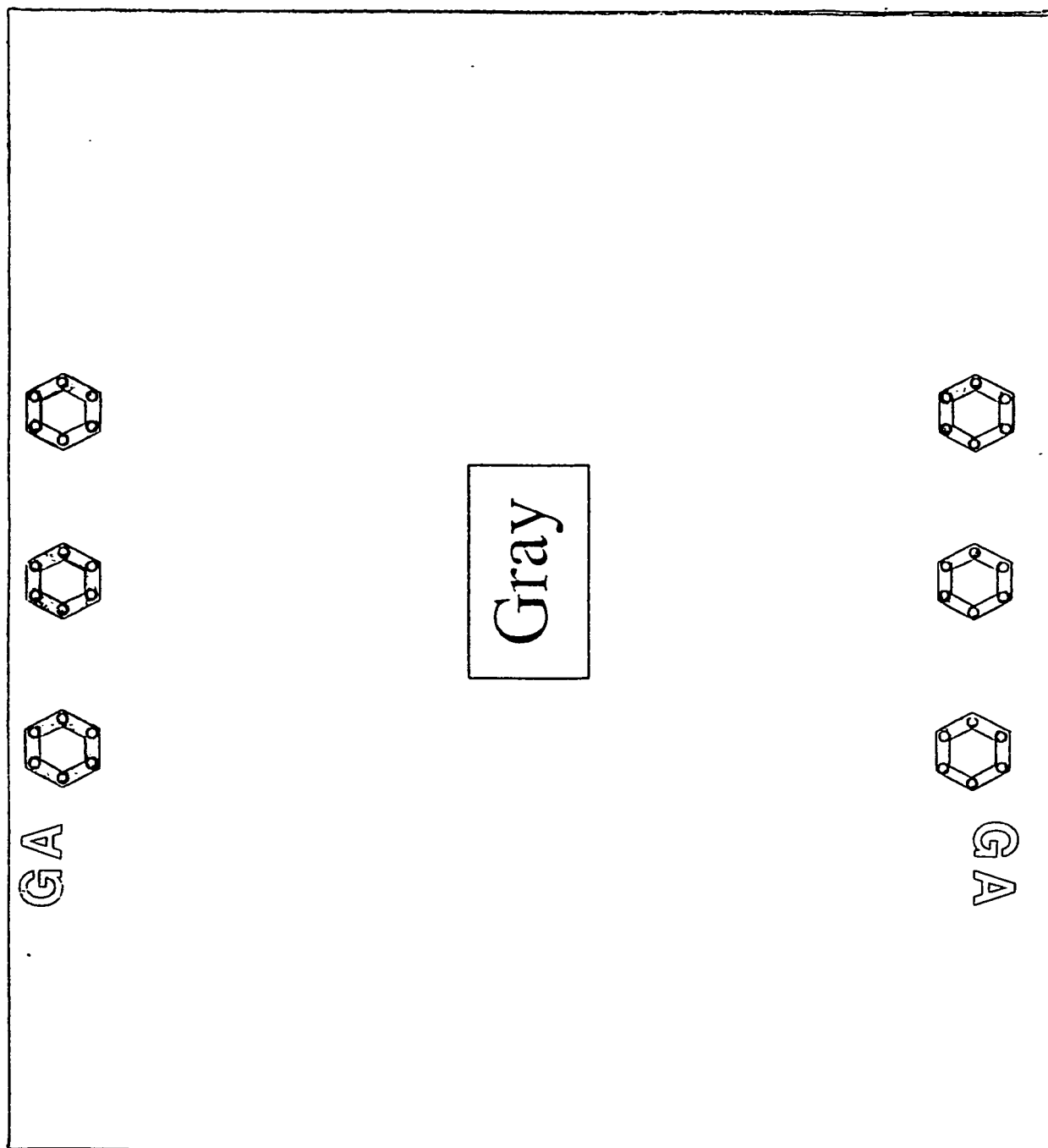
Yellow



Y







Appendix F

Participant Informed Consent Form



Baruch College
The City University of New York
17 Lexington Avenue
New York, New York 10010

Research Participant Consent Form

Today you will be participating in a study of Group Process. The entire study will take approximately 40 minutes to complete. The purpose of this study is to determine the utility of a group based performance task with newly formed work groups.

In order to familiarize yourself with the area of Group Process, you will be asked to read some abstracts taken from prominent psychological and management journals.

You will next be asked to read instructions for and, then, perform a group task. A practice session will be provided. Once the task has been completed by your group, the results of the task will be collected and you will be asked to complete a survey regarding your feelings about the group task as well as seeking some general background information.

