Equity Sensitivity: Construction of a Measure and Examination of Its Psychometric Properties

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Despite suffering from content ambiguity, a sample-specific scoring procedure, and the inappropriate use of cut scores, the Equity Sensitivity Instrument (Huseman, Hatfield, & Miles, 1985) has been the primary measure used in equity sensitivity research. The purpose of the present undertaking was to propose and evaluate a new measure of equity sensitivity based on systematic item-development procedures that are crucial in both constructing a reliable and content-valid measure and for gaining an unbiased understanding of the nomological network linking equity sensitivity to other theoretically relevant constructs. The design and evaluation of the 16-item Equity Preference Questionnaire (EPQ) occurred in six studies. Two pilot studies were initially conducted to purify the EPQ and assess its reliability. Two validity assessment studies were then undertaken to examine the EPQ's construct validity. A laboratory experiment was performed next to determine the EPQ's validity for predicting satisfaction with different reward conditions. Finally, a test-retest reliability study was conducted to provide evidence regarding the consistency of the measurements yielded by the EPQ across time. Possible study limitations aside, the EPQ seems to be both psychometrically sound and useful for advancing equity sensitivity research. Various areas in equity sensitivity research that merit further examination are also addressed. © 2000 Elsevier Science Inc. All rights reserved.

Equity theory (Adams, 1963) defines workplace motivation in terms of the perceived equity between the effort individuals put into a job and the outcomes they receive in exchange, especially compared with others in similar situations. It further holds that: (a) perceived inequity creates tension within individuals; (b) this tension motivates individuals to restore equity; and (c) the strength of the resulting effort will vary directly with the magnitude of the perceived inequity.

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Thus, the greater the tension individuals feel, the harder they will strive to restore equity and, thereby, reduce tension.

Equity researchers have generally presumed an invariance in equity sensitivity across individuals; that is, they have presupposed that individuals possess identical preferences for different input and outcome combinations and, thus, react in a like manner to perceived equity/inequity. This presumption, however, was originally challenged by Vecchio (1981), who demonstrated that sensitivity to equity issues moderates individual responses to inequity. More recently, Huseman, Hatfield, and Miles (1987) identified three classes or categories of individuals that vary with respect to their relative equity preferences. As initially classified and defined these three categories were: (a) Benevolents, or "givers," who prefer combinations in which they give more in inputs than they receive in outcomes; (b) Equity Sensitives, who (adhering to traditional equity theory predictions) prefer combinations in which the balance of inputs to outcomes is proportionate; and (c) Entitleds, or "takers," who prefer combinations in which they receive more in outcomes than they give in inputs.

King, Miles, and Day (1993) have since redefined the preferences of Benevolents and Entitleds. Benevolents were reconstrued as individuals "who have a greater tolerance for, but not preference for, under-reward" (p. 303). At the opposite end of the equity sensitivity spectrum, Entitleds were reconceptualized as individuals "who are more focused on the receipt of outcomes than on the contribution of inputs and who are thus intolerant of under-reward, more tolerant of over reward than are either Equity Sensitives or Benevolents, and for whom satisfaction and receipt of rewards are positively or linearly related" (p. 304). This redefinition thus suggests that Entitleds primarily focus on outcomes or receipts with less regard for inputs or contributions.

Equity Sensitivity: The Construct

The purpose of the present research was to develop and evaluate an improved measure of equity sensitivity, the Equity Preferences Questionnaire (EPQ), in an effort to address concerns relating to the derivation of equity sensitivity as a construct (Osigweh, 1989). Unlike Huseman et al.'s (1985) Equity Sensitivity Instrument (ESI), the heretofore sole measure in this area, the EPQ is based on systematic item-development procedures that are crucial in both constructing a reliable and content-valid measure and for gaining an unbiased understanding of the nomological network linking equity sensitivity to other theoretically relevant constructs.

Psychometric Considerations

Judgments concerning the adequacy of an intended measure are invariably shaped by many factors. With this in mind, it is instructive to examine Huseman et al.'s (1985) ESI with respect to various psychometric considerations. The ESI is a five-item, forced-distribution measure intended to gauge an individual's preference for outcomes versus inputs in a general work situation. For each item, two statements are presented: an entitled response and a benevolent response.

Subjects indicate their response preferences by distributing 10 points between the two statements. A total equity sensitivity score is obtained by summing the points allocated to the entitled response on each item. ESI scores may range from 0 (most entitled) to 50 (most benevolent). Of particular interest vis-á-vis the ESI are matters relating to its: (a) content domain, (b) sample-specific scoring, and (c) use of cut scores to classify subjects as Benevolents, Equity Sensitives, or Entitleds.

Content Domain

A clear operational definition of a focal construct is essential for generating items to represent its content domain. Regarding the ESI, content specification is an issue. Given the previously noted revision of the original equity sensitivity domain conception, the continued use of the ESI (based on Huseman et al.'s 1985 initial definition of the equity sensitivity spectrum) is problematic. Whereas King et al.(1993) have attempted to respecify the equity sensitivity construct based on experimental and field results, their heavy reliance on empirical insights in doing so is an unacceptable substitute for a sound theoretical representation of equity sensitivity as a concrete realm of interest. Purely empirical methods can easily yield temporal and situational results with little generality. In this respect, the importance of theory in requiring that one be explicit about a construct's domain of applicability or scope (to ensure its content validity) cannot be overemphasized (Jackson, 1970).

A second issue stems from the ESI's development. Even if one were to ignore the question of its applicability to the redefined equity sensitivity construct spectrum, the methods used in the ESI's design are likewise troublesome. Adherence to systematic item-development procedures is considered critical in designing a content-valid measure (Hinkin, 1998). In this regard, using a panel of judges to evaluate proposed items for their relevance to domain specifications is considered necessary to ensure item clarity and meaningfulness. Rather than creating and then editing an item pool based on the independent review of a panel of expert judges, however, the 20 items comprising the ESI's item pool were chosen on an intuitive basis according to their face validity (King & Miles, 1993). That is, based on what they appeared superficially to measure rather than what they actually measured. As Anastasi (1976: 139) notes, face validity should not be confused with content validity, in that, the former is not validity in the technical sense of being objectively determined. Further, relying on the persons developing a measure to assess the adequacy of their own work is generally viewed as unacceptable. Indeed, as Schriesheim et al. (1993) write, "This is clearly not a satisfactory situation, as the shortcomings of human judgment may result in content assessments which are inadvertently biased or which are of poor quality due to other factors" (p. 394). In sum, given its uncertain content adequacy, it is unclear whether substantive findings derived from the ESI reflect true relations between variables or rather, inadequate instrumentation (Sackett & Larson, 1990: 467).

Sample-Specific Scoring

A second matter relating to the ESI centers on its sample-specific scoring. Using a procedure devised by Huseman et al. (1985), ESI scores are divided into three groups, paralleling the aforementioned classes or categories of individuals (viz., Benevolents, Equity Sensitives, and Entitleds). Accordingly, individuals who score $-\frac{1}{2}$ SD from the mean ESI score for a focal sample are categorized as Entitleds, those who score $+\frac{1}{2}$ SD from the same mean are categorized as Benevolents and, finally, individuals who score between these extremes are categorized as Equity Sensitives. To illustrate, if the mean ESI score for a focal sample is 29 and the SD is 6, then the breakpoints for the three ESI groups are: 26 and below ($-\frac{1}{2}$ SD from the mean) = Entitleds, 27 to 31 = Equity Sensitives, and 32 and above ($+\frac{1}{2}$ SD from the mean) = Benevolents.

King et al. (1993) assert that "sample-specific breakpoints are necessary because of the unique characteristics of any particular sample that can influence response to the ESI" (p. 305). Among these purported sample characteristics are organizational context, age homogeneity or heterogeneity, and social desirability (King et al., 1993). In essence, the rationale for sample-specific breakpoints is that unique sample characteristics contaminate ESI scores, which are somehow "corrected" by using a sample-specific scoring procedure.

