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APPLICANT REACTIONS TO SELECTION: DEVELOPMENT OF THE SELECTION PROCEDURAL JUSTICE SCALE (SPJS)

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This paper describes research that fills a void in the applicant reactions literature by developing a comprehensive measure of Gilliland's (1993) procedural justice rules, called the Selection Procedural Justice Scale (SPJS). Five separate phases of scale development were conducted. In Phase 1 we generated and refined the items. For Phase 2 we reduced the items through exploratory factor analysis using data gathered from 330 applicants for the job of court officer and found higher-order factors consistent with Greenberg (1993a, 1993b). In Phase 3 we confirmed the factor structure using a separate sample of 242 applicants and trainees for the court officer job. In Phase 4 we assessed the initial convergent and divergent validity of the scale. In Phase 5 we tested the generalizability of these items in general and for those receiving positive and negative selection outcomes using 2 student samples. The results demonstrated the usefulness of the SPJS in differentiating each of Gilliland's procedural justice rules and relating them to outcomes included in his model of applicant reactions. A copy of the SPJS is included in the Appendix.

Research on job applicant perceptions of selection justice has been growing rapidly in recent years. To date, however, research in this area has used ad hoc measurement. Although ad hoc measurement is typical in new areas of study, research can be advanced much further when common metrics are used (Heneman, 1985; Ryan & Ployhart, 2000). The purpose of the present series of studies was to develop and offer preliminary psychometric evidence for such a multifaceted measure, termed the Selection Procedural Justice Scale (SPJS).

Procedural Justice and Applicant Reactions

Research in the area of applicant reactions to selection procedures has been based on the organizational justice literature (e.g., Greenberg, 1993a). Procedural justice refers to the perceived fairness of the methods used to make organizational decisions (Folger & Greenberg, 1985). Such justice perceptions are in turn related to attitudes toward organizations (Lind & Tyler, 1988). The underlying logic is that applicants perceive a hiring process as more fair to the extent that the selection procedures seem fair. Organizations may have the ability to positively influence procedural justice. Thus, procedural justice is an important aspect of reactions that applicants have to personnel selection. In addition, distributive justice refers to the perceived fairness of outcomes of decisions.

Research on applicant reactions to selection systems has been largely driven by Gilliland's (1993) theoretical model. His model includes 10 procedural justice rules that fall under three broad categories. The *formal characteristics* category includes job-relatedness, chance to perform, reconsideration opportunity, and consistency. Under the *explanation* grouping is feedback, information known, and openness. Within the *interpersonal treatment* domain is treatment at the test site, two-way communication, and propriety of questions. These rules are theorized to influence perceptions of overall fairness of a given selection process and other outcomes. Potential outcomes noted by Gilliland include *reactions during hiring* such as organizational attractiveness, job acceptance, and test-taking motivation; *reactions after hiring* such as legal actions, on-the-job performance, attitudes, and reapplication intentions; and *self-perceptions* such as self-esteem and test-taking self-efficacy.

Studies of applicant reactions and associated outcomes have tended to support Gilliland's (1993) model. For example, applicant reactions relate to outcomes such as applicants' intentions to pursue employment with an organization, recommendations to others to apply at the organization, perceived organizational attractiveness, and turnover intentions (e.g., Bauer, Maertz, Dolen, & Campion, 1998; Cropanzano &

Konovsky, 1995; Macan, Avedon, Paese, & Smith, 1994; Smither, Reilly, Millsap, Pearlman, & Stoffey, 1993; Truxillo & Bauer, 1999). In addition, it has also been shown that applicants tend to favor procedures that are seen as job-related (e.g., Ployhart & Ryan, 1997; Rynes, 1993; Rynes & Connerley, 1993; Smither et al., 1993; Steiner & Gilliland, 1996).

Measurement of Procedural Justice

However, as is often the case with new areas of research, measurement has not been consistent across studies. Developing a comprehensive scale of procedural justice rules specifically geared to the selection process is therefore important for three reasons. First, reactions to an employee selection process involve complex sets of perceptions. Valid and reliable measurement of the different procedural justice constructs can assist practitioners and researchers in more fully understanding the role that fairness plays among applicants in different selection situations. Second, the measurement of the procedural justice factors is an important component to being able to systematically test Gilliland's (1993) model of applicant reactions to selection and to improve understanding of this model (Ryan & Ployhart, 2000). Third, as noted by Greenberg (1990), without the use of established scales it is difficult to compare results across studies. Heneman (1985) has termed measures that are created for each specific study "ad hoc measures" and argues that the use of ad hoc measures can fragment research in a given area. The present line of research fills this void in the applicant reactions literature by developing a reliable and valid measure of each of Gilliland's procedural justice rules.

Therefore, the purpose of this study included three interrelated goals. The primary goal was to develop a comprehensive set of items to fully capture Gilliland's (1993) procedural justice rules in an applied selection context. The second goal was to assess the psychometric properties of the scale and to refine the instrument. The third goal was to gather preliminary construct validity evidence for the measure.

To address these goals, we used standard psychometric procedures for scale development (e.g., Hinkin, 1998). Specifically, there were five separate phases to the scale development process. Phase One was designed to address our first goal and included item generation and development. Phases Two and Three were designed to address our second goal by including initial item reduction through exploratory factor analysis, examination of reliability estimates, and confirmatory factor analysis (CFA). Phases Four and Five were designed to address our third goal by assessing the convergent and divergent validity of the scale. A sum-

TABLE 1

Summary Table of Activities and Data Used by Phase

	Activity	Sample description
Phase 1	Item generation	5 SMEs with PhD degrees
	Item sort	4 doctoral students and 1 faculty member in industrial-organizational psychology
Phase 2	Item reduction	330 applicants for a court officer job
Phase 3	Confirmatory factor analysis	172 applicants and 70 trainees for a court officer job
Phase 4	Construct validity information	70 trainees for a court officer job (from Phase 3)
Phase 5	Replication and generalizability	Sample One: 201 undergraduate business and psychology students
		Sample Two: 232 undergraduate business students (95 "Failers") (137 "Passers")

mary of these phases in terms of activities and a sample description is contained in Table 1.

