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**Eliminating the impact of mood on judgments of fairness and
re-affirming equity theory**

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Thesis submitted to the Faculty of the Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

Master of Science
in
Industrial/Organizational Psychology

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April 25, 1997
Blacksburg, Virginia

Keywords: Equity Theory, Fairness, Misattribution of Mood

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(ABSTRACT)

Equity theory has long been used to predict individuals' responses to equity and inequity. Tests of these predictions have been inconsistent, particularly for inequitable conditions of low inputs and high outcomes, or overreward. Based on empirical evidence pointing to the powerful effects of moods on cognitive tasks, this study incorporates mood into equity theory's propositions, with the expectation that considering mood will enhance equity theory's predictive power. Specifically, as Wyer and Carlston's (1979) "feelings-as-information" hypothesis suggests, subjects who receive favorable outcomes may use their positive outcome-based mood in judging the fairness of the situation. Cognitive research suggests that positive mood reduces the accuracy of judgments, which would explain the inconsistencies in equity perceptions. However, Schwarz and Clore (1983) discovered that the effect of mood on judgments may be eliminated if the mood can be attributed to a logical external source. Two studies were conducted using similar procedures with different overrewards and external sources. In both studies, overrewarded subjects rated the fairness of being overrewarded and the fairness of the procedures used to allocate the reward. These ratings were analyzed to assess the effects that subjects' inputs, outcomes, and procedures had on their perceptions of fairness. Two groups were given the opportunity to attribute their moods to a source other than the reward. It was hypothesized that mood effects on fairness judgments would be eliminated when subjects were able to attribute their mood to its correct source (i.e., undeserved reward) or to an incorrect but logical source (i.e., music or cheerful surroundings). Specifically, the elimination of the effect of positive mood should serve to increase accuracy in judgments of fairness. The hypothesis that subjects who were treated with fair procedures would view their outcome as more distributively fair was supported in both studies. In Study 1, the hypotheses regarding changes in judgment accuracy as a function of external attribution of positive mood were not supported. The results of Study 2, which used a different overreward and transient source, revealed that external attribution of positive mood had a significant effect on subjects' fairness ratings.

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Chapter 1

INTRODUCTION

Eliminating the Impact of Mood on Judgments of Fairness and Re-Affirming Equity Theory

The pervasive influence of mood on cognitive activity is a phenomenon that has stimulated a great deal of research interest and investigation. Numerous researchers have explored the impact that affective states have on cognitive processing, judgment, decision-making, and subsequent behavior (e.g., Alloy & Abramson, 1979; Ellis & Ashbrook, 1988; Leight & Ellis, 1981; Schwarz & Clore, 1983; Sinclair & Mark, 1991). This area of cognitive research has made substantial contributions to a broad range of fields, including education and medicine (Ashcraft, 1994), law (Loftus & Burns, 1982), clinical psychology (Mathews & MacLeod, 1994), and consumer research (Isen, Shalker, Clark, & Karp, 1978).

The cognitive interpretation of equity theory (Adams, 1963, 1965) has also prompted extensive research into motivation (Hamner, 1974), reward systems (Walster, Walster, & Berscheid, 1978), procedural justice (Lind & Tyler, 1988; Thibaut & Walker, 1975), dispute resolution (Sheppard, 1985), justice judgments (Leventhal, Karuza, & Fry, 1980), and employee reactions to pay (Mowday, 1990).

Adams' equity theory is one of the most well-developed and most frequently researched theories of how individuals measure their social exchange relationships. Numerous researchers have focused their efforts on testing the predictions made by equity theory, and many of these studies concentrate specifically on employee evaluations of fairness in the context of compensation at work (Mowday, 1990). The theory has achieved a good deal of support for some its predictions, specifically those regarding employees' attitudes toward being equitably paid or being underpaid (Adams, 1963; Adams & Jacobsen, 1964; Andrews, 1967; Evans & Simmons, 1969; Pritchard, Dunnette, & Jorgenson, 1972). At the same time, however, its prediction for employees who are overpaid has received inconsistent and marginal support (Lawler, Koplin, Young, & Fadem, 1968; Wood & Lawler, 1970). The present study addresses this gap in equity theory's predictive validity as it focuses on the condition of overreward, the most debatable of equity theory's predictions.

Extensive research on moods and cognitive processing has established that the judgments we make are influenced by our mood at the time of judgment (e.g., “feelings-as-information” hypothesis; Wyer & Carlston, 1979). It has been shown, for example, that a positive mood clouds judgment and leads to inaccurate conclusions (Alloy & Abramson, 1979). Moreover, Schwarz and Clore (1983) found that the negative effect of a bad mood could be eliminated when subjects were able to attribute their negative mood to an external source, such as rainy weather.

The present study merges the cognitively-based predictions of equity theory with affect and considers the effect of positive mood on judgments that individuals make about the fairness of rewards that they receive. Of primary interest is the use of Schwarz and Clore’s external attribution approach to explore the possibility that the clouding effect of positive mood on evaluative judgments can be eliminated if the mood is attributed to a logical transient source.

In addition, this study addresses a limitation of equity theory pointed out by Lind and Tyler (1988). Adams’ theory is concerned only with the fairness of final outcomes, but it has been proposed repeatedly that the procedures by which outcomes are allocated are equally important in determining fairness and satisfaction (Flinder, 1994; LaTour, 1978; Thibaut & Walker, 1975; Walker, LaTour, Lind & Thibaut, 1974). Therefore, outcomes obtained by means of unfair procedures should be perceived as both more distributively and procedurally unfair than outcomes attained through fair procedures. In light of this, the present study utilizes both a fair and an unfair procedure to allocate rewards. If the attribution of positive mood to a transient source increases judgment accuracy, it follows that overrewarded individuals who externally attribute their positive mood should accurately perceive low distributive justice regardless of procedure, and low procedural justice in unfair procedural conditions, independent of the distributive outcome. On the other hand, subjects who do not externally attribute their positive mood may make fairness judgments based on their mood and may not perceive differences in procedural or distributive justice under different procedural conditions (i.e., fair and unfair procedures).

Mood Effects on Cognition

Numerous researchers have shown that depression interferes with learning and

memory (e.g., Ellis & Ashbrook, 1988; Hertel & Hardin, 1990; Leight & Ellis, 1981; Mueller, 1992). Common everyday experience certainly provides an abundance of examples of forgetfulness and disorganized thinking during times of stress and negative affect. In agreement, Ellis and Hunt (1993) suggested that “under certain emotional states, such as feeling sad or depressed, we are less attentive to our environment and are less likely to process information in an effective fashion” (p. 332).

Since mood not only affects memory, but other cognitive processes as well, it might be expected that such a disruptive mood state would similarly reduce the accuracy of judgments that a person makes (Clore, Schwarz, & Conway, 1993; Ellis & Hunt, 1993). To explore this possibility, Alloy and Abramson (1979) measured depressed and nondepressed college students’ accuracy in making judgments. Surprisingly, they found that depressed students were more accurate in making contingency judgments than nondepressed students!

In their experiments, subjects were asked to judge the degree of contingency between their response (pressing a button) and an outcome (the onset of a light or no light). Compared to the depressed subjects, nondepressed subjects overestimated their degree of control over the outcome. The depressed subjects were significantly more accurate in their judgment of the amount of control they had. The researchers hypothesized that nondepressed individuals tend to engage in self-enhancement, and are more likely to possess the illusion of control than depressed individuals, who are not self-enhancing.

In a follow-up study examining illusion of control, Alloy, Abramson, and Viscusi (1981) supported Alloy and Abramson’s earlier findings. They induced either a mood of depression or elation in nondepressed and depressed subjects. Depressed subjects who were made temporarily elated overestimated their degree of control significantly more than naturally nondepressed subjects who were made temporarily depressed and who were much more accurate in their judgments of control.

Other researchers have similarly shown that depressed individuals tend to be more accurate than happy individuals when performing tasks that involve evaluative judgments, such as performance appraisals (Sinclair, 1988), satisfaction with consumer goods (Isen et al., 1978), analysis of persuasive arguments (Bless, Bohner, Schwarz, &

Strack, 1990; Schwarz, Bless, & Bohner, 1991), and judgments of social justice (Sinclair & Mark, 1991).

One popular explanation for mood effects on judgments is that affective states serve as information in making judgments (Wyer & Carlston, 1979), a proposition that has been extensively examined by others (Clore, 1992; Clore & Parrott, 1991; Schwarz, 1990; Schwarz & Clore, 1983). This “feelings-as-information” hypothesis (Wyer & Carlston, 1979) contends that individuals use their affective reactions to form judgments. For example, when asked for an appraisal of a person, a subject may respond based on his or her feelings about the target person, rather than systematically considering the target’s many characteristics and features. Similarly, when faced with complex or demanding evaluative judgments, individuals often simplify the task by relying on their emotional reactions to guide their judgments. The danger inherent in this heuristic approach is that individuals may mistake feelings due to a pre-existing state as a true reaction to the actual target stimulus.

Equity Theory Predictions

Wyer and Carlston’s (1979) “feelings-as-information” theory includes cognitive as well as affective factors in its approach to perceptions of fairness, or justice. Most of the research on this and other major theories of mood effects has addressed the cognitive component of justice judgments with relatively little attention given to the interaction of affect and cognition in perceived justice (Sinclair & Mark, 1992). For example, the most well researched justice theory, equity theory (Adams, 1963, 1965) is derived in part from Festinger’s (1957) cognitive dissonance theory. Equity theory proposes that individuals seek equitable relationships and that they cognitively evaluate these relationships in order to assess the degree of equity. Adams argued that individuals are motivated to establish and maintain equity in relationships, so that their outcomes are proportional to their contributions.