On balance, this rationale seems arguable. First, neither has there been research cited nor convincing theoretical arguments advanced regarding why sample characteristics such as organizational context should contaminate ESI scores. Second, the empirical evidence King et al. (1993) do offer for their assertion that age and social desirability contaminate ESI scores is equivocal. In the case of age, correlations between age, and ESI scores in five samples have been 0.01, 0.03, −0.08, 0.21, and 0.31 (King & Miles, 1994). Referring to these correlations, King and Miles (1993) have conceded that "these correlations reveal no discernable pattern across the five samples" (p. 19). With respect to social desirability, King and Miles (1994) have reported correlations ranging from −0.04 to 0.29 between various measures of social desirability and ESI scores. Although these two variables may, in certain instances, be correlated, King and Miles (1993) did not interpret such correlations as indicating contamination, but rather as evidence of a conceptual relation. Specifically, King and Miles (1993) have noted, "as measured benevolence increases, so does subjects' inclination to manage the impression that others have of them. This finding is logically consistent with the proposed nature of those with high measured benevolence (i.e., a relationship orientation)" (p. 20). King and Miles's (1993) logic aside, in cases where socially desirable responding is conceptually related to a construct, controlling for the tendency to give such responses is considered inappropriate (Zerbe & Paulhus, 1987). Moreover, there has been no evidence provided to indicate that sample-specific breakpoints do "correct" for sample-specific contaminants.

A further point regarding the ESI's sample-specific scoring procedure is that the groupings it produces (viz., Benevolents, Equity Sensitives, and Entitleds) may be incorrect. A direct comparison of the Huseman et al. (1985) sample-specific scoring procedure with a theoretically consistent scoring procedure illus-

trates this concern. For comparison purposes, sample-specific breakpoints from a previous study (Miles et al., 1989) are taken as an example of the ESI's scoring procedure. Using these sample-specific breakpoints, 0–26 = Entitleds, 27–33 = Equity Sensitives, and 34–50 = Benevolents. In contrast, King et al.'s (1993) theoretically consistent scoring procedure is as follows: 0–24 = Entitleds, 25 = Equity Sensitives, and 26–50 = Benevolents. As a result of using sample-specific breakpoints, inconsistencies occur such as labeling individuals who score 25 as Entitleds when they have endorsed statements that are theoretically consistent with an equity sensitive position. Such inconsistencies could possibly explain why researchers (e.g., Hartman & Villere, 1990; Miles, Hatfield, & Huseman, 1989) have been unable to empirically distinguish between Entitleds and Equity Sensitives. The confusion resulting from sample-specific scoring is further compounded by the fact that the resulting breakpoints change from sample to sample. Consequently, individuals' classifications may change as the sample to which they belong changes, thereby producing artifactual variations in study results. For example, an individual whose ESI score is 30 may be a Benevolent in one sample, an Equity Sensitive in a second, and an Entitled in a third.

Cut Scores

A final matter relating to the ESI's scoring procedure is its reliance on cut scores to classify subjects as Benevolents, Equity Sensitives, or Entitleds. The ESI's trichotomization of a continuous variable (i.e., equity sensitivity) treats individuals in each group as if they were identical in terms of the attribute in question, when in reality, this is not the case (Cohen, 1983). The effect of trichotomizing ESI scores is to dispense with differences within each of the three portions of their joint distribution, leaving only distinctions among the three. This is akin to adding measurement error to a focal variable, in that, as Dwyer (1996) notes, "A person with a score just above the cut is not very different from one with a score just below the cut – until someone makes them different by treating them different" (p. 361).

A loss of measurement information is not the only cost of trichotomization. Such a loss may lead, in turn, to a reduction in measurement precision, an underestimation of the magnitude of bivariate relations, and a lowering of statistical power (Varga, Rudas, Delaney, & Maxwell, 1996). In addition, Maxwell and Delaney (1993) have demonstrated that dichotomizing multiple continuous predictor variables results in biased (i.e., inflated) estimates of their true effects (both main effects and interactions), increasing the probability of Type-I errors. Likewise, it is doubtful that the results of studies in which continuous variables have been trichotomized actually reflect true underlying population effects. Seemingly recognizing the difficulties associated with the use of cut scores, rather than trichotomizing equity sensitivity into three distinct groups some researchers have used the entire ESI scale, considering it a continuous measure (e.g., Mueller, & Clarke, 1998; O'Neill & Mone, 1998). Doing so, however, does not address the ESI's content deficiency.

Background

Development and evaluation of the EPQ occurred in six studies conducted at a land-grant university located in the southeastern United States. Descriptions of the samples used in each of the six studies are presented in Table 1; sample sizes ranged from 372 to 30. Although a majority of subjects were White, a conscious attempt was made to avoid overly homogenous samples to enhance representativeness and to ensure sensitivity to subgroup differences. Our goal was to sample people in everyday life similar to those with whom the EPQ would be ultimately used. The six studies included both male ($n = 489$) and female ($n = 735$) Whites ($n = 1001$), Blacks ($n = 101$), Asians/Pacific Islanders ($n = 74$), Hispanics ($n = 34$), and American Indians ($n = 6$) that ranged in age from 17 to 53 years. Whereas the studies were conducted in a university setting, as indicated in Table 1, 33 to 90% of each sample was currently employed an average of 18.8 to 40.3 hr per week. Approximately 46% of the 1,224 subjects participating in all six studies had previously held a full-time job for an average of 3.76 years. Two pilot studies (A and B) were initially conducted to purify the EPQ and assess its reliability. Two assessment studies were then undertaken to examine the EPQ's construct validity. A laboratory experiment was performed next to determine the EPQ's predictive validity. Finally, a test-retest reliability study was conducted to provide evidence regarding the consistency of the measurements yield by the EPQ across time.

In examining the EPQ's construct validity, four hypotheses consistent with the conceptual framework underlying the equity sensitivity construct were advanced. First, we hypothesized that external locus of control would be positively correlated with equity sensitivity (H_1). Our thinking was that "getting" (i.e., an entitlement act) is an externally controlled outcome because what one receives depends on what others are willing to give in an exchange. In contrast, "giving" (i.e., a benevolent act) is an internally controlled outcome because individuals can altogether decide how much they wish to give in such a situation.

In contrast, we hypothesized that there would be a negative correlation between old-fashionedness and equity sensitivity (H_2). Ray (1990) defines an old-fashion individual as one who is conscientious, conservative, nice to others, and prone to perfectionism with good self-control. Benevolents, with the importance that they place on inputs (i.e., giving), as well as on the relationship (rather than economic) side of exchanges, seem to fit this definition.

We expected a positive association between Machiavellianism and equity sensitivity (H_3). As a strategy of social conduct, Machiavellianism involves manipulating others for personal gain, often against the others' self-interests (Wilson, Near, & Miller, 1996, p. 285). People high in Machiavellianism (high Machs) view others cynically, show little concern for conventional morality, and openly confess to lying, cheating, and manipulating to get what they want from others (Kashy & DePaulo, 1996). We reasoned that high Machs are more likely to be Entitleds because they ignore norms of reciprocity in dealing with others and use opportunistic means to achieve their ends (cf. Mason & Mudrack, 1997). Blumstein and Weinstein (1969) demonstrated that high Machs are more likely to

Table 1. Descriptions of Pilot, Validity Assessment, and Laboratory Experiment Samples

Study	n	Gender	Percent currently employed	Average number of hours worked per week	Age	Race
Pilot Study A	372	223 female 149 male	64	21.5	M = 21.5 years SD = 5.4 Range = 17 to 51	309 White 23 Asian or Pacific Islander 32 Black 4 Hispanic 2 American Indian 2 No classification
Pilot Study B	193	103 female 90 male	33	22.6	M = 22 years SD = 3.9 Range = 18 to 52	157 White 13 Hispanic 11 Asian or Pacific Islander 9 Black 2 American Indian 1 No classification
Validity assessment One	269	173 female 96 male	62	18.8	M = 20.45 years SD = 7.3 Range = 17 to 53	218 White 21 Asian or Pacific Islander 20 Black 9 Hispanic 1 No classification
Validity Assessment Two	174	130 female 44 male	49	24.1	M = 21.22 years SD = 5.6 Range = 17 to 61	128 White 29 Black 9 Asian or Pacific Islander 2 American Indian 4 No classification
Laboratory Experiment	186	84 female 102 male	66	19.7	M = 21.54 years SD = 4.2 Range = 18 to 53	162 White 9 Black 9 Asian or Pacific Islander 6 Hispanic
Test-Retest Reliability Study	30	22 female 8 male	90	40.3	M = 33.37 years SD = 9.3 Range = 20 to 49	27 White 2 Black 1 Asian or Pacific Islander

take advantage of a partner who had previously benefited them, whereas low Machs endorsed an equity norm in the same circumstance.

Like low Machs, people with a strong Protestant ethic (PE) generally follow an equity norm in the distribution of outcomes (Greenberg, 1979). In this respect, Entitleds should score low on PE because low PE-endorsers are interested in getting something for nothing (Greenberg, 1978). In counterpoint, Benevolents should score high on PE because high PE-endorsers view work as intrinsically satisfying and worthwhile. Moreover, they value giving or self-sacrificing to one's work as a means for finding personal significance (Jones, 1997). Thus, we expected a negative relationship between equity sensitivity and the Protestant ethic (H_4).