Phase One: Item Generation

Potential items reflecting all of Gilliland's (1993) procedural justice rules were written by three of the authors of the present paper to expand on items used by Bauer et al. (1998). Item stems were designed so that the scale could be used in diverse employment and research settings. Items were originally developed following a deductive approach. The definitions of procedural justice were examined and served as the basis for item generation. See Table 2 for the definitions based on Gilliland's (1993) model which were used to develop items for each subscale. Following the development of multiple items for each definition, items were reviewed by five subject matter experts (SMEs). All had doctoral degrees in areas related to human resource management and two of the five are personnel testing experts from the organization used for the field samples. The items were revised several times in an iterative process based on feedback from these five SMEs. This resulted in 50 items with 5 items for each of the 10 procedural justice rules identified by Gilliland.

Items were developed following the guidelines described by Hinkin (1998). Specifically, items were short, they were written in simple language, they addressed a single issue, and they were worded positively to avoid potential psychometric problems with negatively worded items

TABLE 2

*Phase One: Selection Procedural Justice Dimension Definitions
Used in Developing Items*[1]

1. *Job-relatedness* is defined as:

"The extent to which a test either appears to measure content relevant to the job situation or appears to be valid."

2. *Chance to perform* is defined as:

"Having adequate opportunity to demonstrate one's knowledge, skills, and abilities within the testing situation."

3. *Reconsideration opportunity* is defined as:

"The opportunity to challenge or modify the decision making/evaluation process and the opportunity to review and/or discuss scores and scoring."

4. *Consistency of administration* is defined as:

"Decision procedures are consistent and without bias across people and over time."

5. *Feedback* is defined as:

"The provision of timely and informative feedback."

6. *Information known* is defined as:

"Information, communication, and explanation about the selection process prior to testing."

7. *Openness* is defined as:

"The extent to which communications are perceived by applicants as being honest, sincere, truthful, and open."

8. *Treatment* at the test site is defined as:

"The degree to which applicants are treated with warmth and respect."

9. *Two-way communication* is defined as:

"The opportunity for applicants to offer input or to have their views considered during the test/in the selection process."

10. *Propriety of questions* is defined as:

"The extent to which questions avoid personal bias, invasion of privacy, and illegality and are deemed fair and appropriate."

Note: Definitions were adapted from Gilliland (1993).

(e.g., Schriesheim, Eisenbach, & Hill, 1991). Several steps were taken to ensure these goals. First, the longest question consisted of 17 words ("I was satisfied with the amount of time it took to get feedback on my test results"). Second, two SMEs from the hiring organization reviewed the items with the goal of increasing the familiarity of the wording to applicants. Third, care was taken to ensure that each item only reflected one question (i.e., we avoided the use of double-barreled items). Finally, a

response scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*
was used to ensure consistency across items, minimal time needed to re-
spond to the survey, adequate variance, and adequate scale reliabilities
(Lissitz & Green, 1975).

To assure that the items were perceived as tapping the 10 factors pre-
sented in Table 2, five additional SMEs (four doctoral students and one
faculty member in industrial-organizational psychology) back-translated
the 50 items onto the 10 dimensions. Anderson and Gerbing (1991) sug-
gest two ways to analyze this type of data for substantive validity. First,
the *substantive agreement index* (SAI) is defined as the proportion of re-
spondents who assign a particular item to its intended construct. The SAI
ranges from 0–1, with larger values indicating a greater proportion of
people assigning an item to its intended construct. Using this approach,
we found that 90.4% of items were assigned to the predicted factor (SAI
of .904). The SAI does not, however, indicate the extent to which an
item might also be tapping other, unintended constructs. The second
recommended approach is to estimate the degree to which raters were
able to correctly match items with constructs, controlling for the extent
that raters assigned the items to other constructs. An index suggested by
Anderson and Gerbing (1991) to assess this is the *substantive-validity co-
efficient* (SVC). The SVC ranges from −1.00 to 1.00, with larger values
indicating more correct matching. The results of this second analysis
showed an overall SVC of .74, which indicates a high level of correct
matching. A total of 36 of the items had a SVC of 1.00 indicating they
were matched only on their correct dimension. Taken together, these
analyses indicated that the initial 50 SPJS items appeared to match their
intended dimensions according to this sample of SMEs.

*Phase Two: Item Reduction Through Exploratory Factor Analysis
and Reliability Analysis*

Method

Kelloway (1995) suggests that exploratory factor analysis is useful in
the early stages of scale development for data reduction and to deter-
mine the items that load best on each factor. Although our items were
designed to parallel an existing theoretical model of applicant reactions
to selection (i.e., Gilliland, 1993), we felt that a more conservative strat-
egy was to initially eliminate poor performing items using exploratory
factor analysis, then confirm the factor structure using confirmatory fac-
tor analysis (CFA) with a new sample.

The sample in Phase Two was drawn from a northeastern govern-
ment organization that screens large numbers of applicants for the job
of court officer. Court officers are designated as peace officers and are

responsible for security functions in courthouse facilities. The first hurdle in the court officer selection process was a written examination. The 50 SPJS items developed in Phase One were administered to 458 court officer applicants immediately after applicants had taken their written selection examination. Most of the 458 applicants completed surveys ($n = 424$). After listwise deletion, 330 of the 424 participants remained. This sample size to item ratio of 6 to 1 meets the minimum recommended requirement for obtaining stable factor solutions (Guadagnoli & Velicer, 1988; Hinkin, 1998; Rummel, 1970). Of the respondents, 54.5% were men, 29.5% were White, 31.4% were African American, and 21.9% were Hispanic. All applicants had at least a high school degree.

Results

Principal components analysis with oblique rotation was performed on the 50 items using SPSS factor analysis. Oblique rotation was used because the procedural justice rules are hypothesized to be nonorthogonal (Arvey & Sackett, 1993; Gilliland, 1993). Based on several criteria including minimum eigenvalues, drops in the scree plot, and interpretability of factors (Ford, MacCallum, & Tait, 1986), an 11-factor solution was selected consisting of 9 factors from Gilliland's (1993) procedural justice model, plus job-relatedness split into 2 factors. Thus, with the exception of the job-relatedness finding, the results supported the hypothesized factor structure.

Although not hypothesized, job-relatedness being two factors rather than one is consistent with existing theory and with the wording of the dimension ("The extent to which a test *either* appears to measure content relevant to the job situation *or* appears to be valid," [emphasis added] Gilliland, 1993). In other words, job-relatedness is conceptualized as having *both* content and predictive validity components (Gilliland, 1993), and this has been found in empirical research as well (Smither et al., 1993). Therefore, the two job-relatedness subscales were retained because they were consistent with past theorizing and were supported empirically.