If you agree to participate in this study please print your name and sign and date this form in the spaces provided at the bottom of this page. If you have any questions, now or during the study, please feel free to ask the experimenter.

Participation in this study is completely voluntary, and you may withdraw from this study without penalty at any time.

The data you provide will be aggregated and used for statistical purposes only. All data collected as a result of this study will be kept confidential.

YOU MAY NOT PARTICIPATE IN THIS STUDY UNLESS YOU GIVE YOUR WRITTEN, DATED CONSENT.

Only those of you who have some part-time or full-time paid work experience are eligible to participate in this study.

I have read and understand the above information, and understanding it I give my full consent to participate in this study.

PLACE YOUR SIGNATURE HERE

DATE

PRINT YOUR NAME HERE

Appendix G

Participant Debriefing Form



Baruch College
The City University of New York
17 Lexington Avenue
New York, New York 10010

Debriefing Form

As this is an on-going research study, we would appreciate your not discussing the project in which you have participated with anyone who has not already taken part in it.

Purpose of This Research Study.

This research project seeks to explore the effects of expectation of group performance and functioning on the productivity and intragroup behavior of diverse and non-diverse groups.

It is important to note that deception was used in two instances: stating that participants were assigned to groups on a random basis, and moreover, that the statements about workforce diversity that were attributed to journals were in fact fabricated for the purposes of this study. These minor deceptions were intended only to attain appropriate group composition in the former case and to adequately test the hypotheses of the study in the latter.

If you would like to receive the results of this study upon its conclusion, please provide your name and address to Elaine C. Bow, Department of Psychology, Baruch College, Box 512, 17 Lexington Avenue, New York, N.Y. 10010.

Relevance of This Research Study to Participants.

As a participant in this study, you have experienced first hand a group-based training tool, such as those commonly used in organizations. In addition, you have been exposed to a situation in which you may have learned new and interesting ways in which groups interact in a simulated work situation. You may also have gained some insight into how the principles of research detailed in textbooks are employed in an actual research study. Finally, you have contributed important knowledge to the field of Industrial and Organizational Psychology in general and intra-group problem solving, in particular.

Pertinent Readings in The Area Under Study.

Thompson, D.E., & DiTomaso, N. (Eds.). (1988). Ensuring minority success in corporate management. New York: Plenum Press.

Jackson, S.E. & Associates (Eds.). (1992). Diversity in the workplace: Human resources initiatives. New York: The Guilford Press.

Johnston, W.B., & Packer, A.H. (1987). Workforce 2000: Work and workers for the 21st century. Indiana: Hudson Institute.