To further examine the EPQ's validity, a fifth hypothesis was tested, in a laboratory experiment, to determine the EPQ's ability to predict how individuals would react to different reward conditions (i.e., states of equity/inequity). It was expected that Benevolents, who prefer giving to receiving, would favor situations in which they are under-rewarded (McLoughlin & Carr, 1997). Entitleds, on the other hand, with their preference for getting rather than giving, were expected to prefer situations in which they are over-rewarded. For Equity Sensitives, who strive to follow an equity norm, the relationship between satisfaction and reward condition was expected to be curvilinear. Thus, we hypothesized that there would be a significant interaction between equity sensitivity and reward condition (i.e., under-reward, over reward, and equitable reward) in predicting pay satisfaction and overall satisfaction (H_5).

Pilot Studies A and B

Method

Procedure.   Two pilot studies (A and B) were initially conducted to purify and assess the reliability of the proposed EPQ. In initiating Pilot Study A, adhering to suggestions made by Reckase (1996), 79 items were generated by the authors to reflect the input-outcome preferences of the three classes or categories of equity sensitivity identified by Huseman et al. (1987). Four knowledgeable judges with advanced training in psychometric theory evaluated the 79 items for content clarity and meaningfulness. Each judge, acting alone, sorted the items into the three equity sensitivity preference categories. That is, Benevolent, Equity Sensitive, and Entitled. A total of 16 items was retained on the basis of being correctly classified into their intended category by all four judges. Items that anchored the midpoint of the equity sensitivity spectrum were eliminated due to conceptual problems surrounding their aggregation with entitled and benevolent items. In terms of scoring, it is impossible to empirically combine equity sensitive items with entitled and benevolent items in a meaningful way. For example, if a subject disagrees with an equity sensitive item that anchors a scale midpoint, does that disagreement cause the subject's equity sensitivity score to increase or decrease? An argument could be made for either direction because both Entitleds and Benevolents are insensitive to equity as originally defined by Adams (1965). In selecting potential EPQ items, we sought to: (a) retain as much richness in the

items as possible and (b) avoid item redundancy so as to maximize the breadth of measurement (Boyle, 1991).

Subjects who participated in both pilot studies were read a set of standard-ized instructions giving the purpose of the studies, subjects' duties, anonymity and confidentiality assurances, and procedural details. Five-point response scales ranging from *strongly disagree* (1) to *strongly agree* (5) were used for all equity sensitivity items. Paulhus's (1986) 40-item measure of social desirability (α = 0.74 and 0.73, respectively) was also administered to all subjects. A response scale ranging from 1 (*not true*) to 5 (*very true*) was used to measure socially desirable responding. Finally, a demographic form was used to collect informa-tion concerning education, chronological age, gender, race, and work experience. The order in which measures were completed by the subjects was varied.

Results

Pilot Study A

Before analyzing the pool of 16 equity sensitivity items initially defined as input data for Pilot Study A, preliminary tests were conducted to determine if subject scores were appropriate for factor analysis (Norušis, 1985). Barlett's test of sphericity was performed and the Kaiser-Meyer-Olkin measure of sampling adequacy was calculated. In addition, the data's correlation matrix and off-diagonal elements of the anti-image covariance matrix were examined. Results indicated that the data were suitable for further analysis.

The results of a principal axis factor analysis, using commonalities on the primary diagonal with a varimax rotation, are presented in Table 2. (An oblique rotation performed on the data yielded similar results.) Bearing in mind Gorsuch's (1997) recommended procedures for exploratory item-factor analysis, examina-tions of a scree plot and eigenvalues revealed that a single-factor solution was the most succinct way to describe the covariance structure. The mean factor loading for the 16 items was 0.54, demonstrating their homogeneity. A mean interitem correlation of 0.50 supported the presence of a unidimensional structure. The alpha coefficient was 0.87.

Examination of item frequency distributions and item standard deviations (see Table 2) revealed that restriction of range was not a concern. Item correla-tions with socially desirable responding averaged |.17|, with a range from 0.26 to -0.31, suggesting that this bias is small and does not mask meaningful relation-ships with other variables. To further assess the degree to which the results may have been affected by common-method variance associated with single-source data, we used procedures outlined by Brooke, Russell, and Price (1988) and Mathieu and Farr (1991) to estimate a confirmatory factor analysis to determine if a single global (method) factor would emerge. A model positing that a single factor underlies the study variables did not fit well (Bentler-Bonett normed fit index; NFI = 0.590, nonnormed fit index; NNFI = 0.407, comparative fit index; CFI = 0.604). On the other hand, a two-factor model comprising the EPQ and socially desirable responding variables produced an excellent fit to the data (NFI = 0.970, NNFI > 1.00, CFI = 1.00). The two-factor model also provided

Table 2. Factor Loadings, Means, and SD for Pilot Studies A and B

	Pilot Study A			Pilot Study B		
Item[a]	Factor loadings	M	SD	Factor loadings	M	SD
1. I prefer to do as little as possible at work while getting as much as I can from my employer.[b]	70	2.16	.90	71	2.03	.76
2. I am most satisfied at work when I have to do as little as possible.[b]	63	2.20	.91	61	1.94	.77
3. When I am at my job, I think of ways to get out of work.[b]	62	2.24	.80	59	2.16	.75
4. If I could get away with it, I would try to work just a little bit slower than the boss expects.[b]	62	2.27	.94	59	1.86	.81
5. It is really satisfying to me when I can get something for nothing at work.[b]	61	2.45	.90	48	2.21	.81
6. It is the smart employee who gets as much as he/she can while giving as little as possible in return.[b]	60	2.04	.79	50	1.92	.79
7. Employees who are more concerned about what they can get from their employer rather than what they can give to their employer are the wise ones.[b]	58	2.35	.87	55	2.19	.84
8. When I have completed my task for the day, I help out other employees who have yet to complete their tasks.	57	2.01	.83	52	1.78	.84
9. Even if I received low wages and poor benefits from my employer, I would still try to do my best at my job.	54	2.64	.98	50	2.63	.94
10. If I had to work hard all day at my job, I would probably quit.[b]	52	2.19	.78	47	2.09	.77
11. I feel obligated to do more than I am paid to do at work.	50	2.55	.90	43	2.24	1.02
12. At work, my greatest concern is whether or not I am doing the best job I can.	48	2.10	.88	58	1.94	.83
13. A job which requires me to be busy during the day is better than a job which allows me a lot of loafing.	47	2.49	1.03	53	2.16	.84
14. At work, I feel uneasy when there is little work for me to do.	45	2.49	.88	58	1.98	.80
15. I would become very dissatisfied with my job if I had little or no work to do.	39	3.06	.93	45	3.17	.97

Table 2.   Factor Loadings, Means, and SD for Pilot Studies A and B (*continued*)

	Pilot Study A			Pilot Study B		
Item[a]	Factor loadings	M	SD	Factor loadings	M	SD
16. All other things being equal, it is better to have a job with a lot of duties and responsibilities than one with few duties and responsibilities.	38	2.48	.88	42	2.31	.84
Coefficient α	.87			.86		
Eigenvalues	4.81			4.63		
% item variance explained	30.00			28.90		

Pilot A, n = 372; Pilot B, n = 193. Decimals omitted for factor loadings.
[a]Order of items presentation is based on source factor. Items were presented randomly and summed to yield a single equity sensitivity score. Response alternatives (coded 1 to 5) were *strongly disagree, disagree, neither agree nor disagree, agree,* and *strongly agree.*
[b]Reverse scored.

a significantly better fit to the data than a null model (where all factor loadings and factor intercorrelations were constrained to equal zero; $x^2_{(21)}$ = 384.905). These results suggest that common-method variance alone cannot explain our results and that the factors, as assessed, are empirically distinct.

Pilot Study B

A second pilot study was conducted to cross-validate the factor loadings obtained in Pilot Study A. Once again, preliminary tests confirmed the appropriateness of subject scores for factor analysis. The results of a principal axis factor analysis using the same procedure as outlined in Pilot Study A are likewise reported in Table 2. The mean factor loading for the 16 items was 0.53, again demonstrating their homogeneity. A mean inter-item correlation of 0.47 provided further support for the presence of a unidimensional structure. Coefficient alpha was 0.86.