The 11 factors accounted for 69.7% of the variance in the items, and 48 of the 50 items loaded on the expected factors. Two items failed to load on any factor (one item from the openness subscale and one from the information known subscale). Therefore, these two items were not included in subsequent analyses.

With these items deleted, a second factor analysis was run with the remaining 48 items. Principal components factoring with oblique rotation was used, and an 11-factor solution was found again. These 11 factors accounted for 71.04% of the variance in the items. All items loaded

on their appropriate factor (> .40). Factor intercorrelations ranged from .02 to .37.

All subscales showed adequate reliability for a new scale with alpha coefficients ranging from .73 (job-relatedness content) to .92 (treatment). These alpha coefficients meet or surpass the acceptable level of .70 for newly developed scales (Nunnally, 1978). However, to maximize scale reliabilities and minimize the number of items used in the SPJS, "alpha if item deleted" values were examined. Based on this information, we determined that 9 of the 48 SPJS items could be deleted without decreasing the scale reliabilities, while in most cases actually improving scale reliabilities. Therefore, the remaining 39 items represented three 5-item subscales representing treatment at the test site, reconsideration opportunity, and two-way communication; two 4-item subscales representing openness and chance to perform; four 3-item subscales representing feedback, consistency of test administration, information known, and propriety of questions; and two 2-item subscales representing each job-relatedness construct (content and predictive). The items are listed in the Appendix.

Examination of the correlation among these 11 factors revealed positive correlations ranging from .08 to .62. Therefore, in addition to the factor analysis of all items using oblique rotation, we also conducted an exploratory higher-order factor analysis using orthogonal rotation. Our hope was that this higher-order factor analysis would represent the data more parsimoniously and reflect Gilliland's three factors of formal characteristics, explanation, and interpersonal treatment. However, it factored into two higher-order factors rather than three.

The data represented the two factors well with factor loadings ranging from .65 to .85 for Factor 1 and from .44 to .80 for Factor 2. The job-relatedness predictive, information known, chance to perform, reconsideration opportunity and feedback subscales loaded on the second higher-order factor. The consistency, openness, treatment, two-way communication, and propriety of questions subscales loaded on the first high-order factor. job-relatedness content failed to load on either factor and was retained as a third, separate factor.

Although not supporting Gilliland's model, these results were consistent with the two dimensions of procedural justice posited by Greenberg and colleagues (e.g., Greenberg, 1993b), which we see as relating to *social* factors and *structure* factors. The social factor involves communication with and treatment of job applicants. The structure factor involves the specifics of the actual process, such as the timing of feedback of results and the content of the test itself.

Further, we believe that the factor structure supported by this Phase of data analysis reflects Gilliland's factors of *interpersonal treatment*

(which is similar to social) and *formal characteristics* (which is similar to structure). What was not supported was his *explanation* category as the information known and feedback subscales loaded onto the structure factor while the openness subscale loaded onto the social factor. This was true with the exception of consistency, which contrary to Gilliland's and Greenberg's models loaded onto the social factor rather than the structure factor.

The results provided evidence for the 2-factor structure and internal consistency of the subscales. We next tested the scale using confirmatory factor analysis (CFA) and a new sample of applicants.

Phase Three: Confirmatory Factor Analysis

Method

The 39 remaining SPJS items were administered to a separate sample of 242 applicants and trainees for the job of court officer. These individuals were independent of those applicants who provided Phase Two data. This sample was 57% male, 31% White, 34% African American, and 23% Hispanic. All applicants and trainees had at least a high school degree.

Of the 242 participants, 60 were applicants at the psychological screening stage, 112 were at the physical ability screening stage, and 70 were trainees. The trainees had all passed the selection hurdles for this job (written examination, medical, and physical tests, background investigation, and psychological assessment) and completed surveys on the first day of their Court Officer Academy training program. Therefore, applicants responded to the SPJS items with the referent "test" referring to the last selection hurdle they had undergone (e.g., either the psychological screening or the physical ability screening), and trainees responded to the items with the referent being "tests," which referred to all the selection hurdles they had passed to become trainees. In order to ensure that these three groups were not significantly different from one another in terms of age or gender, ANOVAs were conducted between subsamples. Results revealed no differences. Therefore we combined the three subsamples for use in the CFAs.

Results

A CFA was performed on the revised SPJS using the AMOS statistical package (Arbuckle, 1997). The chi-square test of the hypothesized 11-factor model was significant, chi square = 1308.74, $df = 647, p < .01$, indicating poor fit of the data to the model. However, the chi-square

statistic is known to be sensitive to sample size (Jöreskog & Sörbom, 1989). Furthermore, Carmines and McIver (1981) suggest that a chi-square two to three times larger than the degrees of freedom is acceptable. For the hypothesized 11-factor model, the ratio of chi-square to degrees of freedom was 2.02.

The Comparative-Fit-Index (CFI) and the Root Mean Square Residual (RMSR) are less sensitive to sample size because they do not penalize models with many paths and fewer degrees of freedom. As Table 3 shows, the hypothesized model showed a reasonably good fit for both the CFI and RMSR. The CFI of the hypothesized model was .91, which indicates good model fit (Hinkin, 1998). The RMSR is an indication of the residuals of the predicted parameters from the observed parameters (Jöreskog & Sörbom, 1989). RMSR values of less than .10 indicate a good fitting model. The RMSR for the hypothesized model was .02 and indicates a close fit of the model to the data.

For the 11-factor model, all measurement paths were statistically significant ($p < .01$), and there were no large modification indices. Each relation between the latent variables and their respective indicators (lambda) was large and statistically significant. The lambdas for the 39 items ranged from .66 to .96 with a mean of .86. The intercorrelations of the factors (phi) ranged from .07 to .84 with an average intercorrelation of .35. Seven phi coefficients out of 55 failed to reach significance ($p < .05$). Given the pattern of evidence (i.e., overall fit indices, lambdas, phis, modification indices) and the theory behind the developed measure, we concluded that the SPJS subscales showed interpretable factor structures and were worthy of further examination.

Anderson and Gerbing (1988) suggest that a hypothesized model should be compared to likely alternative models. The goodness-of-fit of the hypothesized 11-factor model was tested in comparison to four other competing models through sequential chi-square difference tests. The first model was the null model in which none of the latent variables were related. Model 2 was a single factor model in which all 39 items loaded onto a single procedural justice factor. Model 3 reflected Gilliland's (1993) three general factors of procedural justice (i.e., formal characteristics, interpersonal treatment, and explanation) in which the items loaded on to one of the three general factors. Model 4 was the 10-factor model proposed by Gilliland. Model 5 was our hypothesized 11-factor model. The results in Table 3 show that the goodness-of-fit-indices for the hypothesized 11-factor model are better than for each of the competing models including the single factor model, null model, 3-factor model, and 10-factor model.