Individuals first compare the outcomes they derive from a relationship to the inputs they have contributed. In a second evaluation stage, they assess whether their outcome/input ratio is equal to that of others. When individuals experience inequitable relationships, they encounter cognitive dissonance, and are motivated to reduce that dissonance. For example, equity theory predicts that individuals who contribute a high

level of inputs and achieve a high level of outcomes should view the process as fair. Likewise, individuals who contribute few inputs and obtain low outcomes should perceive the process as fair. Equity theory further proposes that individuals who give a high level of inputs but earn little in return should experience inequity distress (Huseman, Hatfield, & Miles, 1985) or tension (Adams, 1963), and label the outcome unfair. Similarly, individuals who contribute little but nevertheless obtain favorable outcomes should also experience distress and judge the process to be unfair. Despite the predictions made by equity theory, research findings from work situations have been equivocal. Predictions about underreward situations have consistently been supported (Campbell & Pritchard, 1976; Miner, 1980; Mowday, 1987). That is, underrewarded individuals report greater distress and lower satisfaction at work, and are motivated to decrease their inputs or make an effort to improve their outcomes in order to achieve a greater balance between input and reward levels (e.g., Huseman et al., 1985).

In contrast, results for overreward conditions have been inconsistent (Campbell & Pritchard, 1976; Mowday, 1987). According to equity theory, overreward should lead to cognitive dissonance, which elicits feelings of guilt. The experience of guilt should then impel individuals to reduce the inequity. What many researchers have observed, however, is that situations of overreward do not always arouse dissonance and guilt (e.g., Evans & Simmons, 1969; Lawler, 1968; Miles, 1988, as cited in Miles, n.d.). Therefore, individuals in such situations are not motivated to take action to amend the inequity (Middlemest & Peterson, 1976). This may be caused by egocentric bias (Greenberg, 1983), by which any positive outcome for the self is perceived as fair, even if the procedure leading to that outcome is actually unfair and even if the positive outcome is undeserved. Alternatively, examining the mood of overrewarded individuals may yield another potential explanation for this phenomenon.

The mixed results for overreward conditions may be resolved when we consider the affective reactions to being overrewarded. Incorporating a mood effect, it may be hypothesized that the outcomes that individuals achieve determine the mood that they experience (Clore et al., 1993). For example, the achievement of a desirable outcome will put individuals in a positive/happy mood, while an undesirable outcome will induce a negative/sad mood. As previous research on mood effects suggests, the positive mood

induced by overreward may reduce the accuracy of individuals' judgments of fairness, causing them to rate the situation as fair even when it is not.

Procedural Justice

Fairness is determined not by outcome alone. The procedures that are used to arrive at particular outcomes may have as much of an impact on perceptions of fairness as the outcomes themselves (Barrett-Howard & Tyler, 1986; Folger & Konovsky, 1989; Greenberg, 1986, 1987, 1990; Lind & Tyler, 1988). The term procedural justice was first used by Thibaut and Walker in the 1970s to refer to the procedures used in social decision-making, particularly in the context of dispute resolution and fairness judgments.

Prior to their interest in procedures, the study of justice had been focused primarily on distributive justice, or the fairness of final outcomes. Thibaut and Walker established that procedures affect individuals' satisfaction and perceptions of fairness independently of the outcomes that they receive (Lind & Tyler, 1988). For example, Walker et al. (1974) tested whether the manipulation of procedures alone would affect subjects' satisfaction with and perceived fairness of a dispute settlement in a laboratory adjudication. Subjects rated as more fair the procedure in which each side could choose its own lawyer versus the procedure in which a single representative was chosen by the judge to present all the evidence in the case. Subjects in the more fair procedure were also more satisfied with the verdict, independent of whether they were found innocent or guilty. Indeed, Walker et al. (1974) demonstrated that even in the face of similar outcomes, the method of reaching a decision has a powerful influence on ultimate judgments of fairness and satisfaction. These findings have been replicated by LaTour (1978) and Thibaut and Walker (1975). Of potential interest to organizations is the conclusion that the use of fair procedures can enhance satisfaction without any corresponding increase in the actual outcomes available for distribution (Lind & Tyler, 1988).

Thibaut and Walker's pioneering research on procedural justice in the legal arena has been extended into the organizational domain by researchers studying motivation (Cropanzano & Folger, 1991), employee evaluations of their leaders (Tyler & Caine, 1981), perceptions of fairness in performance evaluations (Greenberg, 1986; Landy, Barnes, & Murphy, 1978; Landy, Barnes-Farrell, & Cleveland, 1980), employee

theft (Greenberg, 1990), workplace conflict and harmony (Okun, 1975), satisfaction with pay systems (Dyer & Theriault, 1976), and turnover intent and organizational commitment (Konovsky, Folger, & Cropanzano, 1987). As extensive research has shown, the value of procedural justice in the workplace is undeniable. It is a powerful ideal that contributes significantly to the perception of fairness.

Attribution of Mood to Transient Source

The present study couples the principle of justice and the prevalent influence of mood and examines whether the attribution of positive mood to an external source has an effect on cognitive judgments made under different conditions of procedural justice (i.e., fair and unfair procedures). The current study is a test of Wyer and Carlston's (1979) "feelings-as information" hypothesis modeled after Schwarz and Clore's (1983) study.

Schwarz and Clore (1983) interviewed subjects over the telephone to observe mood effects on their judgments of life satisfaction. Subjects who were contacted on sunny days reported higher life satisfaction and a happier mood than subjects who were contacted on rainy days. This difference was eliminated, however, when subjects were able to attribute their current feeling to a transient source. When the interviewer casually mentioned the weather in the course of conversation, subjects' attention was directed to this true source of their depressed or happy mood, and mood effects were eliminated.

Similarly, recalling a sad life event did not influence subjects' judgments of life satisfaction when features of the experimental room were primed, and subjects could--although incorrectly--attribute their mood to the experimental room. Specifically, the negative impact of bad moods diminished because subjects in this condition were motivated to seek explanations for their negative state. Schwarz and Clore (1983) did not find these effects as strongly in happy subjects, presumably because these subjects were not as motivated to search for external factors to explain their pleasant states. These results have been replicated by other researchers (Schwarz, Servay, & Kumpf, 1985; Siemer & Reisenzein, 1992, as cited in Clore et al., 1993). This set of findings indicates that subjects do indeed use their current mood as a basis for making judgments. However, this mood effect may disappear "when the informational value of their feelings is called into question by misattribution procedures" (Clore et al., 1993, p. 40), in which case they may no longer use their mood as information.

The present study tested Schwarz and Clore's (1983) conclusions in a fairness perception setting. As discussed above, it has been shown that individuals' judgments of the fairness of a situation may be governed more by their outcome-based mood than by the true degree of objective fairness in the situation, and that this can be corrected. The current study focused exclusively on the condition of overreward because this is the condition in which equity theory's predictions are questionable.

Furthermore, Schwarz and Clore (1983) have already established that subjects in a negative mood are highly likely to search for external information to explain their unpleasant state. These researchers suggested that subjects in a positive mood continued to use their mood to make judgments about their well-being rather than seeking for external causes to which to attribute their mood. However, Schwarz and Clore (1983) in their study asked subjects to report their life satisfaction and general well-being. In the present study, subjects were required to make evaluative judgments about the fairness of receiving a reward and the procedures used to distribute that reward.

Another reason for focusing on overreward and its consequent positive mood is the relative neglect of positive affect in the literature (Isen, 1984). This may be due to the prominence of drive-reduction theories that focus on unpleasant states as motivators of behavior.

The interest in the present study was whether subjects induced into a positive mood by overreward would be able to judge the situation more accurately if given a transient source to which to attribute their mood. If subjects were given the opportunity to attribute their mood to the positive outcome they have just obtained, would that remove the mood effect on their subsequent judgment of the fairness of the situation? Furthermore, if subjects were given the opportunity to attribute their mood to an external source that is logical, but unrelated to their mood, such as relaxing music or cheerful surroundings, would that serve to eliminate the mood effect on their fairness judgment?

Hypotheses

1. Fair procedures enhance perceptions of distributive justice (Lind, Kurtz, Musante, Walker, & Thibaut, 1980; Walker et al., 1974). Therefore, subjects who experience fair procedures will report greater distributive justice than subjects who experience unfair procedures.

2. Schwarz and Clore (1983) were able to eliminate the effect of mood on individuals' judgments by providing subjects with a transient source to which they could attribute their mood. In light of their findings, it is hypothesized that individuals who are overrewarded will evaluate the situation more accurately (i.e., distributively unfair) if a transient source is primed to which they can attribute their positive mood.

2a. Subjects who receive the bonus prime will report lower distributive justice than control subjects who receive no prime.

2b. Subjects who receive the environmental prime (i.e., relaxing music or cheerful room conditions) will report lower distributive justice than control subjects who receive no prime.

3. If the attribution of positive mood to a transient source increases subjects' judgment accuracy, it follows that they should be better able to distinguish between situations of distributive injustice and procedural injustice (i.e., between unfair outcomes and unfair procedures used to arrive at those outcomes). All subjects in the present study should experience distributive injustice. That is, the high outcomes they receive are not fair relative to their low inputs. In terms of procedural justice, half of the subjects will experience an unfair procedure. That is, the methods used to determine their reward are unfair, while the other half of the subjects will be rewarded by means of fair procedures.