Examination of item frequency distributions and item standard deviations (see Table 2) revealed no restriction of range. Item correlations with socially desirable responding averaged |.12| with a range from 0.00 to −0.27, suggesting the absence of a general response set in EPQ scores. To further assess the degree to which these results may have been affected by common-method variance associated with single-source data, we once again estimated a confirmatory factor analysis to determine if a single global (method) factor would emerge. A model positing that a single factor underlies the study variables did not fit well (NFI = 0.754, NNFI = 0.727, CFI = 0.805). In contrast, a two-factor model comprising the EPQ and socially desirable responding variables provided a much better fit (NFI = 0.928, NNFI = 0.990, CFI = 0.993). The two-factor model also provided a significantly better fit to the data than a null model($x^2_{(28)}$= 285.596).

These results not only suggest that common-method variance alone cannot explain our results and that the factors, as assessed, are empirically distinct, but

demonstrate the repeatability of the EPQ's psychometric properties across two heterogenous samples. On this basis, the final EPQ was set at 16 items. Response alternatives to all items were coded from 1 (*strongly disagree*) to 5 (*strongly agree*). Item responses were summed so that the greater the score the greater the preference for giving more in inputs than receiving in inputs.

Validity Assessment Study One

Method

The following measures were used to initially assess the EPQ's construct validity in testing Hypotheses One and Two.

Locus of control. Locus of control, the tendency to attribute the causes of events either to oneself or to factors in the external environment, was gauged using Rotter's (1966) I-E instrument ($M = 10.81$; $SD = 4.35$; KR-20 = 0.77). This instrument was chosen because of its established use and accepted psychometric properties. It consists of 23 item-statement pairs, using a forced-choice format, and 6 filler item-statement pairs. Internal statements are paired with external statements. One point is given for every external statement selected. Scores on the I-E instrument can range from 0 (most internal) to 23 (most external). Rotter (1966) reported an internal consistency coefficient (Kuder–Richardson) of 0.70 and a test-retest reliability coefficient of 0.72 (using a 1-month interval) for this measure.

Old-fashionedness. Adorno, Levinson, Frenkel–Brunswick, and Sanford's (1950) California F instrument, Form 40–45, was used to assess old-fashioned orientation ($M = 115.85$; $SD = 15.88$; $\alpha = 0.81$). As expatiated by Ray (1990), old-fashionedness represents a new understanding of Adorno et al.'s (1950) F scale and is defined as being conscientious, conservative, nice to others, and inclined to perfectionism with good self-control. Responses to each of 30 items were made on a seven-point scale, ranging from *disagree strongly* (1) to *agree strongly* (7). Omissions were given a midpoint value of 4. Scores may range from 30 (low old-fashionedness) to 210 (high old-fashionedness). Adorno et al. (1950) reported an average split-half reliability of 0.90 for this measure.

Results

Construct validity. Table 3 presents descriptive statistics and zero-order correlations among all variables in Validity Assessment Study One. All intercorrelations are low ($rs < 0.20$), suggesting that the EPQ is not redundant with other study variables. As a precaution, prior to initially assessing the EPQ's construct validity in testing Hypotheses One and Two, EPQ scores ($M = 37.67$; $SD = 9.05$; $\alpha = 0.88$) were tested for mean differences because of gender (see Brockner & Adsit, 1986) and race. Gender was coded 1 = male and 2 = female. Because of small cell sizes across racial groups, race was coded 1 = White and 2 = nonwhite. Whereas there was a significant difference in EPQ scores attributable to race ($t \cong -3.44$, $df = 56.39$, $p = < 0.001$), there was no difference attributable to gender ($t = -0.66$, $df = 257$, ns). Consequently, first-order partial correlations removing the effect of race were computed in testing both Hypotheses 1 and 2.

Table 3. Descriptive Statistics and Zero-Order Correlations for Validity Assessment Study One

Variables	Range[a]	M	SD	r 1	2	3
1. Equity sensitivity	16–80	37.61	9.05	(.88)[b]		
2. Locus of control	0–23	10.81	4.35	.20	(.77)[c]	
3. Old-fashionedness	30–210	115.85	15.88	.01	.12	(.81)[b]

n = 258–261 because of missing data; r > .20, p < .01 (two-tailed test). Reliability estimates are in parentheses.
[a]Potential score range.
[b]Coefficient alpha.
[c]KR-20.

The EPQ was positively correlated with locus of control ($r_{14. x}$ = 0.20, p < .01). This finding supports Hypothesis 1, stating that equity sensitivity would be related to locus of control, with an external locus of control associated with greater sensitivity and is consistent with the proposition that Benevolents are more focused on what they can give in an exchange relationship, whereas Entitleds are more concerned with what they can receive.

In contrast, EPQ scores were not correlated ($r_{14. x}$ = 0.01, ns) with old-fashionedness. This finding fails to support Hypothesis 2, stating that equity sensitivity would be negatively related to having an old-fashion orientation. Given Ray's (1990) definition of an old-fashioned individual as someone who is conscientious, conservative, nice to others, and inclined to perfectionism with good self-control, we had reasoned that it would make sense for these people to place a greater importance on giving, as well as the relationship (rather than economic) side of exchanges.

To assess the possible effects of common-method variance associated with single-source data, we again estimated a confirmatory factor analysis to determine if a single global (method) factor would emerge. A model positing that a single factor underlies the study variables fit poorly (NFI = 0.456, NNFI = 0.345, CFI = 0.476). By contrast, a three-factor model comprised of the EPQ, locus of control, and old-fashionness variables fit well (NFI = 0.921, NNFI = 0.965, CFI = 0.974). The three-factor model also provided a significantly better fit to the data than a null model ($x^2_{(55)}$ = 753.270). These results suggest that common-method variance alone cannot explain our results and that the factors, as assessed, are distinct components.

Validity Assessment Study Two

Method

The following measures were used to further assess the EPQ's construct validity in testing Hypotheses Three and Four.

Machiavellianism. The MACH IV measure (Christie & Geis, 1970) was used to assess the degree to which one is oriented toward manipulating other

individuals as a means of achieving one's personal goals ($M = 70.99$; $SD = 14.67$; $\alpha = 0.76$). Responses to each of 20 items were made on a 6-point scale, ranging from -3 (*strongly disagree*) to $+3$ (*strongly agree*) with the 0 excluded. For ease of data manipulation, responses were converted to a seven-point scale by adding a constant of 4 to each item score. Adding 20 to each score makes the lowest possible Mach score 40, the highest 160, and the neutral or midpoint score 100. Christie and Geis (1970) reported an average item-test correlation of 0.38 and an average split-half reliability of 0.79 for this measure.

Protestant ethic. A 19-item measure developed by Mirels and Garrett (1971) was used to tap Protestant ethic ($M = 92.88$; $SD = 10.12$; $\alpha = 0.59$). This instrument was chosen because of its wide use and accepted psychometric properties. Designed to assess the degree that one believes in the value of hard work, has great ambition, has self-control, condemns laziness, and is willing to delay gratification, this measure has been found by Mirels and Garrett (1971) to have an internal reliability of 0.79, as well as item-test correlations ranging from 0.24 to 0.55. Responses to each item were made on a six-point scale, ranging from -3 (*strongly disagree*) to $+3$ (*strongly agree*), with the 0 excluded. For ease of data manipulation, responses were converted to a seven-point scale by adding a constant of 4 to each item score. This measure provides a possible score of 10 (low Protestant ethic) to 133 (high Protestant ethic) for each subject.

Results

Construct validity. Table 4 reports descriptive statistics and intercorrelations among all variables in Validity Assessment Study Two. All correlations were low, again alleviating concern that the EPQ duplicates other study measures. The largest correlation (between equity sensitivity and Machiavellianism) was 0.39, indicating less than 15% overlap in common variance between constructs. The mean EPQ score was 36.69 ($SD = 8.72$; $\alpha = 0.88$). Given the preceding evidence concerning subgroup differences in equity sensitivity, EPQ scores were once again tested for confounding because of gender and race. Following the same coding scheme as used in Validity Assessment Study One, both race ($t = -1.99$, $df = 163$, $p < .05$) and gender differences were present. Consequently, second-order partial correlations removing the effects of both race and gender were computed in testing Hypotheses 3 and 4.

Table 4. Descriptive Statistics and Zero Under Correlations for Validity Assessment Study Two

Variables	Range[a]	M	SD	1	2	3
					r	
1. Equity sensitivity	16–80	36.69	8.72	(.88)		
2. Machiavellianism	40–160	70.99	14.67	−.39	(.76)	
3. Protestant ethic	0–133	92.88	10.12	.27	.15	(.59)

$n = 165$–168 because of missing data; $r \leq |.27|$, $p < .01$ (two-tailed test).
Coefficient alpha reliability estimates are in parentheses.
[a]Potential score range.