In addition to these chi-square difference tests, the hypothesized 11-factor model with correlated factors was compared to an 11-factor

TABLE 3

Phase Three: Goodness-of-Fit Indices for Model Comparisons

Model		χ^2 (df)	$\Delta\chi^2$ (df)	χ^2 to df ratio	CFI	GFI	AGFI	RMSR
Model 1	Absolute null	8385.16* (741)		11.32	.16	.12	.14	.14
Model 2	1-factor	4404.77* (702)	3980.39* (39)	6.28	.52	.49	.39	.06
Model 3	3-factor	4101.17* (699)	303.60* (3)	5.87	.56	.49	.43	.06
Model 4	10-factor	1444.84* (651)	2656.33* (42)	2.20	.90	.77	.73	.03
Model 5	11-factor (Hypothesized correlated)	1308.74* (647)	136.10* (10)	2.02	.91	.79	.74	.02
Model 6	11-factor (Hypothesized single indictor)	29.70 (19)		1.56	.99	.98	.92	.01
Model 7	3-factor (Higher-order factor model)	1373.38* (653)		2.10	.90	.77	.74	.04
Model 8	3-factor (Higher-order factor single indictor)	150.54* (51)		2.95	.92	.90	.85	.03

*Notes: $n = 242$. Change in χ^2 refers to a difference between the model for that row and the model directly above. CFI = Comparative Fit Index; GFI = Goodness-of-Fit Index; AGFI = Adjusted Goodness-of-Fit Index; RMSR = Root Mean Square Residual.
$p < .01$.

model with uncorrelated factors. Results showed that the hypothesized correlated factors model was a significantly better fit to the data than the uncorrelated factors model, chi square difference = 1132.71, df = 57, p < .01.

Given the support for the 11-factor measurement model, we examined the structural model (Model 6) using single indicators (subscale means). Using single indicators increases the subjects to degrees-of-freedom ratio, which provides more power to examine the structural relationships in the model. For each variable, the path from the indicator to the latent variable (lambda) was set to the square root of the scale reliability. The error variance was set equal to the variance of the scale multiplied by one minus the reliability (Hayduk, 1987; Jörskog & Sörbom, 1989). The chi-square test of the hypothesized model was not significant (chi square = 29.70, df = 19) indicating good fit of the data to the model. The goodness of fit statistics also indicated good fit. The Comparative Fit Index (CFI = .99), the Goodness of Fit Index (GFI = .98), the Adjusted Goodness of Fit Index (AGFI = .92), and the Root Mean Square Residual (RMSR = .01) for the hypothesized single indicator model all surpassed recommended levels for indicating good fit of the data to the model.

Taken together the confirmatory factor analyses suggest that the hypothesized 11-factor model is a viable representation of these data. In order to further develop a more parsimonious representation of the data, we next conducted a higher-order factor analysis on the three factors suggested by the exploratory factor analyses in Phase Two (Model 7). The chi-square test of the higher-order factor model was significant (chi square = 1373.38, df = 653) indicating a less than ideal fit of the data to the model. The goodness of fit statistics, however, indicated better fit. Table 3 shows the Comparative Fit Index (CFI = .90), the Goodness of Fit Index (GFI = .77), the Adjusted Goodness of Fit Index (AGFI = .74), and the Root Mean Square Residual (RMSR = .04). The CFI adjusts for sample size and the number of paths in the model and GFI, AGFI, and RMSR do not. These fit indices are similar to those of our 11-factor hypothesized model. For comparison purposes, we ran a CFA for the higher-order factor model using single indicators and found a good fit with the data. Therefore, both the 11-factor and higher-order factor models were reasonable representations of the data (Model 8). The next step in the scale development of the SPJS was to gather information on the convergent and divergent validity of the scale.

Phase Four: Initial Convergent and Divergent Validity Information

If the SPJS subscales and factors are measuring meaningful and useful constructs, they should demonstrate convergent validity and diver-

gent validity, and there should be a predictable pattern of relationships with other variables within the nomological net of Gilliland's (1993) model. Hinkin (1998) discusses the use of convergent and divergent validity for establishing the construct validity of new measures and cites examples of this approach in the literature (e.g., Hollenbeck, Klein, O'Leary, & Wright, 1989).

Convergent validity. We expected that the SPJS would be correlated with a measure of procedural justice (convergent validity). Gilliland's (1993) model states that each of the procedural justice rules will directly contribute to the global perceptions of procedural justice of the selection process. Therefore, because the SPJS dimensions are based on these procedural justice rules, we hypothesized that the SPJS would be related to a global measure of procedural justice.

Divergent validity. Accordingly, we also expected to find weak or negligible relationships between the SPJS and other, presumably, unrelated measures. In the present study, we focused on demographic variables such as gender and age. Moreover, we also explored the relationship between the SPJS and actual selection test score, a variable that has been found in past research to have a weak relationship with fairness perceptions (e.g., Smither et al., 1993).

Relationships with other variables in the nomological net. Gilliland's (1993) model suggests that procedural justice perceptions predict several important organizational and individual outcomes such as reactions during hiring, reactions after hiring, and self-perceptions. Specifically, these include variables such as job acceptance decisions, application recommendations, organizational commitment, and self-esteem. In the present study we explored the relationship between the SPJS and organizational attractiveness, organizational commitment, recommendation intentions, and self-esteem based on Gilliland's model and prior research (e.g., Bauer et al., 1998; Gilliland, 1994). Finally, we explored the relationship between the SPJS and a measure of distributive justice (outcome fairness). Although Gilliland's model does not suggest a direct relationship between the procedural justice rules and distributive justice, previous research (e.g., Gilliland, 1994; Smither et al., 1993) has shown that procedural justice is correlated with distributive justice.

In summary, therefore, we made the following hypotheses:

Hypothesis 1: The SPJS subscales and the higher-order factors will be significantly correlated with a measure of overall procedural justice.

Hypothesis 2: The SPJS subscales and the higher-order factors will not be significantly correlated with measures such as age, gender, and test score.