Subjects who attribute their positive mood to a transient source will be more accurate in their fairness judgments than subjects who do not externally attribute their mood.

3a. Specifically, subjects who receive the bonus prime will report higher procedural justice when fair procedures are used to allocate rewards than when unfair procedures are used to allocate rewards, compared to controls.

3b. Subjects who receive the environmental prime will report higher procedural justice when fair procedures are used to allocate rewards than when unfair procedures are used to allocate rewards, compared to controls.

Chapter 2

STUDY 1

Method

Design

A 2 X 3 factorial design was used in which procedural justice (fair procedure, unfair procedure) and transient source (bonus prime, music prime, no prime) were manipulated.

Subjects

Subjects were 169 undergraduate students at Virginia Polytechnic Institute and State University who voluntarily participated in order to obtain extra credit for psychology courses. Table 1 shows the demographic characteristics of this sample.

A separate sample of 49 undergraduate students participated in a pilot study to determine the effectiveness of the overreward in 1) causing differences in fairness perceptions between overrewarded and unrewarded subjects, and 2) inducing a positive mood in subjects who had been overrewarded compared to unrewarded subjects.

Procedure

The experimental task required of each subject was a catalog search task used by Greenberg (1987). This task was chosen because it allows for the manipulation of inputs, outcomes, and procedures. Furthermore, it has been shown to be a task in which subjects have no preconceived standards of productivity to which to compare their performance (Greenberg, 1983).

Subjects were first instructed on how to complete the catalog search task. They were given a list of 50 items from a department store catalog and asked to record the page numbers and prices of the items on the answer sheet next to the appropriate item (Appendix A). They were given 25 minutes to complete the catalog search. The experimenter then scored the task sheet and reported the raw score to the subject. To specify the subject's input, the raw score was translated into a bogus percentile score relative to all other participants in the study (Appendix B). To indicate that their level of input was low, subjects were told that they performed at the 15th percentile in comparison to all other participants. Since they performed the task alone, they were not able to compare their performance to other subjects.

All subjects were told that everyone who scored above the 50th percentile, or above the mean, on the catalog search deserved to receive a bonus so that the best performers could be rewarded. They were further told that when this study was run the previous year, the number of participants who performed in the top 50 percent was excessively large, so this semester fewer than half the subjects would actually receive a bonus and that it would have to be distributed through a lottery system. Next, either a fair or unfair procedure was used to determine how the subject would receive a bonus. Subjects were overrewarded by receiving one additional extra credit point toward their psychology course grade. They had originally signed up to participate knowing that they would receive one extra credit point, with the possibility of obtaining two. The additional point was the bonus. This outcome was chosen because it was a relevant and desirable outcome for the subjects.

Subjects were informed that they won the bonus in spite of their low input. In order to keep subjects in all experimental conditions equal, subjects were asked to wait two minutes while the experimenter purportedly prepared to administer the dependent measures. During this time, subjects in the prime conditions were administered the prime. After two minutes, they completed a questionnaire measuring their judgment of the fairness of the outcome and their judgment of the fairness of the procedures used to arrive at that outcome. Subjects were told that their answers would be anonymous and that their questionnaires would bear no identification.

Subjects deposited their completed questionnaires in a covered box, and all subjects were debriefed.

Independent Variables

Procedural justice. Fair and unfair procedures were modeled after the procedures used by Flinder (1994). In her study, she successfully demonstrated that the manipulation of procedural justice through the use of a fair and an unfair lottery system influenced subjects' perceptions of distributive justice, or the fairness of their outcomes.

In the fair procedure condition, subjects were told that higher performing subjects would have a greater chance of winning the bonus. Subjects in the top 25 percent had 6 in 10 chances to win; subjects who performed between the 50th and 74th percentiles had 4 in 10 chances to win; subjects who performed between the 25th and

49th percentiles had 2 in 10 chances to win; and subjects who performed in the bottom 25 percent had 1 in 10 chances to win the bonus (Appendix C). Therefore, a subject who purportedly scored at the 15th percentile counted out 1 winning and 9 losing lottery slips, put them into a box, and watched the experimenter draw a slip with a predetermined outcome which indicated whether the subject had won or lost the bonus. All subjects were told that they won.

Subjects in the unfair condition also knew that everyone who scored above the 50th percentile deserved a bonus, but that a lottery system would have to be implemented because of limitations placed on the number of winners. However, the likelihood of receiving a bonus in this condition was not contingent upon the subject's performance on the catalog search task. Subjects were told that the bonus would be given to everyone whose last name started with any of a predetermined set of letters (Appendix D). The experimenter then informed each subject that his or her last name fell into the category of winners of the bonus.

Transient source. Schwarz and Clore (1983) observed that the impact of mood on judgments disappeared when subjects attributed their feelings to a transient source, either to the correct source of their mood or to an incorrect but logical source. In the present study, relaxing music served as the incorrect transient source to which subjects could attribute their mood. After being informed of their reward, subjects were asked to wait a few minutes while the experimenter prepared to administer them a questionnaire. They were brought into a room in which relaxing music (i.e., "Shepherd Moons," Enya) was playing. After two minutes, the experimenter returned, and as the experimenter handed out the judgment of fairness measures, the experimenter primed the music by stating the following: "I really like this music. It makes me feel good," in order to make explicit the connection between the relaxing music and positive mood.

The correct source to which subjects could attribute their mood was the attainment of the bonus extra credit point. In order to make this overreward salient, it was primed by a self-report questionnaire that asked subjects about their relative performance, the likelihood that they would receive the bonus, and about the bonus they have just won (Appendix E). Subjects in this experimental condition heard the same relaxing music as the music-prime group, but the music was not mentioned. The bonus

prime was administered two minutes after the bonus decision and immediately before the questionnaires measuring subjects' fairness perceptions.

A control group was awarded the bonus through either the fair or unfair procedure. They were then asked to complete the judgment of fairness and mood measures. The same relaxing music was playing, but no transient source was primed.

Judgment of Fairness

Subjects' perceptions of fairness, or justice, were measured with seven items on a five point scale (Appendix F). The first four items assessed procedural justice perceptions, and the remaining three measured distributive justice perceptions. Items one and two are adapted from a version of questions Konovsky et al. (1987) used to measure the fairness of pay raise decisions. They reported an alpha coefficient of reliability of .87. Items three and four are modified versions of questions that Tyler (1991) used to measure the fairness of supervisor behavior. The alpha coefficient for these two items was .88. Items five, six, seven are modified versions of questions used by Folger and Konovsky (1989) to measure the perceived fairness of pay raise decisions. The coefficient alpha of reliability for the first two of these three items was .86. The coefficient alpha for all three items was .92. All questions were reworded and modified from their original versions to measure the fairness of the bonus decision made in this study.

Pilot Studies

A pilot study was conducted in order to determine the effectiveness of the extra credit reward in causing differences in fairness perceptions between overrewarded and unrewarded subjects. The extra credit point would be considered an effective overreward if overrewarded subjects perceived their outcome to be more fair than subjects who did not receive the extra credit point. Twenty-five subjects participated in this part of the pilot study. Subjects performed the catalog search task for 25 minutes. The task was scored, and subjects were told how well they performed in comparison to all other subjects who performed the catalog search. Subjects were told that they performed in the bottom 15 percent, relative to all other participants. In a manipulation check (Appendix G), all 25 subjects in this pilot study reported that they had performed worse than most other subjects. Six subjects were overrewarded by means of the fair lottery procedure.

Seven subjects were overrewarded by means of the unfair lottery procedure. Six subjects received no reward under the fair lottery condition. Six subjects received no reward under the unfair lottery procedure. Subjects rated the procedural and distributive fairness of the outcome they received on a 5-point scale (Appendix F).

All mean fairness ratings were in the predicted direction. The mean procedural justice rating was higher for overrewarded subjects ($M = 4.0$) than for unrewarded subjects ($M = 3.88$). Distributive justice was also rated higher by overrewarded subjects ($M = 2.77$) than by unrewarded subjects ($M = 2.42$). Since overrewarded subjects rated their outcomes higher than subjects who received no reward, it was determined that the bonus extra credit point would be an appropriate overreward.

A second pilot study was conducted to verify that the overreward induced a positive mood. In this pilot study, the mood of overrewarded subjects was compared to the mood of those subjects who received no reward. Twenty-four subjects performed the catalog search task and were told that they performed in the bottom 15th percentile in comparison to all other subjects. Subjects were randomly assigned to the following conditions, so that there were six subjects for each condition: fair lottery procedure/overreward; unfair lottery procedure/overreward; fair lottery procedure/no reward; unfair lottery procedure/no reward. Subjects' mood was assessed using a measure that consists of a list of 25 feelings. Subjects rated on a scale from 1 (very slightly or not at all) to 5 (extremely) the extent to which they felt each of the emotions "at the present moment" (Appendix H). The only moods that were used for the analysis were subjects' responses to "excited," "enthusiastic," "proud," "happy," "pleased," "upset," "hostile," "irritable," "annoyed," and "sad" because these were most relevant to the positive and negative moods of interest in the present study. Other affective descriptions (e.g., guilty, scared, afraid) were included on the measure in order to hide the true focus of interest (i.e., happy/positive mood and sad/negative mood). Of the moods listed above that were used for analysis, the first five were averaged to form a positive mood score; the last five were averaged to form a negative mood score. Mean positive and negative mood ratings were in the predicted directions. Unrewarded subjects reported a higher negative mood score ($M = 1.47$) than overrewarded subjects ($M = 1.32$). Overrewarded subjects rated themselves more highly on positive mood ($M = 2.93$)

compared to unrewarded subjects ($M = 1.90$). When overrewarded, subjects reported a more positive mood compared to subjects who received no reward. Thus, it was determined that the bonus extra credit point could be associated with a more positive mood.