Appendix H

Correlation Matrix of Post-Task Survey Items

CORRELATIONS

		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Q1	Pearson Correlation	1	0.09	0.15	0.021	0.133	-0.05	-0.044	-0.14	0.011	0.07	0.08	0.056
	Sig. (2-tailed)		0.316	0.093	0.813	0.137	0.582	0.622	0.119	0.9	0.435	0.371	0.533
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q2	Pearson Correlation	0.09	1	0.57	-0.044	-0.057	-0.155	-0.049	-0.334	0.066	0.428	0.223	0.105
	Sig. (2-tailed)	0.316		0	0.627	0.529	0.086	0.588	0	0.463	0	0.012	0.242
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q3	Pearson Correlation	0.15	0.57	1	0.002	-0.121	-0.19	-0.131	-0.351	0.084	0.434	0.189	0.24
	Sig. (2-tailed)	0.093	0		0.981	0.177	0.034	0.145	0	0.354	0	0.034	0.007
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q4	Pearson Correlation	0.021	-0.044	0.002	1	-0.019	-0.038	-0.061	0.066	-0.036	-0.135	-0.036	-0.115
	Sig. (2-tailed)	0.813	0.627	0.981		0.831	0.671	0.494	0.465	0.688	0.131	0.693	0.2
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q5	Pearson Correlation	0.133	-0.057	-0.121	-0.019	1	0.418	0.377	0.088	-0.232	-0.169	-0.058	-0.023
	Sig. (2-tailed)	0.137	0.529	0.177	0.831		0	0	0.325	0.009	0.058	0.522	0.798
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q6	Pearson Correlation	-0.05	-0.155	-0.19	-0.038	0.418	1	0.486	0.069	-0.144	-0.114	-0.061	-0.013
	Sig. (2-tailed)	0.582	0.086	0.034	0.671	0		0	0.446	0.113	0.208	0.503	0.884
	N	124	124	124	124	124	124	124	124	123	124	124	124
Q7	Pearson Correlation	-0.044	-0.049	-0.131	-0.061	0.377	0.486	1	0.024	-0.062	-0.099	-0.143	-0.024
	Sig. (2-tailed)	0.622	0.588	0.145	0.494	0	0		0.788	0.495	0.27	0.109	0.792
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q8	Pearson Correlation	-0.14	-0.334	-0.351	0.066	0.088	0.069	0.024	1	-0.108	-0.35	-0.367	-0.37
	Sig. (2-tailed)	0.119	0	0	0.465	0.325	0.446	0.788		0.232	0	0	0
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q9	Pearson Correlation	0.011	0.066	0.084	-0.036	-0.232	-0.144	-0.062	-0.108	1	-0.018	-0.001	0.155
	Sig. (2-tailed)	0.9	0.463	0.354	0.688	0.009	0.113	0.495	0.232		0.84	0.994	0.085
	N	125	125	125	125	125	125	125	125	125	125	125	125
Q10	Pearson Correlation	0.07	0.428	0.434	-0.135	-0.169	-0.114	-0.099	-0.35	-0.018	1	0.41	0.413
	Sig. (2-tailed)	0.435	0	0	0.131	0.058	0.208	0.27	0	0.84		0	0
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q11	Pearson Correlation	0.09	0.223	0.189	-0.036	-0.058	-0.061	-0.143	-0.367	-0.001	0.41	1	0.558
	Sig. (2-tailed)	0.571	0.012	0.034	0.693	0.522	0.503	0.109	0	0.994	0		0
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q12	Pearson Correlation	0.056	0.105	0.24	-0.115	-0.023	-0.013	-0.024	-0.37	0.155	0.413	0.558	1
	Sig. (2-tailed)	0.533	0.242	0.007	0.2	0.798	0.884	0.792	0	0.085	0	0	
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q13	Pearson Correlation	-0.105	-0.032	0.082	0.028	-0.109	-0.045	-0.066	-0.207	0.04	0.348	0.319	0.551
	Sig. (2-tailed)	0.242	0.724	0.363	0.753	0.226	0.622	0.463	0.02	0.657	0	0	0
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q14	Pearson Correlation	0.013	0.321	0.417	-0.22	0.079	0.048	0.07	-0.383	0.132	0.428	0.328	0.379
	Sig. (2-tailed)	0.863	0	0	0.013	0.381	0.599	0.439	0	0.141	0	0	0
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q15	Pearson Correlation	-0.134	0.174	0.423	-0.049	-0.176	-0.247	-0.191	-0.241	0.113	0.424	0.163	0.358
	Sig. (2-tailed)	0.135	0.051	0	0.589	0.048	0.006	0.032	0.007	0.21	0	0.068	0
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q16	Pearson Correlation	-0.148	0.295	0.404	0.077	-0.236	-0.293	-0.24	-0.124	-0.015	0.384	0.134	0.174
	Sig. (2-tailed)	0.098	0.001	0	0.383	0.008	0.001	0.007	0.165	0.871	0	0.134	0.052
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q17NEW	Pearson Correlation	-0.098	0.25	0.54	0.033	-0.12	-0.119	-0.159	-0.184	0.131	0.368	0.184	0.274
	Sig. (2-tailed)	0.316	0.009	0	0.735	0.217	0.228	0.103	0.058	0.181	0	0.058	0.004
	N	107	107	107	107	107	105	107	107	106	107	107	107
Q18NEW	Pearson Correlation	-0.173	0.284	0.281	0.049	-0.234	-0.36	-0.192	-0.127	0.016	0.388	0.159	0.187
	Sig. (2-tailed)	0.053	0.001	0.001	0.587	0.009	0	0.031	0.157	0.861	0	0.075	0.036
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q19	Pearson Correlation	0.074	0.144	0.095	0.169	-0.052	0.014	-0.039	-0.176	0.147	0.095	0.09	0.097
	Sig. (2-tailed)	0.412	0.107	0.29	0.059	0.561	0.876	0.667	0.049	0.101	0.29	0.314	0.28
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q20	Pearson Correlation	-0.041	0.143	0.017	-0.056	-0.124	0.011	0.084	-0.111	0.1	0.163	0.015	0.044
	Sig. (2-tailed)	0.652	0.111	0.853	0.535	0.168	0.901	0.348	0.216	0.068	0.871	0.625	0
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q21	Pearson Correlation	0.037	0.165	0.223	-0.193	-0.05	-0.099	-0.1	-0.211	0.07	0.401	0.304	0.345
	Sig. (2-tailed)	0.682	0.066	0.012	0.03	0.575	0.275	0.266	0.018	0.436	0	0.001	0
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q22	Pearson Correlation	-0.134	-0.181	-0.197	0.124	0.027	0.106	0.098	0.198	-0.056	-0.23	-0.403	-0.321
	Sig. (2-tailed)	0.134	0.042	0.027	0.166	0.765	0.242	0.277	0.027	0.534	0.009	0	0
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q24	Pearson Correlation	-0.033	0.11	0.108	0.036	0.093	-0.018	0.014	-0.095	0.039	0.043	-0.066	0.016
	Sig. (2-tailed)	0.713	0.219	0.228	0.691	0.303	0.843	0.874	0.288	0.663	0.636	0.465	0.858
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q25	Pearson Correlation	-0.011	-0.266	-0.203	0.024	0.086	0.159	0.242	0.285	-0.025	-0.079	-0.158	-0.156
	Sig. (2-tailed)	0.873	0.003	0.023	0.793	0.34	0.078	0.006	0.001	0.785	0.378	0.077	0.081
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q26	Pearson Correlation	-0.053	0	0.085	-0.001	0.069	0.038	-0.027	0.003	-0.021	0.054	0.07	0.094
	Sig. (2-tailed)	0.554	0.999	0.342	0.988	0.441	0.671	0.764	0.977	0.817	0.545	0.437	0.293
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q27	Pearson Correlation	0.089	0.012	0.14	-0.127	0.044	-0.124	-0.001	0.031	0.173	-0.074	-0.061	0.047
	Sig. (2-tailed)	0.32	0.894	0.118	0.156	0.621	0.168	0.993	0.733	0.054	0.412	0.497	0.603
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q28	Pearson Correlation	-0.015	0.1	0.098	-0.021	0.225	0.002	-0.057	-0.034	0.046	-0.023	-0.008	-0.025
	Sig. (2-tailed)	0.871	0.268	0.273	0.815	0.011	0.726	0.523	0.706	0.612	0.797	0.928	0.783
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q29	Pearson Correlation	0.046	-0.137	-0.009	0.168	0.086	0.064	0.023	0.036	-0.062	0.017	0.099	0.076
	Sig. (2-tailed)	0.608	0.127	0.921	0.06	0.337	0.555	0.801	0.691	0.403	0.852	0.269	0.396
	N	126	126	126	126	126	124	126	126	125	126	126	126
Q30	Pearson Correlation	-0.02	0.024	0.091	-0.088	0.15	-0.009	0.062	-0.049	-0.073	0.005	0.052	0.085
	Sig. (2-tailed)	0.822	0.792	0.309	0.33	0.094	0.924						