Hypothesis 3: The SPJS subscales and the higher-order factors will be significantly related to organizational and individual outcomes (organizational attractiveness, organizational commitment, recommendation intentions, and self-esteem) and a measure of distributive justice.

Method

The sample of court officer trainees ($n = 70$) used in Phase Three were also used to assess convergent and divergent validity. The 39 items of the revised SPJS were used for the 11 SPJS subscales as well as for the *social, structural,* and *job-relatedness content* factors. We used a 3-item *procedural justice* ("I think that the testing process is a fair way to select people for the job of court officer"; "I think that the tests themselves were fair"; "Overall, the method of testing used was fair") and the 2-item *distributive justice* ("I think that my being hired is a fair outcome" "The people who were hired deserved to be") measure adapted from Smither et al. (1993) and Macan et al. (1994). The survey also included five items assessing *organizational attractiveness* (e.g., "This organization is a good place to work") and three items assessing *recommendation intentions* (e.g., "I intend to encourage others to apply for a job here"). Seven items were adapted from Mowday, Steers, and Porter (1979) to assess *organizational commitment*. Three items adapted from Rosenberg (1965) assessed *self-esteem* (e.g., "I feel I have a number of good qualities"). All scales were created by averaging items with higher scores indicating more of the construct. A 5-point Likert scale was used for all items (1 = *strongly disagree* to 5 = *strongly agree*). Demographic variables measured were *gender* and *age*. Finally, *physical ability test score* was obtained from the organization's personnel records.

Results

Convergent validity. Hypothesis 1 stated that the SPJS subscales and factors would be related to a measure of overall procedural justice. Accordingly, the 11 SPJS subscales were correlated with the overall procedural justice measure, with rs ranging from .25 to .77, ps < .05. As can be seen in Table 4, the social ($r = .69, p < .01$), structural ($r = .50, p < .01$), and job-relatedness content ($r = .39, p < .01$) higher-order factors were all correlated with procedural justice. Therefore, the SPJS showed convergent validity and Hypothesis 1 was supported.

We then regressed the procedural justice measure onto the three SPJS higher-order factors. The equation was significant, $R^2 = .53$, $F = 25.07, p < .01$. Further, the job-relatedness content ($\beta = .22$, $p < .05$) and social ($\beta = .62, p < .01$) higher-order factors were significantly related to procedural justice.

TABLE 4

*Phase Four: Initial Convergent and Divergent Validity Information
Correlations Between SPJS Factors and Validation Variables*

Validation variables	Social factor	Structural factor	job-relatedness content
Overall procedural justice	.69*	.50*	.39*
Gender	.10	.10	−.05
Age	−.02	.07	.02
Physical ability overall score	.01	.08	.04
Distributive justice	.47*	.41*	.38*
Organizational commitment	.56*	.38*	.04
Organizational attractiveness	.46*	.50*	.32*
Recommendation intentions	.54*	.38*	.15
Self-esteem	.43*	.37*	.14

*$p < .01$

Divergent validity. Hypothesis 2 stated that the SPJS subscales and higher-order factors would not be related to measures such as age, gender, and test score. Accordingly, none of the 11 SPJS subscales were correlated with age, gender, or test score, all $rs < .19$, ns. Moreover, as can be seen in Table 4, none of the SPJS higher-order factors were correlated with these variables, all $rs < .11$, ns. Therefore, in support of Hypothesis 2, the SPJS showed the expected divergent validity.

Relationships with other variables in the nomological net. Hypothesis 3 stated that the SPJS subscales and higher-order factors would be related to organizational and individual outcomes (organizational attractiveness, organizational commitment, recommendation intentions, and self-esteem) and a measure of distributive justice. Accordingly, all 11 SPJS subscales were significantly ($p < .05$) correlated with organizational attractiveness (rs ranging from .24 – .49); 8 SPJS subscales were correlated with organizational commitment (rs ranging from .04 – .50); 8 SPJS subscales were correlated with recommendation intentions (rs ranging from .15 – .52); 7 SPJS subscales were correlated with self-esteem (rs ranging from .14 – .39); and 9 SPJS subscales were correlated with distributive justice (rs ranging from .15 – .52). As can be seen in Table 4, all three higher-order SPJS factors were related to organizational attractiveness and distributive justice, and the social and structural higher-order factors were related to organizational commitment, recommendation intentions, and self-esteem. Therefore, most of the SPJS subscales were related to the theoretically predicted outcomes, and Hypothesis 3 was generally supported.

We next regressed the distributive justice measure onto the three SPJS higher-order factors. The equation was significant, $R^2 = .30$, $F = 9.19$, $p < .01$. Specifically, the job-relatedness content ($\beta = .25$, $p < .05$) and social ($\beta = .38$, $p < .01$) higher-order factors were signifi-

cant. We also regressed each of the four individual and organizational outcomes onto the three SPJS higher-order factors. The equations were significant for all four outcomes. Specifically, for organizational attractiveness ($R^2 = .30$, $F = 9.50$, $p < .01$), the social ($\beta = .27$, $p < .05$) and structural ($\beta = .30$, $p < .05$) higher-order factors were significant. For organizational commitment ($R^2 = .35$, $F = 11.91$, $p < .01$), the social ($\beta = .49$, $p < .01$) higher-order factor was significant. For recommendation intentions ($R^2 = .30$, $F = 9.46$, $p < .01$), the social ($\beta = .47$, $p < .01$) higher-order factor was significant. And for self-esteem ($R^2 = .21$, $F = 5.81$, $p < .01$), the social ($\beta = .32$, $p < .05$) higher-order factor was significant. These analyses further indicate that the use of the SPJS higher-order factors may predict important outcomes suggested by theory and research.

Phase Five: Replication and Generalizability

The purpose of Phase Five was to replicate our previous findings, to examine the generalizability of our findings to additional groups including those individuals who "fail" and those who "pass" a given selection hurdle, and to test relationships while controlling for passing or failing a selection hurdle. To do this, we first surveyed 201 college students (Sample 1) who were employed or currently seeking employment. For Sample 2 we surveyed 232 students who were also employed or seeking employment. Students were considered appropriate to study for three reasons. First, a student sample is representative of the types of individuals targeted by many companies in their recruiting efforts (Rynes & Boudreau, 1986). Second, these participants were nontraditional students who had experienced a wide variety of selection procedures, giving them adequate knowledge to answer the questions regarding fairness reactions (Ryan & Greguras, 1998). Third, the use of a student sample allowed us to isolate the effect of immediate and specific outcome feedback which is difficult to do in a field setting. As Ryan and Ployhart (2000) note, the nature of applicant fairness perceptions research lends itself to couplings of both field and student samples to advance our knowledge of reactions.