The mood of subjects in just the overreward conditions (both fair and unfair lottery procedures) were compared in order to verify that the overreward, not the fairness of procedures, induced their positive mood. If fairness of lottery procedures could account for subjects' increased positive mood, we would expect fairly treated subjects to report a more positive mood than unfairly treated subjects. Thus, no difference in mood was expected among overrewarded subjects in the fair and unfair lottery procedures. Subjects in the fair procedural condition reported a mean positive mood of 2.77 and a mean negative mood of 1.50. Subjects in the unfair lottery condition reported a mean positive mood of 3.10 and a mean negative mood of 1.13. These mood scores were in the opposite direction of what one might expect of subjects who have been fairly or unfairly treated. Thus, the fairness of procedures cannot likely account for mood effects.

As subjects in the pilot studies were debriefed, the experimenter sought their reactions to ensure that they were responding to the manipulations as intended. Most subjects stated that the manipulations were believable. A number of subjects found the catalog search task to be fun and interesting, even those who did not win the bonus. Some subjects felt that they deserved to win the reward even if they only performed at the 15th percentile because they had worked hard on the task. Some subjects were concerned about how poorly they had performed and nervously asked what ability the task was measuring. Overall, the manipulations appeared to be convincing.

Analyses

Data was analyzed using a 2 (lottery procedure) X 3 (prime) Analysis of Variance (ANOVA) with a priori contrasts to test the hypotheses.

Results

Descriptive Statistics

Table 2 shows the means and standard deviations of the measures of procedural justice and distributive justice within each cell. The correlation between procedural justice ratings and distributive justice ratings was .66 ($p < .01$).

Analyses of Hypotheses

Hypothesis 1 predicted that subjects who experienced the fair lottery procedure would report greater distributive justice than subjects who experienced the unfair lottery procedures. A two-factor (lottery procedure X prime) ANOVA (Table 3) revealed a significant main effect for lottery procedure ($F(1, 163) = 19.09, p < .001$). Collapsing across prime conditions, subjects who experienced the fair lottery procedure perceived greater distributive justice ($M = 3.30, SD = 1.00$) than subjects who experienced the unfair lottery procedure ($M = 2.63, SD = .98$). Furthermore, the means of all fair procedure cells were higher than the means of all unfair procedure cells. Hypothesis 1 was supported.

Hypotheses 2a and 2b predicted that subjects in the primed conditions would rate distributive justice lower (i.e., more accurately) than control subjects. Collapsing across procedural justice conditions, subjects who were given the bonus prime rated distributive justice lower than controls ($M = 2.87, SD = .87$ and $M = 3.02, SD = 1.09$, respectively). Subjects who experienced the music prime reported a mean distributive justice rating equal to controls ($M = 3.02, SD = 1.15$). An analysis of variance for subjects' perceptions of distributive justice (Table 3) disclosed a main effect for the lottery procedure manipulation ($F(1, 163) = 19.09, p < .001$), but no main effect for type of prime ($F(2, 163) = .49, p > .10$). Hypothesis 2 was not supported.

Hypotheses 3a and 3b predicted an interaction between primed conditions and lottery procedure. It was hypothesized that primed subjects in the unfair lottery condition would have the lowest procedural justice ratings of all subjects, while control subjects' procedural justice ratings would not change between the fair and unfair lottery conditions. The ANOVA for procedural justice (Table 4) did not reveal a significant interaction effect ($F(2, 163) = 1.49, p > .10$). However, Figure 1 shows that subjects' patterns of responses were in the predicted direction. Control subjects' perceptions of procedural justice barely differed under fair or unfair procedures, while the procedural justice ratings of bonus-primed and music-primed subjects were lower in the unfair condition than in the fair lottery condition.

Discussion

A possible explanation for the results found in Study 1 is suggested by Schwarz

and Clore's (1983) study, in which they were only able to experimentally alter the responses of subjects who were in a negative mood, but not of subjects who were in a positive mood. It may be the case that subjects who are in a negative mood are more willing to seek out alternative explanations for their mood, while those in a positive mood are not motivated to attribute away their positive affect. Subjects who were overrewarded in Study 1 may have been sufficiently satisfied with their outcome so that they were not motivated to seek external cues to explain their mood. In this case, they failed to attend to the bonus and music primes that were used to suggest possible causes for their mood.

A similar effect was observed by Arkin, Gleason, and Johnston (1976) who found that subjects who received positive feedback about their performance ignored situational factors that might have accounted for their high performance level. In contrast, subjects who received negative performance feedback sought factors in the environment that might have caused or contributed to that negative feedback.

Another possible reason for these results is that Wyer and Carlston's (1979) "feelings-as-information" hypothesis may not be a viable hypothesis when used in the context of equity judgments. The present study relies on the hypothesis that subjects who were overrewarded would be put in a positive mood and would let that positive mood guide their subsequent judgments about the fairness of the reward. However, the "feelings-as-information" hypothesis has typically been used to study not equity judgments, but to explain individuals' attraction to other people or evaluations of individual happiness. According to Andrews and McKenel (1980), judgments about one's general happiness may be more "affective" than more specific "cognitive" judgments that are directed toward something, such as the evaluative fairness judgments required in the present study. These researchers have suggested that the effects of subjects' mood on more "cognitive" judgments (e.g., fairness ratings) is weaker than mood effects on more "affective" measures (e.g., attraction to another person).

Along similar lines, all individuals' perceptions of fairness may not be influenced instrumentally by mood. A decision about fairness is one that involves value judgments. Therefore, individuals' values may play a role in their perceptions of justice.

Thibaut and Walker (1975) proposed that perceptual overlap influences

individuals' reactions to distributive and procedural justice. Support of the first hypothesis in this study reinforces their argument. That is, subjects who were treated in a procedurally fair manner rated an outcome as more distributively fair than subjects who received the same outcome under unfair procedures. Furthermore, the correlation between procedural and distributive justice ratings was .66. If perceptual overlap links distributive and procedural justice perceptions, subjects may have difficulty separating their reactions to procedural justice from their reactions to distributive justice, accounting for the lack of a significant interaction between prime and fairness of procedures.

An alternative explanation for the findings in this study is that the priming manipulations may not have been powerful enough to produce their intended effects. The bonus and music primes may not have been strong enough to eliminate the self-enhancing effect of subjects' mood after they had just won the bonus. The bonus prime was made quite explicit in the manipulation check administered prior to the dependent fairness measures (Appendix E); however, the music prime was a subtle comment made by the experimenter that could have gone unnoticed by inattentive or preoccupied subjects. This possibility was addressed in a second study in which different, stronger attribution manipulations were utilized to eliminate the influence of positive affect on subjects' judgments. In Study 2, a cash bonus was pilot-tested and implemented in place of the bonus extra credit point, and the music prime was replaced by a cheerful experimental room setting.

Chapter 3

STUDY 2

This study was conducted to address the possibility that the insignificant results found in Study 1 may have been caused by weak manipulations. One possible reason may be that the overreward did not induce a positive mood strong enough to counteract the cognitive dissonance that is evoked in situations of inequity. To test this possibility a stronger bonus was implemented as the overreward in Study 2. The overreward used in this study was changed from the bonus extra credit point used in the previous study to a cash bonus of \$3.

A second change implemented in the follow-up study was the use of a new prime. It was suggested that the relaxing instrumental music primed in Study 1 may not have induced a positive mood in all subjects. Therefore, to strengthen the positive mood manipulation, the experimental room was decorated with cheerful posters of smiling faces and beach scenery. The music prime in Study 1 was replaced with a room conditions prime (described below).

Method

Design

As in the first study, a 2 X 3 factorial design was used in which procedural justice (fair procedure, unfair procedure) and transient source (bonus prime, room conditions prime, no prime) were manipulated.

Subjects

Subjects were 177 undergraduate students at Virginia Polytechnic Institute and State University who voluntarily participated in exchange for extra credit in psychology courses. Table 5 provides the demographic characteristics of this sample. Fifty-nine additional students participated in pilot tests of the \$3 bonus.

Procedure

The experimental task performed by subjects was the same catalog search task used in Study 1 (Appendix A). After completion of the task, all subjects were told that they performed at the 15th percentile in comparison to other participants, and further that only participants scoring above the 50th percentile deserved to be awarded a cash bonus. Subjects were told that distribution of the reward was limited since so many students had

won it when the study was run the previous year. All subjects won a \$3 bonus by means of a lottery system. The experimenter then primed a transient source, administered the fairness perceptions questionnaire, and debriefed subjects.

Independent Variables

Procedural Justice. The rationale for using a lottery system to award the bonus was explained to subjects. Either the fair or unfair lottery system used in Study 1 was administered (Appendices C and D), and all subjects won the \$3 bonus.

Transient source. As in the first study, the correct source to which subjects could attribute their mood was the attainment of the undeserved bonus. This overreward was primed by a self-report questionnaire that asked subjects whether they had won the \$3 bonus and how they felt about it (Appendix E).

The incorrect transient source to which subjects could attribute their positive mood was the cheerful atmosphere of the experimental room. Posters of smiling faces, lively people, and sunny beach scenes decorated the room, and immediately before completing the fairness measure, subjects were informed that the room had been designed to put them at ease; they were instructed to relax, look around the room at the posters, and make themselves comfortable.