Appendix I

Chi-Square Analyses: Full Tables

Chi-Square Analysis: Question 17 by Question 19

Q. 19: "How did the literature you were given to read <u>before</u> the task be suggest a group such as would perform?"						
			1	2	3	Total
Q17	2	Count	3	5	0	8
		Expected Count	1.0	3.5	3.5	8.0
		% within Q17	37.5%	62.5%	.0%	100.0%
		% within Q19	23.1%	10.6%	.0%	7.5%
		% of Total	2.8%	4.7%	.0%	7.5%
	3	Count	0	2	6	8
		Expected Count	1.0	3.5	3.5	8.0
		% within Q17	.0%	25.0%	75.0%	100.0%
		% within Q19	.0%	4.3%	12.8%	7.5%
		% of Total	.0%	1.9%	5.6%	7.5%
	4	Count	5	14	19	38
		Expected Count	4.6	16.7	16.7	38.0
		% within Q17	13.2%	36.8%	50.0%	100.0%
		% within Q19	38.5%	29.8%	40.4%	35.5%
		% of Total	4.7%	13.1%	17.8%	35.5%
	5	Count	4	22	15	41
		Expected Count	5.0	18.0	18.0	41.0
		% within Q17	9.8%	53.7%	36.6%	100.0%
		% within Q19	30.8%	46.8%	31.9%	38.3%
		% of Total	3.7%	20.6%	14.0%	38.3%
	6	Count	1	4	7	12
		Expected Count	1.5	5.3	5.3	12.0
		% within Q17	8.3%	33.3%	58.3%	100.0%
		% within Q19	7.7%	8.5%	14.9%	11.2%
		% of Total	.9%	3.7%	6.5%	11.2%
Total		Count	13	47	47	107
		Expected Count	13.0	47.0	47.0	107.0
		% within Q17	12.1%	43.9%	43.9%	100.0%
		% within Q19	100.0%	100.0%	100.0%	100.0%
		% of Total	12.1%	43.9%	43.9%	100.0%