Sample One

This sample was 55.7% male, had an average age of 25 years, and was primarily White (69.7%). Of the 201 students included in the sample, 74.4% were currently employed, worked an average of 24.9 ($SD = 13.3$) hours per week and had held their current job for an average of 21

months (SD = 28). Nearly all of the participants (91.5%) indicated that they were offered a job following the referent interview.

Procedure

Students were approached in junior and senior-level business and psychology classes and asked to volunteer as participants in a study about their most recent job search experience that involved an employment interview. Participants were first asked to recall and describe their most recent job search interview experience. Following this, they were asked to respond to a series of questions about what happened, their reactions, and the outcome of their employment application. Those participants who were subsequently hired (91.5%) during their most recent job search were then asked a series of questions about their work.

Measures

We asked participants a series of questions about which selection activities they had encountered for their most recent job search experience. This list included the following: filling out an application blank, work history form (i.e., a description of specific work experiences), letters of reference, drug tests, written tests, physical ability tests (i.e., lifting, running, etc.), medical examinations, background checks, interviews, work samples (i.e., performing a portion of the job), psychiatric evaluations, or an "other" category. They were also asked to describe the job to which they had applied and the *outcome of their job search* (scored 1 for *offered a job* and 0 for *not offered a job*). The 39 items of the SPJS, the two *distributive justice* items, and the three *overall procedural justice* items were also included for all respondents to complete in reference to the most recent interview they had. The 91.5% of the sample who were hired as a result of their last job search experience were asked to respond to several additional questions which included *organizational attractiveness* and *recommendation intentions* (the other 8.5% were asked to leave this section blank). Due to concerns about potential common method variance and response bias, we included two potential control variables which were completed by all respondents. First, *negative affectivity* was assessed with 10 items from Watson, Clark, and Tellegen (1988). Second, *social desirability* was assessed using the 18 positively worded items from Crowne and Marlowe's (1960) scale.

Results

Table 5 contains descriptive statistics and correlations. The measures showed adequate variance and reliability.

TABLE 5

Phase Five, Sample One: Replication and Generalizability Means, Standard Deviations, Correlations, and Scale Alphas

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender	.60	.52													
2. Age	25.28	6.04	.07												
3. Social desirability	.58	.20	-.13	-.07	(.74)										
4. Negative affectivity	2.52	.73	.13	-.19**	-.15*	(.88)									
5. Job offered	.97	.28	.00	-.19**	-.05	.08									
6. Time since interview	19.68	25.89	.09	.32**	.00	-.16*	.01								
7. Social higher-order factor	4.02	.54	.01	-.14	.22**	.01	.12	-.07	(.92)						
8. Structure higher-order factor	2.98	.65	-.06	-.14	.33**	.11	.09	-.06	.43**	(.88)					
9. Job-relatedness-content	4.13	.89	.06	.00	.19*	.04	.03	.04	.41**	.33**	(.87)				
10. Overall procedural justice	3.98	.79	.04	-.11	.28**	-.03	.08	-.08	.67**	.44**	.43**	(.90)			
11. Distributive justice	3.85	.76	-.01	-.13	.12	-.07	.13	-.04	.52**	.36**	.29**	.69**	(.72)		
12. Organizational attractiveness	3.48	.95	-.12	-.06	.23**	-.02	-.03	.01	.51**	.39**	.27**	.33**	.29**	(.87)	
13. Recommendation intentions	3.43	1.19	-.03	-.11	.25**	.03	.04	-.12	.55**	.41**	.30**	.45**	.38**	.79**	(.97)

Notes: $n = 201$. Time since last interview is in months. Gender is coded *men* = 1 and *women* = 0; job offer made = 1. Numbers in parentheses along the diagonal represent coefficient alphas.
offer made = 1. Numbers in parentheses along the diagonal represent coefficient alphas.
*p < .05   **p < .01

Another CFA was performed with the 39-item SPJS for this new sample. Results were similar to the CFA completed in Phase Three. The CFI (.92) and RMSR (.05) indicated that the model was a good fit to the data. All of the lambdas (factor loadings) were statistically significant and ranged from .58 to .95, and there were no large modification indices for either lambdas or phis (interfactor correlations).

Further, a single indicator confirmatory factor analysis was run using the same methodology as in Phase Three, and the chi-square for the hypothesized model was not significant (chi square = 22.94, df = 19), indicating a good fit of the model to the data. Further, other fit indices indicated a good fit of the data to the model (GFI = .98, AGFI = .92, CFI = .99, RMSR = .02). Thus, the results seem to indicate that the data fit the hypothesized model reasonably well and that the factor structure was replicated in this new sample.

At the bivariate level, all 11 SPJS subscales showed a significant correlation with the overall procedural justice measure ($rs > .27, p < .01$), distributive justice ($rs > 20, p < .01$), recommendation intentions ($rs > .20, p < .01$), and organizational attractiveness ($rs > .18, p < .01$). To provide a more conservative multivariate test of the relationship between the SPJS and the outcomes, we controlled for six other potentially important explanatory variables: age, gender, social desirability, negative affectivity, whether or not the participant received a job offer after the interview, and the length of time between the interview and completion of the research survey. For each of the dependent variables, the control variables were entered into a regression in the first step followed by the three SPJS higher-order factors (see Table 6).

The regressions indicated that the SPJS was related to several of Gilliland's (1993) proposed outcomes. The social ($\beta = .50, p < .001$), structural ($\beta = .15, p < .05$), and job-relatedness content ($\beta = .17, p < .01$) higher-order factors were significantly related to overall procedural fairness. For distributive justice, the social ($\beta = .41, p < .001$) and structural ($\beta = .18, p < .05$) higher-order factors were significantly related to distributive justice and the job-relatedness content factor was not. For organizational attractiveness, the social ($\beta = .42, p < .001$) and structural ($\beta = .18, p < .05$) higher-order factors were significantly related and the job-relatedness content subscale was not. For recommendation intentions, the social ($\beta = .44, p < .001$) and structural ($\beta = .16, p < .05$) higher-order factors were significant and the job-relatedness content factor was not. None of the six control variables were significantly related to the outcomes in the final equations.