A control group was awarded the bonus through either the fair or unfair procedure. They were then asked to complete the judgment of fairness and mood measures. The control group was put into the same cheerful room surroundings as the other subjects, but no transient source was primed.

Judgment of Fairness

Subjects rated their perceptions of procedural and distributive fairness using the same seven-item scale that was administered in Study 1 (Appendix F).

Pilot Studies

As in the first study, two pilot studies were conducted in order to 1) determine the effectiveness of the overreward in causing differences in fairness perceptions between overrewarded and unrewarded subjects, and 2) to verify that the overreward induced a positive mood. In the first pilot study, the \$3 cash bonus would be considered an effective overreward if rewarded subjects perceived their outcome to be more fair than subjects who did not receive the bonus. This finding would support the paradoxical

overreward condition where equity theory's predictions do not hold up. Twenty-seven subjects participated in this part of the pilot study. Subjects performed the catalog search task for 25 minutes. The task was scored, and subjects were told how well they performed in comparison to all other subjects who performed the catalog search. Subjects were told that they performed in the bottom 15 percent, relative to all other participants. In a manipulation check (Appendix G), all 27 subjects in this pilot study reported that they had performed worse than most other subjects. Seven subjects were overrewarded by means of the fair lottery procedure. Seven subjects were overrewarded by means of the unfair lottery procedure. Six subjects received no reward under the fair lottery condition, and 7 subjects received no reward under the unfair lottery procedure. Subjects rated the procedural and distributive fairness of the outcome they received on a 5-point scale (Appendix F).

All mean fairness ratings were in the predicted direction. The mean procedural justice rating was higher for overrewarded subjects ($M = 3.93$) than for unrewarded subjects ($M = 2.54$, $p < .001$). Effect sizes were computed to show the magnitude of the differences between group means (Hays, 1995). For procedural justice ratings, the difference between overrewarded and unrewarded subjects represented an effect size of 2.77. In other words, overrewarded subjects' mean procedural justice rating was 2.77 standard deviations higher than the mean procedural justice rating of unrewarded subjects. Distributive justice was also rated higher by overrewarded subjects ($M = 3.76$) than by unrewarded subjects ($M = 1.85$, $p < .001$), with an effect size of 1.61, a difference of 1.61 standard deviations. Since overrewarded subjects rated their outcomes significantly higher than subjects who received no reward, it was determined that the \$3 cash bonus would be an appropriate overreward.

The second pilot study was conducted to verify that the \$3 overreward induced a positive mood. The mood of overrewarded subjects was compared to the mood of those subjects who received no reward. Thirty-two subjects performed the catalog search task and were told that they performed in the bottom 15th percentile. Subjects were randomly assigned to the following conditions, so that there were eight subjects for each condition: fair lottery procedure/overreward; unfair lottery procedure/overreward; fair lottery procedure/no reward; unfair lottery procedure/no reward. Subjects' mood was assessed

using the mood measure (Appendix H). Mean positive and negative mood ratings were in the predicted directions. Unrewarded subjects reported a higher negative mood score ($M = 2.14$) than overrewarded subjects ($M = 1.63$, $p < .001$). This effect size was 1.89, indicating that unrewarded subjects on average reported a negative mood that was almost 2 standard deviations higher than the negative mood reported by overrewarded subjects. Overrewarded subjects rated themselves more highly on positive mood ($M = 3.46$) compared to unrewarded subjects ($M = 1.68$, $p < .001$). The effect size of this mean difference was 3.58. In other words, overrewarded subjects reported a mean positive mood that was more than 3 standard deviations higher than that reported by unrewarded subjects. When overrewarded, subjects reported a more positive mood compared to subjects who received no reward. Thus, it was determined that the bonus extra credit point could be associated with a more positive mood.

The mood of subjects in only the overreward conditions (both fair and unfair lottery procedures) were compared in order to verify that the overreward, and not the fairness of procedures, induced their positive mood. If fairness of lottery procedures rather than the cash bonus could account for subjects' increased positive mood, we would expect fairly treated subjects to report a more positive mood than unfairly treated subjects. Thus, no difference in mood was expected among overrewarded subjects in the fair and unfair lottery procedures. Overrewarded subjects in the fair and unfair procedural conditions reported a mean positive mood of 3.43 and 3.50, respectively ($p > .10$). The effect size for this group mean difference was .14. Furthermore, these positive mood scores were in the opposite direction of what one might expect of subjects who have been fairly or unfairly treated. Overrewarded subjects in the fair and unfair lottery conditions reported a mean negative mood of 1.15 and 1.18, respectively ($p > .10$). This effect size was .10. The insignificant results and small effect sizes observed here demonstrate that fairly and unfairly rewarded subjects did not substantially differ from each other in their reported moods. Thus, the fairness of lottery procedures cannot likely account for mood effects.

Results

Descriptive Statistics

Table 6 shows the means and standard deviations of the ratings for procedural

justice and distributive justice within each cell. The correlation between procedural and distributive justice ratings was .56 ($p < .01$).

Analyses of Hypotheses

Hypothesis 1 predicted that subjects who experienced the fair lottery procedure would report greater distributive justice than subjects who experienced the unfair lottery procedure. A two-factor (lottery procedure X prime) ANOVA (Table 7) revealed a significant main effect for lottery procedure ($F(1, 171) = 30.68, p < .001$). Collapsing across prime conditions, subjects who experienced the fair lottery procedure rated distributive justice higher than subjects who experienced the unfair lottery ($M = 3.30, SD = 1.15$ and $M = 2.47, SD = 1.00$, respectively). The mean distributive justice ratings in all fair procedure cells were higher than the means for distributive justice in all unfair procedure cells. Hypothesis 1 was supported.

Hypotheses 2a and 2b predicted that subjects in the primed conditions would rate distributive justice lower (i.e., more accurately) than control subjects. An analysis of variance for subjects' perceptions of distributive justice (Table 7) revealed a main effect for the lottery procedure manipulation ($F(1, 171) = 30.68, p < .001$), as well as a main effect for type of prime ($F(2, 171) = 3.48, p < .05$). Subjects who were given the bonus prime reported a mean distributive justice rating of 2.62 ($SD = .93$) compared to the mean rating of 3.09 ($SD = 1.15$) given by the control group. Likewise, room-primed subjects reported lower mean distributive justice ratings than controls ($M = 2.94, SD = 1.18$ and $M = 3.09, SD = 1.15$, respectively).

Hypothesis 2a predicted that subjects who were given the bonus prime would rate distributive justice lower than subjects who received no prime. A t-test comparing these cell means revealed that the mean distributive justice rating of bonus-primed subjects was significantly lower than the mean distributive justice rating given by control subjects ($t(116) = -2.51, p < .05$). Hypothesis 2a was supported.

Hypothesis 2b predicted that subjects who were able to attribute their mood to a different logical source--comfortable room conditions--would evaluate the situation as more distributively unfair than control subjects who did not attribute their mood to a transient source. The t-test for distributive justice did not reveal a significant difference between subjects in the room conditions prime and control subjects ($t(115) = -.68, p >$

.10). Hypothesis 2b was not supported.

Hypotheses 3a and 3b predicted an interaction between prime conditions and lottery procedure. That is, primed subjects in the unfair lottery condition were expected to have the lowest procedural justice ratings among all subjects. In contrast, control subjects' procedural justice ratings were not expected to differ in the fair and unfair lottery conditions. The ANOVA for procedural justice (Table 8) revealed a significant interaction effect ($F(2, 171) = 5.19, p < .01$).

Hypothesis 3a predicted that subjects in the bonus prime condition would report higher procedural justice under the fair lottery procedure than under the unfair lottery procedure, compared to control subjects, who were not expected to differ under fair or unfair lottery procedures. Although cell means were in the predicted direction, a two-way ANOVA for procedural justice (Table 9) did not reveal a significant lottery X prime interaction ($F(1, 114) = 2.37, p > .10$). Hypothesis 3a was not supported. However, Figure 2 illustrates that subjects' patterns of responses were in the predicted direction. For procedural justice ratings, the difference between the control group mean and the bonus-prime group mean was larger in the unfair condition than in the fair lottery condition.

Hypothesis 3b predicted that subjects given the room conditions prime would report higher procedural justice under the fair lottery procedure than under the unfair lottery procedure compared to controls. The two-way ANOVA comparing these subjects (Table 10) revealed the predicted lottery X prime interaction ($F(1, 113) = 9.66, p < .01$). T-tests were used to compare the cell means of room-primed and control subjects under the fair and unfair lottery conditions. A t-test of the procedural justice ratings made by the room-primed subjects revealed that they perceived procedural justice to be significantly higher in the fair lottery than in the unfair lottery ($t(48) = 4.46, p < .001$). In contrast, control subjects' ratings of procedural justice did not differ in the fair and unfair lottery conditions ($t(56) = -.09, p > .10$). These results are illustrated in Figure 2. Hypothesis 3b was supported.

Overall, the hypotheses regarding the ability of the primes to increase judgment accuracy were partially supported. The bonus prime supported the main effect prediction that primed subjects would rate distributive justice lower than control subject (Hypothesis

2a). The room prime supported the interaction prediction that primed subjects would rate procedural justice lowest in the unfair lottery (Hypothesis 2b).