As expected, equity sensitivity was negatively correlated with Machiavellianism ($r_{12. xx} = -0.35$; $p < .001$). This finding supports Hypothesis 3 and is consistent with research on high Machs and exchange relationships, as well as the notion that high Machs are likely to ignore the norm of reciprocity in dealing with others.

Finally, EPQ scores were positively correlated with the Protestant ethic ($r_{12. xx} = 0.27$; $p < .001$). This finding supports Hypothesis 4, with Entitleds being low- and Benevolents being high-PE endorsers, and is consistent with the belief that Entitleds are interested in getting something for nothing whereas Benevolents view work as intrinsically satisfying and worthwhile.

To assess the degree to which the results may have been affected by common-method variance associated with single-source data, we estimated a confirmatory factor analysis to determine if a single global (method) factor would emerge. A model positing that a single factor underlies the study variables did not fit well (NFI = 0.224, NNFI = 0.002, CFI = 0.224). In contrast, a three-factor model comprised of the EPQ, Machiavellianism, and Protestant ethic variables fit well (NFI = 0.872, NNFI = 0.915, CFI = 0.941). The three-factor model also provided a significantly better fit to the data than a null model ($x^2_{(36)} = 331.199$). These results suggest that common-method variance alone cannot explain our results and that the factors, as assessed, are empirically distinct.

Laboratory Experiment

Method

Experimental Design and Analysis. The objective of this phase of the reported research was to establish the EPQ's predictive validity. That is, to determine the EPQ's ability to predict how individuals would react to different states of equity/inequity, subjects were randomly assigned to one of three reward conditions (under-reward, equitable reward, or over-reward) to test whether reward condition (independent variable) would interact with equity sensitivity to predict pay satisfaction and overall satisfaction (H_5). Because subjects' equity sensitivity was treated as a continuous rather than a trichotomized variable, a hierarchical multiple-regression analysis rather than ANOVA was used to investigate main and interaction effects.

Procedure

In the initial round of data collection, subjects completed the EPQ ($M = 35.14$; $SD = 8.01$; $\alpha = 0.86$) and a demographic form. To avoid demand characteristics, they also completed "filler" items. Two weeks later, subjects were randomly assigned to one of three reward conditions: under-reward, equitable reward, or over-reward. A 2-week interval between initial and final data collection is the same as that used by King et al. (1993).

Subjects read and responded to stimulus information manipulated by means of scenarios. The scenarios depicted a subject and comparison other (Person B) as being very similar in all respects, including the ability of each to perform a laboratory task (i.e., coding questionnaires or proofreading manuscripts) so as to

receive a prescribed monetary reward. Specifying equal ability for Person B and a focal subject was done to limit threats to self-esteem that were common in early equity research (Campbell & Pritchard, 1976).

The scenarios manipulated either a focal subject's and/or comparison other's inputs or outcomes to create different reward conditions. Subjects in the under-reward and over-reward conditions were exposed to two scenarios, one of which produced a state of inequity by varying inputs and holding outcomes identical to those of a comparison other, whereas the other produced a state of inequity by varying outcomes and holding inputs identical to those of a comparison other. In the equitable reward condition subjects were exposed to three scenarios. One scenario (Scenario B) produced a state of equity by holding both inputs and outcomes identical to those of a comparison other, whereas the other two scenarios (Scenarios A and C) produced a state of equity by varying both inputs and outcomes relative to those of a comparison other. The three equitable reward condition scenarios, reproduced in the Appendix, were specifically constructed for this study because Austin et al. (1980) and King et al. (1993) only investigated under-reward and over-reward conditions. Subjects read the scenarios and an-swered questions (see below) that constituted the dependent variables (viz., pay satisfaction and overall satisfaction). Responses to the scenarios were summed to yield a single satisfaction score.

Measures

A one-item manipulation check assessed perceived pay equity/inequity. The item consisted of a 7-point scale assessing subjects' perceptions of who was getting a "better deal." Scale options ranged from (1) "*Person B is getting a much better deal than me,*" to (4) "*We are both receiving an equally good . . . or bad . . . deal,*" to (7) "*I am getting a much better deal than Person B*" (cf. King et al.,1993). The midpoint of the scale specified an equitable reward.

Attached to the scenarios were three questions (i.e., items) concerning subjects' pay and overall satisfaction. The anchors for each item ranged from (1) *very dissatisfied* to (4) *neither satisfied nor dissatisfied* to (7) *very satisfied*. The first item assessed subjects' satisfaction with their general work situation; the second, their satisfaction with their pay; and the third, their satisfaction with the work they were performing. Responses to the three items were summed to form a single measure of overall satisfaction, with means and SD ranging from 3.97 and 0.82 (under-reward condition) to 4.93 and 0.70 (equitable reward) to 4.94 and 0.90 (over-reward). The second item was examined separately because pay satisfaction has been shown to be strongly associated with perceived pay equity (Summers & DeNisi, 1990). The means and SD for this item ranged from 2.89 and 0.96 (under-reward condition) to 4.98 and 0.87 (equitable reward) to 5.47 and 1.20 (over-reward).

Results

Manipulation Check.   A one-way ANOVA was conducted to determine the effectiveness of the reward-condition manipulation. Results of this analysis re-vealed that reward condition had a significant effect on perceptions of who was

getting a "better deal" ($F = 428.35$, $df = 166$, $p < .0001$). Furthermore, the means for each reward condition were all in the anticipated direction, with each condition yielding different responses. Specifically, subjects perceived Person B as getting a "better deal" in the under-reward condition ($M = 2.23$), whereas in the over-reward condition ($M = 6.01$) subjects perceived themselves as getting a "better deal" than Person B. In the equitable reward condition ($M = 4.09$), subjects perceived an "equally good deal" for themselves and Person B. The differences between the reward conditions were also examined using a Tukey-HSD posthoc comparison procedure. The results of this analysis revealed significant differences ($p < .05$) in equity/inequity perceptions between the under-reward and equitable reward conditions, the equitable reward and over-reward conditions, and the under-reward and over-reward conditions. Overall, these results indicated that the manipulation of the independent variable, reward condition, was effective.

Hypothesis 5.   Hypothesis 5 anticipated a significant interaction between equity sensitivity, as measured by the EPQ, and reward condition in predicting pay and overall satisfaction. To test for the interaction of equity sensitivity with reward condition, hierarchical multiple-regression analyses were performed. Given its stepwise nature, hierarchical multiple-regression is beneficial for controlling covariates that may confound an analysis. Both race and gender were treated as covariates in light of the preceding results. Both covariates were entered in the regressions first, followed by the main effects of reward condition and equity sensitivity and then their interaction entered last. The significance of the incremental R^2 caused by the addition of the interaction term was assessed. This procedure was repeated for both pay satisfaction and overall satisfaction.

The hierarchical multiple-regression analysis, using pay satisfaction as the dependent variable (Table 5), revealed the increment in R^2 from the addition of the interaction term (Reward Condition X EPQ) to be nonsignificant ($R2 = 0.55$, $F(5,161) = 38.60$, $p < .001$; $\Delta R^2 = 0.00$, $F = 0.17$, *ns*). Likewise, the hierarchical multiple-regression analysis, using overall satisfaction as the dependent variable (Table 6), revealed that the increment in R^2 accompanied by the addition of the interaction term (Reward Condition X EPQ) to be nonsignificant (full model $R^2 = 0.29$, $F(5,161) = 13.17$, $p < .001$; $\Delta R^2 = 0.00$, $F = 0.23$, *ns*). Thus, neither result supports Hypothesis 5.

As noted in Tables 5 and 6, however, equity sensitivity was a primary predictor of both pay satisfaction and overall satisfaction. Supplementary analyses revealed that, considered alone (controlling for gender and race), equity sensitivity had significant main effects on both pay ($\Delta R^2 = 0.03$, $F = 12.18$, $p < .001$) and overall satisfaction ($\Delta R^2 = 0.02$, $F = 16.48$, $p < .001$) beyond that accounted for by reward condition. Thus, equity sensitivity, as measured by the EPQ, seems to operate as an additive rather than interactive (i.e., moderator) variable. Furthermore, an inspection of the associated beta weights revealed that equity sensitivity was negatively related to both pay satisfaction ($\beta = -0.19$) and overall satisfaction ($\beta = -0.14$). In other words, those scoring high on the EPQ (i.e., greater entitlement) reported generally lower levels of pay and overall satisfaction

Table 5. Hierarchical Multiple Regression Analysis for Pay Satisfaction

Variables	Step 1 (β_1)	Step 2 (β_2)	Step 3 (β_3)
Covariates			
Gender	−.16*	−.08	−.08
Race	.01	.02	.02
Main effect			
Reward condition		.69***	.60**
EPQ		−.19	−.25
Interaction term			
Rewards conditions X			
EPQ			.11
df	(2,164)	(4,162)	(5,161)
Overall F	2.15	48.46***	38.60***
R^2	.03	.54	.55
ΔR^2		.51	.00
$F(\Delta R^2)$		92.37***	.17

EPQ, Equity sensitivity as measured by the Equity Preferences Questionnaire.
*$p < .05$; **$p < .01$; ***$p < .001$.