Chi-Square Analysis: Question 19 by Expectancy Group

Expectancy Group						
		High	No	Low	Total	
Q19	1	5	13	13	13	21
		7.0	7.0	7.0	7.0	21.0
		23.8%	61.9%	61.9%	61.9%	100.0%
		11.9%	31.0%	31.0%	31.0%	16.7%
		4.0%	10.3%	10.3%	10.3%	16.7%
	2	24	19	19	19	51
		17.0	17.0	17.0	17.0	51.0
		47.1%	37.3%	37.3%	37.3%	100.0%
		57.1%	45.2%	45.2%	45.2%	40.5%
		19.0%	15.1%	15.1%	15.1%	40.5%
	3	13	31	10	10	54
		18.0	18.0	18.0	18.0	54.0
		18.5%	57.4%	18.5%	18.5%	100.0%
		23.8%	73.8%	23.8%	23.8%	42.9%
Total		42	42	42	7.9%	126
		42.0	42.0	42.0	42	126.0
		33.3%	33.3%	33.3%	42.0	100.0%
		100.0%	100.0%	100.0%	33.3%	100.0%
		33.3%	33.3%	33.3%	100.0%	100.0%

Chi-Square Analysis: Question 17 by Expectancy Group

		Expectancy Group				
			High	No	Low	Total
Q17	2	Count	2	2	4	8
		Expected Count	2.8	2.8	2.5	8.0
		% within Q17	25.0%	25.0%	50.0%	100.0%
		% within Q19	5.4%	5.4%	12.1%	7.5%
		% of Total	1.9%	1.9%	3.7%	7.5%
	3	Count	5	2	1	8
		Expected Count	2.8	2.8	2.5	8.0
		% within Q17	62.5%	25.0%	12.5%	100.0%
		% within Q19	13.5%	5.4%	3.0%	7.5%
		% of Total	4.7%	1.9%	.9%	7.5%
	4	Count	12	17	9	38
		Expected Count	13.1	13.1	11.7	38.0
		% within Q17	31.6%	44.7%	23.7%	100.0%
		% within Q19	32.4%	45.9%	27.3%	35.5%
		% of Total	11.2%	15.9%	8.4%	35.5%
	5	Count	15	14	12	41
		Expected Count	14.2	14.2	12.6	41.0
		% within Q17	36.6%	34.1%	29.3%	100.0%
		% within Q19	40.5%	37.8%	36.4%	38.3%
		% of Total	14.0%	13.1%	11.2%	38.3%
	6	Count	3	2	2	12
		Expected Count	4.1	4.1	4.1	12.0
		% within Q17	25.0%	16.7%	16.7%	100.0%
		% within Q19	8.1%	5.4%	5.4%	11.2%
		% of Total	2.8%	1.9%	1.9%	11.2%
Total		Count	37	37	37	107
		Expected Count	37.0	37.0	37.0	107.0
		% within Q17	34.6%	34.6%	34.6%	100.0%
		% within Q19	100.0%	100.0%	100.0%	100.0%
		% of Total	34.6%	34.6%	34.6%	100.0%

Appendix J**Stepwise Regression: Full Table**

Stepwise Regression: Full Table

Model		Sum of Squares	DF	Mean Square	F	Significance
1	Regression	31.837	1	31.837	28.737	.00
	Residual	137.377	124	1.108		
	Total	169.214	125			
2	Regression	50.752	2	25.376	26.348	.000
	Residual	118.462	123	.963		
	Total	169.214	125			
3	Regression	60.594	3	20.198	22.686	.000
	Residual	108.620	122	.890		
	Total	169.214	125			
4	Regression	67.535	4	16.884	20.092	.000
	Residual	101.679	121	.840		
	Total	169.214	125			
5	Regression	71.558	5	14.312	17.586	.000
	Residual	97.656	120	.814		
	Total	169.214	125			
6	Regression	76.536	6	12.756	16.379	.000
	Residual	92.678	119	.779		
	Total	169.214	125			
7	Regression	80.011	7	11.430	15.120	.000
	Residual	89.203	118	.756		
	Total	169.214	125			
8	Regression	78.584	6	13.097	17.197	.000
	Residual	90.630	119	.762		
	Total	169.214	125			

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