Discussion

The initial question asked in the present study was whether distributive fairness perceptions might be influenced by the use of fair or unfair procedures. As expected, subjects who were rewarded by means of fair procedures rated their outcome as more fair than subjects who received the same reward by means of unfair procedures. This finding corroborates the conclusions made by other researchers who have found that procedural justice perceptions directly influence perceptions of distributive justice (Folger & Konovsky, 1989; Lind & Tyler, 1988; Tyler, 1991). Thibaut and Walker (1975) suggested that a possible reason for this is the existence of a perceptual overlap between distributive and procedural justice. Also, Leventhal (1976) suggested that procedural justice may be a necessary precondition for some individuals to recognize distributive justice, as the use of unfair procedures may lead to suspicion about the fairness of the outcomes. In addition, Morgan and Sawyer (1979) proposed that when the distributive fairness in a situation is unclear, individuals may rely solely on their perceptions of procedural fairness to assess justice. This robust finding may be useful to organizations that are limited in the outcomes that they are able to distribute. The significant implication of this finding is that fair procedures can be used to improve perceptions of distributive fairness when the actual amount of outcomes cannot be changed.

The primary research question of interest in this study was whether the attribution of subjects' positive mood induced by overreward to an external source would increase the accuracy of their judgments of distributive and procedural fairness. Schwarz and Clore (1983) were able to influence subjects' evaluations of life satisfaction by making them aware of alternative potential causes of their mood. The explanation given by these researchers was that the subjects in their study relied on their mood at the time as a basis for the judgments they made about life satisfaction. Schwarz and Clore concluded that they were able to eliminate the effect of negative mood on subjects' responses when they made the subjects aware of either the true source of the mood (i.e., rainy weather) or a different, but logical source (i.e., uncomfortable experimental room conditions).

The present study attempted to do the same in a fairness perception situation. Based on the hypothesis that individuals use their mood as information when making judgments (Wyer & Carlston, 1979), subjects were overrewarded with an undeserved bonus, then asked to rate the fairness of that outcome and the fairness of the procedures that yielded the outcome. Pilot studies demonstrated that subjects who were overrewarded with an undeserved bonus perceived it as more fair, and reported being in a more positive mood relative to subjects who had not been overrewarded. The results of the pilot studies successfully demonstrated the problematic overreward condition where equity theory's otherwise robust predictions do not consistently hold.

To address this gap in the research, Wyer and Carlston's (1979) "feelings-as-information" hypothesis was suggested as a possible explanation for the inconsistencies observed in conditions of overreward. In an attempt to remove the self-enhancing effect of positive mood on their subsequent judgments of fairness, subjects in the first study were given the opportunity to attribute their positive mood to external sources (i.e., the overreward and soothing music), a manipulation that was suggested by Schwarz and Clore's (1983) research and adapted to the present situation. It was expected that primed subjects would accurately report lower distributive justice than controls, since the reward they received was actually undeserved. An interaction effect was also predicted, whereby primed subjects would be more accurate than controls in recognizing that either fair or unfair procedures had been used, independent of the unfair outcome. These effects were not observed in Study 1. Neither bonus-primed nor music-primed subjects were significantly more accurate in their fairness judgments than control subjects who were not primed. Although the expected effects were not significant, Figure 1 illustrates that the predicted patterns of responses did occur, which pointed to the need for a follow-up study.

A likely explanation for the insignificant results in Study 1 is that the misattribution procedures (i.e., priming manipulations) were not strong enough to overcome the self-enhancing effect of subjects' positive mood on their ratings of fairness. Therefore, stronger primes were implemented in the second study.

In Study 2, it was predicted that primed subjects would more accurately rate distributive justice lower than controls (i.e., their \$3 bonus was undeserved and

distributively unfair relative to their low inputs). As expected, subjects in the bonus prime condition rated distributive justice lower than controls, corroborating Schwarz and Clore's (1983) findings using mood attribution procedures. Contrary to prediction, subjects who received the room conditions prime did not rate distributive justice lower than controls. However, in the next test of judgment accuracy, an interaction effect between prime and lottery procedure was hypothesized for primed subjects, and was significant for the room-primed subjects. That is, subjects who received the room conditions prime rated procedural justice higher in the fair lottery procedure than in the unfair lottery procedure, compared to control subjects, whose procedural justice ratings did not differ as a function of lottery procedure. The interaction effect was not observed for bonus-primed subjects.

Overall the results of this study are encouraging. In response to the possibility that the manipulations in Study 1 were not strong enough, the follow-up study improved the reward and priming manipulations, with positive results. Under different conditions, both transient sources influenced subjects' ratings of perceived justice. When rating distributive justice, the bonus prime successfully directed subjects' attention to their outcome as the cause of their positive mood, thereby allowing them to be more accurate in their rating of distributive justice. In contrast, subjects who received the room conditions prime may not have been attending to the bonus, since their attention was drawn to the experimental conditions to which they were subjected (i.e., the cheerful surroundings), a procedural aspect of the experiment rather than an outcome.

For the same reason, in comparison to controls, bonus-primed subjects' ratings of procedural justice did not differ significantly under fair and unfair lottery procedures, while the room-primed subjects' procedural justice ratings did differ under fair and unfair procedures. Again, subjects who received the bonus prime were led to focus on their outcome, while room-primed subjects attended to their cheerful surroundings. Evidence for this conclusion could be heard in the comments subjects made during debriefing. Several individuals who were given the room conditions prime said they would have been satisfied with their outcome even if they had not won the bonus because the efforts of the experimenter to put them at ease made a positive impression on them.

Future Research

In the present study, all subjects were overrewarded, and the attribution manipulation was targeted at eliminating a positive mood effect on their subsequent judgments. A future study could administer both desirable and undesirable outcomes to put subjects in either a positive or negative mood. Such a design would allow us to investigate whether the external attribution of a negative mood could remove the informational value of the negative mood on subjects' judgments of fairness. If so, underrewarded subjects might be able to recognize the use of fair procedures despite the unfair outcome they have received.

In a future study, the music prime used in Study 1 could be pilot-tested prior to the experiment, or the link between soothing music and positive mood could be strengthened by having the experimenter increase discussion about this link and making it more explicit. In addition, subjects could be asked to write down and describe how they felt as a result of being overrewarded, or even more potent attribution manipulations could be administered.

Further study of the effects of mood on cognitive functioning would be enhanced by the exploration of affect beyond the simple positive mood/negative mood dichotomy. Emotion theorists have long maintained that emotions have evolved as adaptive mechanisms that humans use to respond to the situations they encounter (Clore et al., 1993). To serve their adaptive purpose, certain emotions are elicited in certain situations, depending on the particular demands of the given situation. The effects of different emotions that arise in different situations can be very specific and distinct. Therefore, studying only "positive" and "negative" moods may be over-generalizing the multiple, distinctive effects that specific moods may have on cognitive functioning. Isolating distinct moods in order to study their specific effects is a difficult and very new endeavor, and is posed as a challenge to cognitive and emotion theory researchers (Clore et al., 1993).

Research could also explore the effects of factors other than mood which impact perceptions of fairness. For example, future researchers seeking to improve upon equity theory's predictive validity may consider investigating the construct of equity sensitivity (Miles, Hatfield, & Huseman, 1989). According to supporters of equity sensitivity,

exceptions to equity theory's distress/tension predictions may be caused by individual differences in threshold for inequity. Research on equity sensitivity suggests that not all individuals subscribe to equity theory principles; some are more sensitive to equity norms, while others are less sensitive to them. If some employees are willing to work harder for less pay, the further study of this construct has important implications for selection, worker motivation, and employee incentive programs.

In addition, perceived justice may be improved if the experimenter provides a more detailed rationale for the use of the lottery procedure, or any procedure used to distribute rewards (Lounsbury, Bobrow, & Jensen, 1989). Likewise, if both desirable and undesirable outcomes were distributed in a study to induce both positive and negative moods, perceived justice may be increased if the experimenter offers a reasonable explanation for the occurrence of a negative outcome (Bies & Shapiro, 1988). Finally, a different focus could be on the behavior of the experimenter toward the subject. Termed interactional justice by Greenberg (1990), a study could examine the effect of the experimenter's differential treatment toward subjects.

Studies like the present one that investigate individuals' reactions to equity and inequity have great potential impact for the workplace and managers. Information gained by such research can be put to beneficial use in working organizations in numerous areas, including designing compensation systems, educating, training, and developing managers (i.e., making managers aware of the influences on employee perceptions of fairness), enhancing organizational commitment and employee citizenship, and improving employee motivation and performance. Research findings regarding procedural justice, including the findings in the present study, have demonstrated that employees who perceive a practice as fair are more likely to possess positive attitudes about the organization, regardless of their level of outcomes or rewards. Perhaps most importantly, knowing something about its employees' perceptions of fairness, including the factors that influence those perceptions, gives an organization the ability to reward and retain valued employees.

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Appendix A

CATALOG SEARCH TASK

You will have 25 minutes to look up the following 50 items in an Ikea catalog. Once you find the listed item, record its price and the page number on which you found it. When 25 minutes are up, the experimenter will return and score your performance.