Table 6. Hierarchical Multiple Regression Analysis for Overall Satisfaction

Variables	Step 1 (β_1)	Step 2 (β_2)	Step 3 (β_3)
Covariates			
Gender	−.17*	−.11	−.12
Race	.01	.02	.02
Main effect			
Reward condition		.49***	.35
EPQ		−.14	.19
Interaction term			
Reward condition X			
EPQ			.16
df	(2,164)	(4,162)	(5,161)
Overall F	2.55	16.48***	13.17***
R^2	.03	.29	.29
ΔR^2		.26	.00
$F(\Delta R^2)$		29.53***	.23

EPQ, Equity sensitivity as measured by the Equity Preferences Questionnaire.
*$p < .05$; **$p < .01$; ***$p < .001$.

across all reward conditions than did those individuals scoring low on the EPQ (i.e., greater benevolence).

Test-Retest Reliability Study

The objective of this final phase of the reported research was to further assess the consistency of the measurements yielded by the EPQ across time (i.e., the correlation between two applications of the EPQ with the same sample, carried out with a time interval intervening between the two occasions). In the present case, this interval was five weeks, a period of time judged long enough for subjects to have forgotten their original replies, but not long enough for any serious changes in the characteristic under study. From the point of view of test-retest reliability, the result was favorable, $r_{tt} = 0.84$, with the effects of race and gender removed. This result suggests that the EPQ is acceptably reliable, being reasonably stable over time, and compared favorably with published personality inventories.

Discussion

The primary objective of the reported research was to develop and evaluate a new measure of equity sensitivity, the EPQ. Psychometrically, the EPQ appears sound. A consistent pattern of factor loadings across two heterogenous samples demonstrated the repeatability of its measurement properties. Two validity assessments established its construct validity, a laboratory experiment provided support for its predictive validity and, finally, a test-retest reliability study provided evidence regarding the consistency of its measurements across time.

In terms of construct validity, four hypotheses were advanced. Hypothesis 1, stating that equity sensitivity would be positively associated with locus of control was supported. The EPQ was significantly associated with locus of control ($r_{14.x} = 0.20$, $p < .01$), with an external locus of control associated with greater sensitivity. Thus, the more entitlement individuals report, the more external their locus of control. This finding is consistent with the proposition that Entitleds are more focused on what they can get from an exchange (an externally controlled outcome), whereas Benevolents are more concerned with what they can give to an exchange (an internally controlled outcome). Giving is an internally controlled outcome because one alone decides how much to give, whereas getting is an externally controlled outcome because what one gets is often dependent on what others are willing to give.

Hypothesis 2, stating that equity sensitivity would be negatively correlated with old-fashionedness was not supported. There was virtually no correlation between the EPQ and old-fashionedness ($r_{14.x} = 0.01$, ns). This finding is inconsistent with Ray's (1990) definition of an old- fashioned individual as someone who is conscientious, conservative, nice to others, and prone to perfectionism with good self-control. Whereas Benevolents, with the importance they place on inputs (i.e., giving) in an exchange relationship, seem to fit this definition better than Entitleds, this reasoning was not upheld. This suggests that both

Benevolents and Entitleds can have attitudes, values, and practices characteristic of the past.

Hypothesis 3, stating that equity sensitivity would be significantly correlated with Machiavellianism was supported. The EPQ was significantly associated with Machiavellianism ($r_{12.xx} = -0.35$, $p < .01$). That is, Entitleds reported more Machiavellian tendencies than did Benevolents. This finding is consistent with research on Machiavellianism (Blumstein & Weinstein, 1969) that has found that high Machs endorse an outcome maximization norm in an exchange relationship with a partner whereas low Machs endorse an equity norm. The endorsement by high Machs of an outcome maximization norm in an exchange relationship with a partner is consistent with the importance placed on outcomes by Entitleds in exchange relations.

Hypothesis 4, stating that equity sensitivity would be negatively associated with the Protestant ethic was likewise supported. The EPQ was inversely correlated with the Protestant ethic ($r = 0.27$, $p < .01$). The finding is consistent with the notion that Entitleds should score low on PE because low PE-endorsers are interested in getting something for nothing. Likewise, Benevolents should score high on PE because high PE-endorsers view work as intrinsically satisfying and worthwhile, and value giving or self-sacrificing to one's work as a means for finding personal significance.

Hypothesis 5 was examined in a laboratory experiment. Hypothesis 5, stating that there will be significant interaction between equity sensitivity and reward condition (i.e., under-reward, over-reward, and equitable reward) in predicting pay satisfaction and overall satisfaction was not supported. Hierarchical multiple-regression analyses revealed that the increment in R^2 accompanied by the addition of an interaction term (Reward Condition X EPQ) was not significant for the dependent variables of pay satisfaction and overall satisfaction. These same analyses revealed, however, that whereas equity sensitivity does not interact with reward condition, it is a primary predictor of both pay satisfaction and overall satisfaction.

Areas for Further Examination

The current research raises as many questions as it answers concerning the equity sensitivity construct. As a result, there are number of areas in equity sensitivity research that merit further examination. Among these areas is the selection of the dependent variables generally used in prior equity sensitivity research, the exact nature of the equity sensitivity construct, and the incremental utility of equity sensitivity as a construct.

Selection of Dependent Variables.   An initial area of concern in equity sensitivity research is the limited range of dependent variables used in previous research. Following equity theory in general, equity sensitivity research (e.g., Huseman et al., 1985; King et al., 1993) has typically used job-related satisfaction as the dependent variable of interest. Whereas, as originally conceived, Adams (1965) does state there can be little doubt but that inequity results in "dissatisfaction," he defines dissatisfaction quite broadly as "an unpleasant emotional state," giving as examples "anger" and "guilt"(p. 283). He goes on to postulate

that the presence of inequity creates "tension" within individuals who will then be motivated to remove or reduce it. In limiting their investigations to the effects of inequity on job satisfaction, equity sensitivity researchers have primarily focused on a single emotional state. A more encompassing test of the equity sensitivity construct would entail using other emotional outcomes (e.g., anger or guilt) as dependent variables. It is possible, using guilt, for example, as a dependent variable, that we may find that equity sensitivity moderates reactions to different reward conditions. Future research in the equity sensitivity area should use other emotional states as dependent variables to more fully explicate this construct.

Construct Definition. A second area of concern centers around the exact nature of the equity sensitivity construct. As defined by Huseman et al. (1987), the equity sensitivity construct referred to an individual's preference for a certain equity ratio (i.e., unfavorable inequity, equity, or favorable inequity) relative to a comparison other. In other words, the original definition of the construct states that Benevolents will perceive exchanges in which they are underbenefited as equitable, whereas Entitleds will perceive exchanges in which they are overbenefited as equitable. Meanwhile, Equity Sensitives will perceive exchanges in which their respective inputs and outcomes are proportionate as equitable. Hence, neither Benevolents nor Entitleds will prefer actual equity relative to a comparison other. Based on this logic, equity sensitivity should thus interact with reward condition to predict satisfaction (Huseman et al., 1987). For example, for Benevolents there should be a negative, linear relationship between reward condition and satisfaction, whereas for Entitleds there should be a positive, linear relationship between reward condition and satisfaction. The results of the reported hierarchical multiple-regression analyses, however, revealed that the Reward Condition X Equity Sensitivity interaction did not significantly affect pay satisfaction or overall satisfaction. Therefore, equity sensitivity does not seem to interact with reward condition to predict satisfaction. Rather, given its significant main effect on pay satisfaction and overall satisfaction, equity sensitivity seems to operate as an additive variable.