TABLE 6

Phase Five, Sample One: Replication and Generalizability Hierarchical Regressions for Overall Procedural Justice, Distributive Justice, Organizational Attractiveness, and Recommendation Intentions

	β	R^2	ΔR^2	F
Overall procedural justice				
Step 1: Control variables		.12		3.42**
Age	.00			
Gender	.04			
Social desirability	.09			
Negative affectivity	−.09			
Job offered	.01			
Time since interview	−.08			
Step 2: Higher-order factor subscales		.53	.41	44.93**
Social	.50***			
Structural	.15*			
job-relatedness content	.17**			
Overall model:				19.18 **
Distributive justice				
Step 1: Control variables		.06		1.52
Age	−.09			
Gender	−.01			
Social desirability	−.07			
Negative affectivity	−.14			
Job offered	.05			
Time since interview	.01			
Step 2: Higher-order factor subscales		.33	.27	20.47***
Social	.41***			
Structural	.18*			
job-relatedness content	.07			
Overall model:				8.22***

Sample Two

This sample was 53.4% female, had an average age of 25 years, and was primarily White (65.4%). Of the 232 students included in the sample, 76.2% were currently employed, and worked an average of 25 hours per week.

Procedure

Students were approached in junior and senior-level business classes and asked to volunteer as participants in a selection simulation study. Each participant was given a packet containing a series of three questionnaires, a written cognitive ability test, a description of the scenario, and a packet number. All study materials were coordinated by packet number. Participants were asked to imagine themselves as job seekers

TABLE 6, continued

	β	R^2	ΔR^2	F
Organizational attractiveness				
Step 1: Control variables		.07		1.88
Age	−.03			
Gender	−.11			
Social desirability	.05			
Negative affectivity	−.01			
Job offered	−.11			
Time since interview	.07			
Step 2: Higher-order factor subscales		.32	.25	18.99***
Social	.42***			
Structural	.18*			
job-relatedness content	.02			
Overall model:				8.02***
Recommendation intentions				
Step 1: Control variables		.09		2.70*
Age	.00			
Gender	−.01			
Social desirability	.10			
Negative affectivity	.01			
Job offered	−.03			
Time since interview	−.08			
Step 2: Higher-order factor subscales		.36	.27	20.73***
Social	.44***			
Structural	.16*			
job-relatedness content	.03			
Overall model:				9.39***

Notes: n = 191. Gender is coded *men* = 1 and *women* = 0; job offered is coded *no job offer made* = 0; *job offer made* = 1. Standardized betas are for the final models.
*$p < .05$ **$p < .01$ ***$p < .001$

for an attractive job with a fictitious organization and were asked to read a description of this company, a job opening within this company, and the procedures for passing the first selection hurdle for this job. Our purpose in this manipulation was to describe a job that would be attractive to a large number of college applicants in terms of pay, location, opportunities for advancement and environmental policies. These factors were chosen based on prior research on college recruitment (Bauer & Aiman-Smith, 1996; Highhouse, Stierwalt, Bachiochi, Elder, & Fisher, 1999; Turban & Greening, 1996). The exact wording of this information follows below:

"Please think of yourself as a job seeker applying for a job with X Corporation. This company is offering a yearly salary 20% higher than other companies in your industry as well as generous stock options. This company is located in a town you like. In talking with people hired in the last 5 years, you have discovered that employees have received an average of three promotions in that time. The company also has been rated as a

leader in the industry in terms of proactive environmental policies and was rated as one of the top 100 places to work by *US News & World Reports*.

Today you will be taking an initial screening test to see if you will be further considered by X Corporation for a position within their company. Your performance on this written test is important—*if you do not pass the test, you will not be considered for this attractive position*. If you do well on the test, you have a good chance of being hired. You will also be filling out three questionnaires today. Thank you for your participation!"

Next, participants were asked to respond to a series of questions regarding this company. After all participants had completed this survey, they completed a timed Wonderlic Personnel Test (WPT; Wonderlic, 1999). The Wonderlic is a commonly used, 50-item, 12 minute test of cognitive ability that has been found to be valid in predicting performance for a wide variety of jobs (Wonderlic, 1999). Following the WPT, participants completed a questionnaire which assessed demographics. At the same time, a team of researchers graded the Wonderlic forms outside of the room. Based on their actual Wonderlic scores, participants were given one of the following feedback letters:

"Congratulations! You have passed this selection test. We will be contacting you soon to set up an interview. Thank you for taking the test for this position with X Corporation."

or

"We regret to inform you that you have not passed this selection test. We will not be contacting you for an interview. Thank you for taking the test for this position with X Corporation."

Following the receipt of this pass/fail feedback, participants reacted to the selection test and feedback they had been given. Following this written feedback participants completed their final questionnaires, turned in their packets, and received a debriefing form.

Measures

On the first survey, participants responded to a series of items assessing their attitudes about the organization including organizational attractiveness, recommendation intentions, how much they wanted to be hired for this job, their general self-esteem, and their test-taking self-efficacy. The second survey asked participants to respond to a variety of demographic variables. In addition, participants responded to scales measuring negative affectivity and social desirability. The postfeedback survey included items tapping the same attitudinal constructs measured in the first survey. In addition, the postfeedback survey included a 4-item *litigation likelihood* scale (Seitz, Truxillo, & Bauer, 2001, a sam-

ple item is "An organization that uses a test like this would likely be sued by applicants."), the 39-item SPJS, the 2-item overall *distributive justice* scale, and the 3-item *overall procedural justice* scale.

Participants had 12 minutes to complete the 50 WPT test items. *Outcome favorability* was determined using an additional sample ($n = 107$) of university students who took the WPT. The mean was 21.46 and the median was 21. Because we intended to fail approximately half of the participants, the median of 21 was used as the cutoff score. Participants were scored "1" for *passing* if they received a score of 21 or higher (positive outcome favorability) and "0" for *failing* if they received a score of 20 or lower (negative outcome favorability).

Results

Factor Structure

Table 7 contains descriptive statistics and correlations. The main purpose of collecting this additional data collection was to establish the factor structure of the SPJS for a group of "failers" in a selection context, as the earlier results were generally based on individuals who had "passed" various selection hurdles. A CFA was performed with the 39-item SPJS for the student sample of "failers" ($n = 95$). Results were similar to the earlier CFA results for "passers." The CFI (.85) and RMSR (.09) indicated that the model was a good fit to the data. All of the lambdas (factor loadings) were statistically significant and there were no large modification indices for either lambdas or phi coefficients.