<u>ITEM</u>	<u>PRICE</u>	<u>PAGE</u>
1. LYSEKIL 3-SEATER, "GOBO" BEIGE		
2. SKOT QUEEN BED FRAME		
3. ASMINE FABRIC, PER YARD		
4. EDLA TABLECLOTH		
5. REIDAR DESK & FILE UNIT		
6. LIO SHELF UNIT		
7. FILIP WINE RACK		
8. BILLY OAK BOOKCASE		
9. INDO-GABBEH WOOL RUG 6'x 9'		
10. ELSETAB TAB-TOP CURTAIN, PAIR		
11. KAJAK MIRROR WARDROBE		
12. KURANT POT/CASSEROLE SET, 5 PIECES		
13. DARIO COMPUTER TABLE		
14. HALVSTOP/SHUFFLE FLOOR LAMP		
15. ZEBRA QUILTCOVER SET, TWIN		
16. KURS COMPUTER WORK STATION		
17. FENOMEN CANDLES, 15 PIECES		
18. FLATEN 80/6 CHEST		
19. SVARTÅN BATH SERIES MIRROR		
20. HALLAND CORNER SOFA		
21. LEJON PLAY TABLE		
22. VRÅDAL BUNK BED FRAME		
23. HOVDA BEDSIDE TABLE		
24. BOMSUND RATTAN CHAIR		
25. PAJALA FOLDING TABLE		

26. HEMSÖ TABLE LAMP

27. MORGAN TV BENCH

28. LAGAN BATH TOWEL

29. GRELS MICROWAVE CART

30. AIDI MAGAZINE RACK

31. TIDAN POUNDS/KILOS SCALE

32. NARVIK CANOPY CRIB

33. FURBO DINING TABLE

34. STROMBY FUTON

35. OPTI SWIVEL CHAIR WITH ARMRESTS

36. FRODE SHOE RACK

37. ALDIS SWIVEL CD RACK

38. ATLANT BATH SERIES WALL CABINET

39. MJANG HANDWOVEN JUTE/COTTON RUNG

40. REFERENS FRAME

41. GENERELL SINK BASKET

42. SKYE LOUNGER

43. MAGASIN BREAD BIN

44. PLADDRA FINGER PUPPETS, 5 PIECES

45. DIREKTÖR LEATHER CHAIR

46. AMDI CAN CRUSHER

47. NATURA SERIES HAT AND COAT STAND

48. MAST HIGH BOOKCASE

49. BEVÄXT PLANT STAND

50. MUDI 1 LAUNDRY HAMPER

Appendix B

CATALOG SEARCH TASK PERFORMANCE FEEDBACK CHART

	percentage of subjects	cumulative percentage (percentile)
0-10 items found	1%	1%
11-20 items found	4%	5%
20-25 items found	10%	15%
26-30 items found	30%	45%
31-35 items found	40%	85%
36-40 items found	10%	95%
41-50 items found	3%	98%

Appendix C

CHANCES TO WIN THE FAIR LOTTERY

Your performance level (percentile)	Your chances to win
75% - 100%	6 in 10
50% - 74%	4 in 10
25% - 49%	2 in 10
0% - 24%	1 in 10

Appendix D

UNFAIR LOTTERY: LIST OF WINNING AND LOSING LETTERS

Winning letters

A
C
E
G
I
K
M
O
Q
S
U
W
Y

Losing letters

B
D
F
H
J
L
N
P
R
T
V
X
Z

Losing letters

A
C
E
G
I
K
M
O
Q
S
U
W
Y

Winning letters

B
D
F
H
J
L
N
P
R
T
V
X
Z

Appendix E
BONUS PRIME

1. How well did you perform the catalog search task compared with the other subjects?
 - a. Worse than most
 - b. About average
 - c. Better than most
2. What was the probability that you would have received the bonus?
 - a. High
 - b. Low
 - c. Chance
3. Did you receive the bonus?

Yes	No
-----	----
4. If so, what was the bonus you received? _____
5. Researchers have found that when individuals are overrewarded, this tends to put them in a good mood. On a scale from one to five, how happy are you with your reward?

1	2	3	4	5
very slightly	a little	moderately	quite a	extremely
or not at all			bit	

_____ I did not receive a reward.

Appendix F

QUESTIONNAIRE ASSESSING DISTRIBUTIVE AND PROCEDURAL FAIRNESS

PERCEPTIONS

1. In your opinion, how fair were the practices the experimenter followed in reaching a decision about the bonus?
 1. not at all
 2. slightly
 3. moderately
 4. for the most part
 5. completely

2. To what extent were you treated the way you deserved to be treated (in terms of just the procedures the experimenter used to determine whether you should receive the bonus)?
 1. not at all
 2. slightly
 3. moderately
 4. for the most part
 5. completely

3. How fairly were you treated by the experimenter?
 1. not at all
 2. slightly
 3. moderately
 4. for the most part
 5. completely

4. How fair were the procedures which were used to make the bonus decision?
 1. not at all
 2. slightly
 3. moderately
 4. for the most part
 5. completely

5. To what extent did the bonus give you the reward you deserved?
 1. not at all
 2. slightly
 3. moderately
 4. for the most part
 5. completely

6. To what extent do you think the bonus was related to your performance on the catalog search task?
 1. not at all
 2. slightly
 3. moderately
 4. for the most part
 5. completely

7. How fair do you consider your bonus to be?
 1. not at all
 2. slightly
 3. moderately
 4. for the most part
 5. completely

Appendix G

PILOT STUDY 1 MANIPULATION CHECK

1. How well did you perform the catalog search task compared with the other subjects?
 - a. Worse than most
 - b. About average
 - c. Better than most
2. What was the probability that you would have received the bonus?
 - a. High
 - b. Low
 - c. Chance
3. Did you receive the bonus?

Yes	No
-----	----
4. If so, what was the bonus you received? _____

Appendix H

PILOT STUDY 2 MOOD MEASURE

The following words describe different feelings and emotions. Read each word and then indicate to what extent you feel this way right now, that is, at the present moment. Mark the appropriate answer in the space next to that word, using the 5-point scale below.

1	2	3	4	5
very slightly	a little	moderately	quite a	extremely
or not at all			bit	

_____interested	_____enthusiastic	_____attentive
_____distressed	_____proud	_____jittery
_____excited	_____irritable	_____active
_____upset	_____alert	_____afraid
_____strong	_____ashamed	_____annoyed
_____guilty	_____inspired	_____sad
_____scared	_____nervous	_____happy
_____hostile	_____determined	_____pleased
		_____worried

Table 1

Demographic Characteristics of Sample

	N	percent
Academic year		
Freshman	68	40.2
Sophomore	63	37.3
Junior	24	14.2
Senior	14	8.3
Age		
18	35	20.7
19	66	39.1
20	45	26.6
21	14	8.3
22	9	5.3
Gender		
Male	59	34.9
Female	110	65.1

Note. N = 169.

Table 2

Within Cell Descriptive Statistics

	Procedure	
	Fair lottery	Unfair lottery
	M (SD)	M (SD)
Bonus prime		
DJ	3.11 (.76)	2.61 (.93)
PJ	4.41 (.92)	4.14 (.98)
Music prime		
DJ	3.49 (1.10)	2.55 (1.01)
PJ	4.41 (.84)	3.78 (1.33)
Control		
DJ	3.30 (1.10)	2.74 (1.04)
PJ	4.01 (1.25)	4.08 (1.09)

Note. DJ = distributive justice; PJ = procedural justice.

N = 169.

Table 3
Analysis of Variance for Distributive Justice

Source	df	Mean square	F	Eta ²
Lottery	1	18.87	19.09*	.10
Prime	2	.48	.49	.01
Lottery X Prime	2	.81	.82	.01
Within	163	.99		

Note. N = 169.

*p < .001.

Table 4

Analysis of Variance for Procedural Justice

Source	df	Mean square	F	Eta ²
Lottery	1	3.14	2.69	.02
Prime	2	.80	.68	.01
Lottery X Prime	2	1.73	1.49	.02
Within	163	1.17		

Note. N = 169.

Table 5

Demographic Characteristics of Study 2 Sample

	N	percent
Academic year		
Freshman	22	12.4
Sophomore	80	45.2
Junior	51	28.8
Senior	24	13.6
Age		
18	29	16.4
19	61	34.5
20	52	29.4
21	19	10.7
22	16	9.0
Gender		
Male	83	46.9
Female	94	53.1

Note. N = 177.

Table 6

Within Cell Descriptive Statistics

	Procedure	
	Fair lottery	Unfair lottery
	M (SD)	M (SD)
Bonus prime		
DJ	3.03 (.82)	2.21 (.86)
PJ	4.39 (.91)	3.83 (1.02)
Room prime		
DJ	3.51 (1.08)	2.37 (1.00)
PJ	4.47 (.81)	3.25 (1.23)
Control		
DJ	3.34 (1.08)	2.84 (1.07)
PJ	4.00 (1.20)	4.03 (1.04)

Note. DJ = distributive justice; PJ = procedural justice.

N = 177.

Table 7

Analysis of Variance for Distributive Justice

Source	df	Mean square	F	Eta ²
Lottery	1	30.02	30.68**	.14
Prime	2	3.40	3.48*	.03
Lottery X Prime	2	1.49	1.52	.01
Within	171	.98		

Note. N = 177.

*p < .05.

**p < .001.

Table 8

Analysis of Variance for Procedural Justice

Source	df	Mean square	F	Eta ²
Lottery	1	15.18	13.94**	.07
Prime	2	.95	.87	.01
Lottery X Prime	2	5.65	5.19*	.05
Within	171	1.09		

Note. N = 177.

*p < .01.

**p < .001.

Table 9
Analysis of Variance for Procedural Justice, Bonus Prime and Control Conditions Only

Source	df	Mean square	F	Eta ²
Lottery	1	2.16	1.97	.02
Prime	1	.27	.25	.00
Lottery X Prime	1	2.59	2.37	.02
Within	114	1.09		

Note. N = 118.