The equity sensitivity construct has been recently redefined (King & Hinson, 1994; King et al., 1993; Miles et al., 1994) as representing an individual's orientation (i.e., input vs. outcome) toward exchange relationships. That is, Entitleds are more focused on outcomes (i.e., what they receive) in an exchange relationship, whereas Benevolents are more focused on inputs (i.e., what they give) in such a relationship. In addition, this redefinition includes a restatement of the relation between reward condition and satisfaction for Benevolents. This redefinition proposes that there is a positive, linear relationship between reward condition and satisfaction for both Entitleds and Benevolents and continues to assume that equity sensitivity moderates reactions to different reward conditions.

The results of the current research provide some support for this redefinition. Further modifications (such as equity sensitivity having an additive rather than an interactive effect in predicting satisfaction), however, may be needed. Such modifications, nonetheless, should be based on more than the results of the single laboratory experiment reported here. To provide a more definitive test of whether equity sensitivity interacts with reward condition to predict satisfaction, future

research should use actual employees reacting to actual equitable/inequitable situations.

Incremental Utility of the Construct. Finally, the incremental utility of the equity sensitivity construct should be examined. The notion that equity sensitivity is positively related to satisfaction closely parallels the finding that dispositional variables account for a significant amount of variance in job satisfaction (e.g., 30%; Arvey, Bouchard, Segal, & Abraham, 1989). Consistent with research on disposition and job satisfaction, Benevolents would logically seem prone to be more satisfied with their jobs, whereas Entitleds would similarly seem to be less satisfied with their jobs.

A central question for researchers is whether or not equity sensitivity accounts for a significant amount of variance in job satisfaction beyond that accounted for by other dispositional variables that affect satisfaction. One such dispositional variable that affects satisfaction is positive affectivity. Positive affectivity (Watson, Clark, & Carey, 1988) is an individual's tendency to experience positive affect (e.g., satisfaction) across situations. Positive affectivity is positively related to satisfaction (Clark & Watson, 1988). An interesting test of the equity sensitivity construct would be to examine if it has incremental validity for predicting satisfaction across reward conditions beyond that provided by positive affectivity.

Possible Study Limitations

Common-method variance and generalizability are possible limitations of the current research. As regards generalizability, the EPQ was developed and validated in a university setting. Whereas such a setting is appropriate when examining basic psychological processes involved in human behavior (such as perceptions of fairness, in this case), there is a need to examine how well the EPQ and its attendant findings hold up with a broader range of respondents. Because only paper-and-pencil measures were used to collect study data, common-method variance is also a possible limitation. There are, however, several aspects of the current research that lessen common-method concerns. First, none of the items in the new measure were highly correlated with social desirability, a primary source of common-method variance (Spector, 1987). Subjects in the reported research responded to all questionnaires under the condition of anonymity, which reduces socially desirable responding (Zerbe & Paulhus, 1987). Second, results of confirmatory factor analyses suggest that common-method variance alone cannot explain our results. Third, both positively and negatively worded items were used to measure equity sensitivity. Use of positive and negative wording can lessen mono-method bias and acquiescence by varying the presentation of items (Greenleaf, 1992). Fourth, the two measures used for collecting data in the reported laboratory experiment were administered at two different times. Varying the context (e.g., situation, time, or place) in which a measure is completed has been shown to reduce common-method variance (Fiske, 1982). Fifth, a variety of response formats were used to anchor various focal measures, thereby, reducing the potential threat of mono-method bias. Possible limitations aside, the EPQ

seems to be both psychometrically sound and useful for advancing equity sensitivity research.

Appendix

Equitable Reward Scenarios

Scenario A: Differential Subject—Comparison Other Inputs and Outcomes

You and Person B are both undergraduates. Both of you are juniors, excellent students, and anxious to earn extra money to support yourselves while attending college. Both of you have been working under a Work-Study program doing various jobs for various professors. Both of you have worked for two semesters at \$4.25 (U.S.) per hour and have performed adequately. Professor Martin, a sociologist, hires you and Person B to do some coding of questionnaires. The data come from a national sample so there is plenty of work to do.

You code about 10 questionnaires per hour and Person B codes about eight questionnaires per hour. Professor Martin's graduate assistant told you on Wednesday that you were performing better than Person B in terms of accuracy and speed.

At 5:00 p.m. on Friday, Professor Martin's secretary comes in and gives you and Person B your pay envelopes. You open yours and see that Professor Martin is paying you \$4.75 per hour. Person B opens the pay envelope and says, "Hey, I got \$4.25 per hour. How much did you get?"

Scenario B: Identical Subject—Comparison Other Inputs and Outcomes

You and Person B are both undergraduates. Both of you are juniors, excellent students, and anxious to earn extra money to support yourselves while attending college. Both of you have been working at the university's printing press where you have performed various jobs. Both of you have worked for two semesters at \$4.25 (U.S.) per hour and have performed adequately. Your manager, Robin Lawrence, assigns both of you to a new job, proofing manuscripts.

You and Person B both proofread about 10 pages per hour. The assistant manager, responsible for proofreaders, told both of you on Wednesday that you both were doing well and seemed to be quite equal in terms of error detection and speed of proofreading.

At 5:00 p.m. on Friday, you and Person B go to your manager's secretary to pick up your checks. The secretary hands you and Person B your pay envelopes. You open yours and see that you are being paid \$4.25 per hour. Person B opens the pay envelope and says, "Hey, I got \$4.25 per hour. How much did you get?"

Scenario C: Differential Subject—Comparison Other Inputs and Outcomes

You and Person B are both undergraduates. Both of you are juniors, excellent students, and anxious to earn extra money to support yourselves while attending college. Both of you have been working under a Work-Study program doing various jobs for various professors. Both of you have worked for two semesters at \$4.25 (U.S.) per hour and have performed adequately. Professor Martin, a

sociologist, hires you and Person B to do some coding of questionnaires. The data come from a national sample so there is plenty of work to do.

You code about eight questionnaires per hour and Person B codes about 10 questionnaires per hour. Professor Martin's graduate assistant told you on Wednesday that Person B was performing better than you in terms of accuracy and speed.

At 5:00 p.m. on Friday, Professor Martin's secretary comes in and gives you and Person B your pay envelopes. You open yours and see that Professor Martin is paying you $4.25 per hour. Person B opens the pay envelope and says, "Hey, I got $4.75 per hour. How much did you get?"

Source.   Scenarios A and C adapted from "Internal Standards Revisited: Effects of Social Comparisons and Expectancies on Judgments of Fairness and Satisfaction," by W. Austin, N. C. McGinn, and C. Susmilch, 1980, *Journal of Experimental Social Psychology, 16,* p. 432, and "A Test and Refinement of the Equity Sensitivity Construct," by W. C. King, E. W. Miles, and D. D. Day, 1993, *Journal of Organizational Behavior,14,* pp. 305–306.

Notes

1. Our efforts to develop a new measure of equity sensitivity commenced before King et al.'s (1993) redefinition of the equity preferences of Benevolents and Entitleds. Consequently, additional items, not considered here, were proposed to examine aspects of the original Huseman et al. (1985) construct conceptualization. These items dealt with preferences for: (a) levels of inputs, (b) levels of outcomes, (c) relative levels of inputs to outcomes, and (d) specific equity ratios relative to comparison others. As the EPQ is based on the King, Miles, and Day (1993) revised equity sensitivity definition, these additional items effectively served as "filler" items, abating possible response bias because of demand characteristics. Moreover, by their substantive nature, these items used various response formats, thereby, serving to reduce common-method variance.
2. Factor matrices are available from the authors. The pattern of factor loadings is consistent across samples.

References

Adams, J. S. 1963. Toward an understanding of inequity. *Journal of Abnormal and Social Psychology, 76,* 422–436.
Adams, J. S. 1965. Inequity in social exchange. *Advances in Experimental Social Psychology, 2,* 267–299.
Adorno, T. W., Levinson, D. J., Frenkel-Brunswik, E., & Sanford, R. N. 1950. *The authoritarian personality.* New York: Harper.
Anastasi, A. 1976. *Psychological testing* (4th ed.). New York: Macmillan.
Arvey, R. D., Jr., Bouchard, T. J., Segal, N. L., & Abraham, L. M. 1989. Job satisfaction: Environmental and genetic components. *Journal of Applied Psychology, 74,* 187–192.
Austin, W., McGinn, N. C., & Susmilch, C. 1980. Internal standards revisited: Effects of social comparisons and expectancies on judgments of fairness and satisfaction. *Journal of Experimental Social Psychology, 16,* 426–441.

Blumstein, P. W., & Weinstein, E. A. 1969. The redress of distributive injustice. *American Journal of Sociology,* 74, 408–418.

Boyle, G. J. 1991. Does item homogeneity indicate internal consistency or item redundancy in psychometric scales? *Personality and Individual Differences,* 12, 291–294.