Table 10

Analysis of Variance for Procedural Justice, Room Prime and Control Conditions Only

Source	df	Mean square	F	Eta ²
Lottery	1	10.37	8.87*	.07
Prime	1	.70	.60	.00
Lottery X Prime	1	11.29	9.66*	.07
Within	113	1.17		

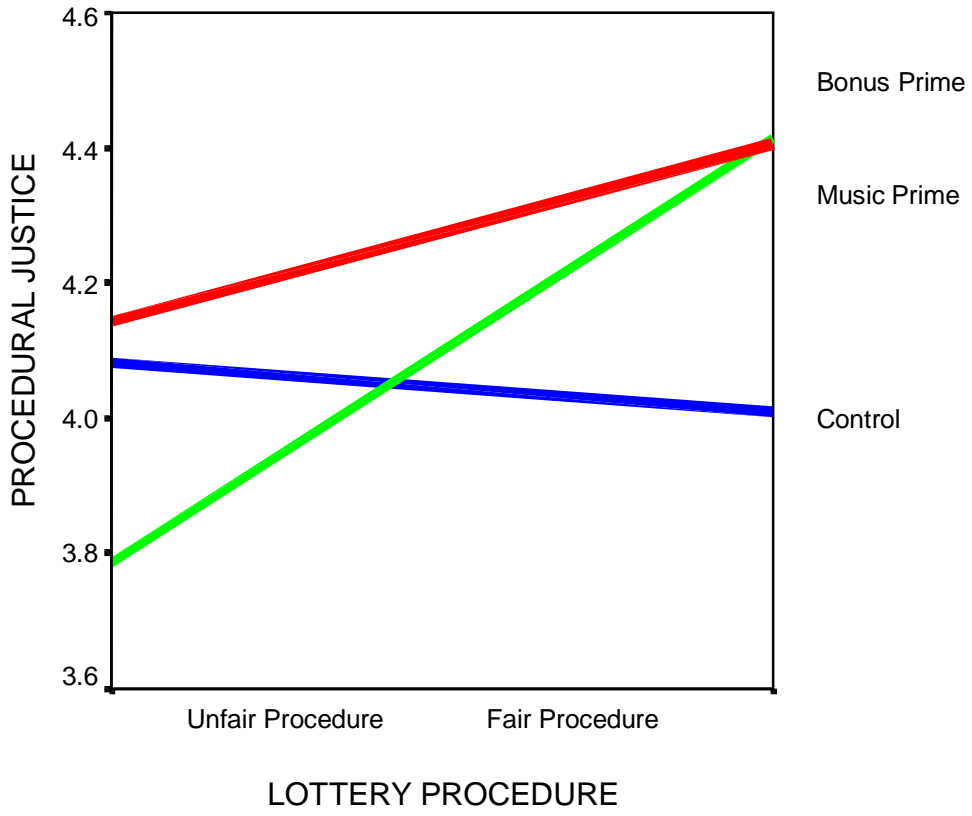
Note. N = 117.

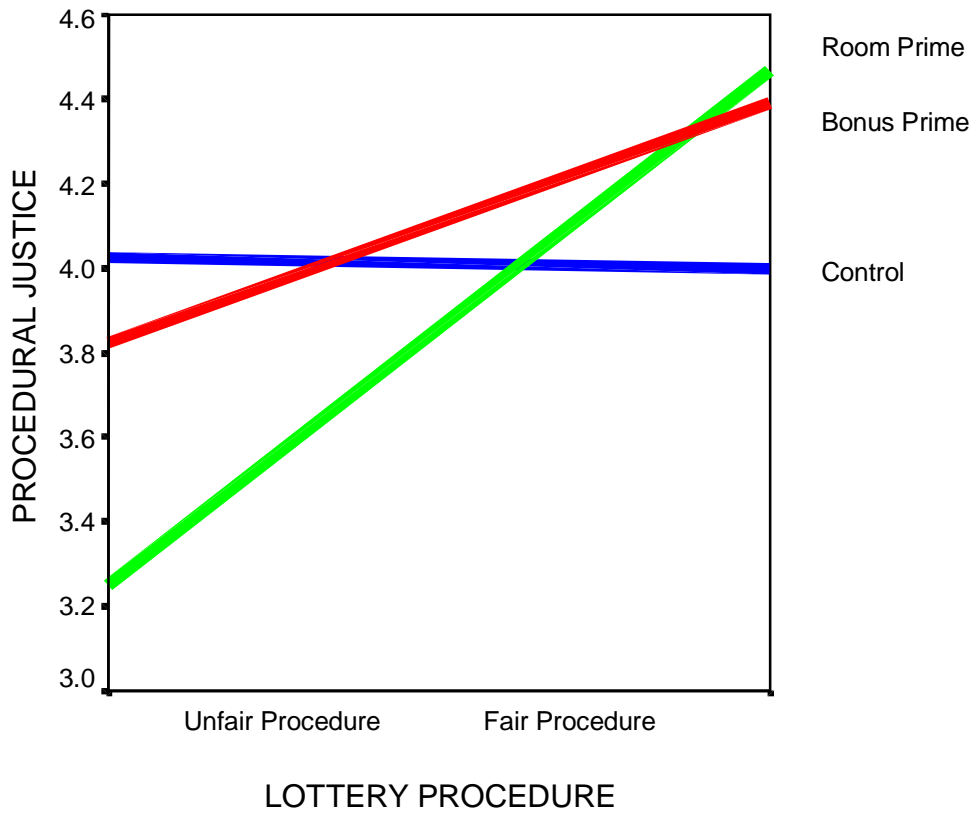
*p < .01.

Figure Captions

Figure 1. Study 1: Differences between primed and control subjects in mean procedural justice (PJ) ratings as a function of lottery procedure.

Figure 2. Study 2: Differences between primed and control subjects in mean procedural justice (PJ) ratings as a function of lottery procedure.





May, 1998

Vita

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EDUCATION

B.A., Psychology, 1994, Saint Vincent College, Latrobe, PA.
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Junior Year Study Abroad, 1992-1993, University College Galway, Galway, Ireland.

M.S., Psychology, Expected 1998, Virginia Polytechnic Institute and State University, Blacksburg, VA. Concentration: Industrial/Organizational Psychology.

HONORS

1994: Graduated Summa Cum Laude, Saint Vincent College
1994: Saint Vincent College Psychology Department Highest GPA Award
1994: Undergraduate Research grant recipient, Saint Vincent College

ASSOCIATION MEMBERSHIPS

Student Affiliate, Society for Industrial and Organizational Psychology
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PROFESSIONAL EXPERIENCE

Assessor, Tennessee Valley Authority, Knoxville, Tennessee, 1997. Evaluated and scored performance of first-line supervisors in developmental assessment center. Wrote up individual feedback reports.

Contractor, Development Dimensions International, 1997-1998. Completed 3-month internship in Start-up and Selection Practice. Attained one-year contract on Project Delivery Teams.

Certified Targeted Selection® Interviewer and Workshop Administrator.

RESEARCH EXPERIENCE

Thesis Research - Neil M.A. Hauenstein, Ph.D. (Chair).

Designed and implemented a laboratory study to test the predictions of equity theory in the context of compensation. Investigated the effect of mood and the attribution of mood on perceptions of justice.

Independent Research Project. Collaborated with two graduate students on a study of the influence of mood on information processing and on perceptions of justice in organizations.

Undergraduate Honors Research Thesis. Designed and implemented a field study exploring the effects of stereotypes on employers' hiring behaviors. Interpreted and presented results to Saint Vincent College Psychology Department.

TEACHING EXPERIENCE

August 1996- May 1997: Undergraduate Advisor, Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Served as academic and career advisor to 800 undergraduate students within the Psychology Department. Recruited prospective students from area high schools and represented Psychology Department at college fairs. Coordinated and compiled student academic records. Advised and provided information to students applying to graduate school and alternative career options. Planned psychology department's graduation ceremonies.

August 1995-May 1996: Introductory Psychology Course Advisor, Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia. Served as an academic advisor for 1200 Introductory Psychology students each semester. Responsibilities included administering exams, reviewing test scores with students, providing extra credit, and grading. Supervised 20 graduate teaching assistants. Conducted lesson-planning meetings, assembled course materials, and reviewed teaching performance.

August 1994-May 1995: Graduate Teaching Assistant, Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Teaching duties included two Introductory Psychology laboratories of approximately 35 students each. Independently designed and implemented lesson plans, lectured, fostered in-class discussions, assigned and graded essays, and administered tests.

January 1994-May 1994: Spanish Instructor, Saint Joseph's Elementary School, Derry, Pennsylvania. Taught Spanish to students in third, fourth, fifth, and sixth grades. Created lesson plans, tests, and projects.

August 1991-May 1994: Statistics and Psychology Tutor, Interdisciplinary Writing Tutor and Computer Consultant, Saint Vincent College, Latrobe, Pennsylvania.

Tutored college students in Psychological Statistics, Introductory Psychology, Social Psychology, Abnormal Psychology, and Personality Theories. Assisted students with computer applications of statistical research problems, entered and analyzed data on SPSS. Tutored students in writing with the use of Macintosh computers.

PROFESSIONAL PRESENTATIONS

Presentation: "Validation Report for BMW Manufacturing Corporation." Development Dimensions International, October 8, 1997.

Training: "Common Errors in Performance Rating Scales." Development Dimensions International, December 15, 1997.

TECHNICAL PUBLICATIONS

Reynolds, D., Bradley, K., & Cullen, T. (1997). Validation Report for Merck Pharmaceuticals. Pittsburgh: Development Dimensions International.

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Cosentino, C., Tefft, M., & Cullen, T. (1998). Validation Report for BMW Manufacturing Corporation. Pittsburgh: Development Dimensions International.

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