Brockner, J., & Adsit, L. 1986. The moderating impact of sex on the equity-satisfaction relationship: A field study. *Journal of Applied Psychology,* 71, 585–590.

Brooke, B. P., Jr., Russell, D. W., & Price, J. L. 1988. Discriminant validation of measures of job satisfaction, job involvement, and organizational commitment. *Journal of Applied Psychology,* 73, 139–145.

Campbell, J. P., & Pritchard, R. D. 1976. Motivation theory in industrial and organizational psychology. In M. D. Dunnette (Ed), *Handbook of industrial and organizational psychology* (pp. 63–130). Chicago: Rand-McNally.

Christie, R., & Geis, F. L. 1970. *Studies in Machiavellianism,* New York: Academic Press.

Clark, L. A., & Watson, D. 1988. Mood and the mundane: Relations between daily life events and self-reported mood. *Journal of Personality and Social Psychology,* 54, 296–308.

Cohen, J. 1983. The cost of dichotomization. *Applied Psychological Measurement,* 7, 249–253.

Dwyer, C. A. 1996. Cut scores and testing: Statistics, judgment, truth, and error. *Psychological Assessment,* 8, 360–362.

Fiske, D. W. 1982. Convergent-discriminant validation in measurements and research strategies. In D. Brinberg & L. H. Kidder (Eds.), *Forms of validity in research* (pp. 77–92). San Francisco: Jossey-Bass.

Gorsuch, R. L. 1997. Exploratory factor analysis: Its role in item analysis. *Journal of Personality Assessment,* 68, 532–560.

Greenberg, J. M. 1979. Protestant ethic endorsement and the fairness of equity inputs. *Journal of Research in Personality,* 13, 81–90.

Greenberg, J. M. 1978. Equity, equality, and the Protestant ethic: Allocating rewards following fair and unfair competition. *Journal of Experimental Social Psychology,* 14, 217–226.

Greenleaf, E. A. 1992. Improving rating scale measures by detecting and correcting bias components in some response styles. *Journal of Marketing Research,* 29, 176–188.

Hartman, S. J., & Villere, M. F. (1990, November). *Equity sensitivity revisited: Another twist in some preliminary findings.* Paper presented to the Southern Management Association meeting, Orlando, Florida.

Hinkin, T. R. 1998. A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods,* 1, 104–121.

Hunter, J. E., & Schmidt, F. L. 1990. Dichotomization of continuous variables: The implications for meta-analysis. *Journal of Applied Psychology,* 75, 334–339.

Huseman, R. C., & Hatfield, J. D. 1989. *Managing the equity factor.* Boston: Houghton Mifflin.

Huseman, R. C., Hatfield, J. D., & Miles, E. W. 1985. Test for individual perceptions of job equity: Some preliminary findings. *Perceptual and Motor Skills,* 61, 1055–1064.

Huseman, R. C., Hatfield, J. D., & Miles, E. W. 1987. A new perspective on equity theory: The equity sensitivity construct. *Academy of Management Review,* 12, 222–234.

Jackson, D. N. 1970. A sequential system for personality scale development. In C. D. Spielberger (Ed.), *Current topics in clinical and community psychology* (Vol. 2, pp. 61–96). New York: Academic Press.

Jones, H. B., Jr. 1997. The Protestant ethic: Weber's model and the empirical literature. *Human Relations,* 50, 757–778.

Kashy, D. A., & DePaulo, B. M. 1996. Who lies? *Journal of Personality and Social Psychology,* 70, 1037–1051.

King, W. C., Jr., & Hinson, T. D. 1994. The influence of sex and equity sensitivity on relationship preferences, assessment of opponent, and outcomes in a negotiation experiment. *Journal of Management,* 20, 605–624.

King, W. C., Jr., & Miles, E. W. 1993. *The measurement of equity sensitivity.* Unpublished manuscript, Miami University, Oxford, OH.

King, W. C., Jr., & Miles, E. W. 1994. The measurement of equity sensitivity. *Journal of Occupational and Organizational Psychology,* 67, 133–142.

King, W. C., Jr., Miles, E. W., & Day, D. D. 1993. A test and refinement of the equity sensitivity construct. *Journal of Organizational Behavior,* 14, 301–317.

Mason, E. S., & Mudrack, P. E. 1997. *'Entitleds' and 'benevolents': A comparative ethical profile.* Paper presented to the Academy of Management meeting, December, Boston, Massachusetts.

Mathieu, J. E., & Farr, J. L. 1991. Further evidence for discriminant validity of measures of organizational commitment, job involvement, and job satisfaction. *Journal of Applied Psychology,* 76, 127–133.

Maxwell, S. E., & Delaney, H. D. 1993. Bivariate median splits and spurious statistical significance. *Psychological Bulletin,* 113, 181–190.

McLoughlin, D., & Carr, S. C. 1997. Equity sensitivity and double demotivation. *Journal of Social Psychology,* 137, 668- 670.

Miles, E. W., Hatfield, J. D., & Huseman, R. C. 1989. The equity sensitivity construct: Potential implications for worker performance. *Journal of Management,* 15, 581–588.

Miles, E. W., Huseman, R. C., & Hatfield, J. D. 1994. Equity sensitivity and outcome importance. *Journal of Organizational Behavior*, 15, 585–596.

Mirels, H. L., & Garrett, J. B. 1971. The Protestant ethic as a personality variable. *Journal of Consulting and Clinical Psychology*, 36, 40–44.

Mueller, S. L., & Clarke, L. D. 1998. Political-economic context and sensitivity to equity: Differences between the United States and the transition economies of central and eastern Europe. *Academy of Management Journal*, 41, 319–329.

Norušis, M. J. 1985. *SPSS-X advanced statistics guide*. New York: McGraw-Hill.

O'Neill, B. S., & Mone, M. A. 1998. Investigating equity sensitivity as a moderator of relations between self-efficacy and workplace attitudes. *Journal of Applied Psychology*, 83, 805–816.

Osigweh, C. A. B. 1989. Concept fallibility in organizational science. *Academy of Management Review*, 14, 579–594.

Patrick, S. L., & Jackson, J. J. 1991. Further examination of the equity sensitivity construct. *Perceptual and Motor Skills*, 73, 1091–1106.

Paulhus, D. L. 1986. Self-deception and impression management in test responses. In A. Angleitner & J. S. Wiggins (Eds.), *Personality assessment via questionnaire* (pp. 143–165). New York: Springer-Verlag.

Ray, J. J. 1990. The old-fashioned personality. *Human Relations*, 43, 997–1013.

Reckase, M. D. 1996. Test construction in the 1990s: Recent approaches every psychologist should know. *Psychological Assessment*, 8, 354–359.

Rotter, J. B. 1966. Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80 (609).

Sackett, P. R., & Larson, J. R., Jr. 1990. Research strategies and tactics in industrial and organizational psychology. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol. 1, pp. 419–490). Palo Alto, CA: Consulting Psychologist Press.

Schriesheim, C. A., Powers, K. J., Scandura, T. A., Gardiner, C. C., & Lankau, M. J. 1993. Improving construct measurement in management research: Comments and a quantitative approach for assessing the theoretical content adequacy of paper-and-pencil survey-type instruments. *Journal of Management*, 19, 385–417.

Spector, P. E. 1987. Method variance as an artifact in self-reported affect and perceptions at work: Myth or significant problem? *Journal of Applied Psychology*, 69, 673–686.

Summers, T. P., & DeNisi, A. S. 1990. In search of Adams' other: Reexamination of referents used in the evaluation of pay. *Human Relations*, 42, 497–511.

Varga, A., Rudas, T., Delaney, H. D., & Maxwell, S. E. 1996. Dichotomization, partial correlation, and conditional independence. *Journal of Educational and Behavioral Statistics*, 21, 264- 282.

Vecchio, R. P. 1981. An individual-differences interpretation of the conflicting predictions generated by equity theory and expectancy theory. *Journal of Applied Psychology*, 66, 470- 481.

Watson, D. 1988. Intraindividual and interindividual analyses of positive and negative affect: Their relation to health complaints, perceived stress, and daily activities. *Journal of Personality and Social Psychology*, 54, 1020–1030.

Wilson, D. S., Near, D., & Miller, R. R. 1996. Machiavellianism: A synthesis of the evolutionary and psychological literatures. *Psychological Bulletin*, 19, 285–299.

Zerbe, W. J., & Paulhus, D. L. 1987. Socially desirable responding in organizational behavior: A reconception. *Academy of Management Review*, 12, 250–264.