Again, a single indicator confirmatory factor analysis indicated a good fit of the model to the data with GFI = .95, CFI = .98, RMSR = .02. Thus, the results seem to indicate that the data fit the hypothesized model reasonably well, and the factor structure was replicated in this new sample.

Regression Analyses

Further, hierarchical regression analyses were conducted to examine the relationship between the three higher-order procedural justice factors and the five outcome variables after controlling for age, gender, social desirability, negative affectivity, and outcome favorability (i.e., passing or failing the written selection test; see Table 8). The results indicated that outcome favorability and each of the three higher-order factors were significantly related to procedural justice change in $R^2 = .49$, $F(3, 222) = 85.06, p < .001$) and distributive justice change in $R^2 = .31$, $F(3, 222) = 36.10, p < .001$). Of the three higher-order factors, job-

TABLE 7

Phase Five, Sample Two: Replication and Generalizability Means, Standard Deviations, Correlations, and Scale Alphas

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender	.47	.50													
2. Age	24.99	6.54	.07												
3. Social desirability	9.65	3.46	-.04	.05	(.73)										
4. Negative affectivity	1.57	.58	-.02	-.10	-.08	(.84)									
5. Outcome favorability	.97	.28	.00	.12	-.19**	-.19**									
6. Social higher-order factor	3.76	.64	.00	-.05	.07	-.29**	.23**	(.93)							
7. Structure higher-order factor	2.54	.64	.04	-.02	.13	-.07	.09	.43**	(.88)						
8. Job-relatedness-content	1.99	.92	.08	-.07	.11	-.04	-.01	.23**	.64**	(.89)					
9. Overall procedural justice	2.63	1.02	.16*	.03	-.03	-.05	.22**	.41**	.62**	.65**	(.87)				
10. Distributive justice	2.88	1.07	.05	.01	-.02	-.02	.23**	.39**	.48**	.47**	.73**	(.83)			
11. Organizational attractiveness	3.99	.84	-.09	-.01	.00	-.09	.38**	.32**	.14*	-.02	.20**	.19**	(.92)		
12. Recommendation intentions	3.61	.95	-.03	-.01	.03	-.04	.28**	.28**	.24**	.14*	.28**	.26**	.78**	(.93)	
13. Litigation likelihood	2.75	1.02	.03	-.00	-.09	.09	-.12	-.36**	-.24**	-.21**	-.41**	-.32**	-.19**	-.15*	(.91)

Notes: $n = 232$. Gender is coded men = 1 and women = 0. Numbers in parentheses along the diagonal represent coefficient alphas.
*p < .05 **p < .01

TABLE 8

Phase Five, Sample Two: Replication and Generalizability Hierarchical Regressions for Overall Procedural Justice, Distributive Justice, Organizational Attractiveness, Recommendation Intentions, and Litigation Likelihood

	β	R^2	ΔR^2	F
Overall procedural justice				
Step 1: Control variables		.03		1.93
Age	.07			
Gender	.11			
Social desirability	−.09			
Negative affectivity	.07			
Step 2: Outcome favorability	.14**	.08	.05	12.07**
Step 3: Higher-order factor subscales		.57	.49	85.06***
Social	.19***			
Structural	.25***			
job-relatedness content	.45***			
Overall model:				37.23***
Distributive justice				
Step 1: Control variables		.00		.29
Age	.04			
Gender	.02			
Social desirability	−.08			
Negative affectivity	.12			
Step 2: Outcome favorability	.15**	.06	.06	12.76***
Step 3: Higher-order factor subscales		.37	.31	36.10***
Social	.26***			
Structural	.17*			
job-relatedness content	.32***			
Overall model:				16.11***
Organizational attractiveness				
Step 1: Control variables		.02		.97
Age	−.04			
Gender	−.08			
Social desirability	.06			
Negative affectivity	.05			
Step 2: Outcome favorability	.34***	.16	.14	39.22***
Step 3: Higher-order factor subscales		.23	.07	6.08**
Social	.24**			
Structural	.09			
job-relatedness content	−.13			
Overall model:				8.12***

relatedness-content had the highest beta-weight in relation to both procedural justice ($\beta = .45$, $p < .001$) and distributive justice ($\beta = .32$, $p < .001$).

Outcome favorability was related to all of the outcomes examined with the exception of litigation likelihood. In addition, as a set, the three higher-order SPJS factors were significantly related to organiza-

TABLE 8, continued

	β	R^2	ΔR^2	F
Recommendation intentions				
Step 1: Control variables		.00		.19
Age	−.01			
Gender	−.04			
Social desirability	.04			
Negative affectivity	.07			
Step 3: Outcome favorability	.24***	.09	.09	20.54***
Step 2: Higher-order factor subscales		.15	.06	5.82**
Social	.18*			
Structural	.13*			
job-relatedness content	.03			
Overall model:				5.02***
Litigation likelihood				
Step 1: Control variables		.02		.90
Age	−.03			
Gender	.04			
Social desirability	−.06			
Negative affectivity	−.04			
Step 2: Outcome favorability	−.05	.03	.01	3.68
Step 3: Higher-order factor subscales		.16	.13	11.38***
Social	−.31***			
Structural	−.03			
job-relatedness content	−.13			
Overall model:				5.23***

Notes: n = 232. Gender is coded *men* = 1 and *women* = 0; Outcome favorability is coded 1 = *pass* and 0 = *fail*. Standardized betas are for the final model.
*$p < .05$ **$p < .01$ ***$p < .001$

tional attractiveness, recommendation intentions, and litigation likelihood. There were, however, differential relationships between the higher-order factors and these outcome variables. Specifically, both the social (β = .18, $p < .05$) and the structural (β = .13, $p < .05$) factors were related to recommendation intentions. However, only the social higher-order factor was significantly related to organizational attractiveness (β = .24, $p < .01$) and litigation likelihood (β = −.31, $p < .001$) after the control variables were entered. These results are consistent with past research that shows that outcome favorability matters to applicants (e.g., Bauer et al., 1998; Chan, Schmitt, Sacco, & DeShon, 1998; Ryan, Sacco, McFarland & Kriska, 2000). But it did not offset the influence of the higher-order factors of the SPJS on the outcomes studied here.

Another set of hierarchical regression analyses was performed to test possible interaction effects of the three higher-order SPJS factors and perceptions of distributive justice on organizational attractiveness, recommendation intentions, and litigation likelihood. Age, gender, social

desirability, and negative affectivity were entered as control variables in Step 1. Outcome favorability was entered in Step 2. One higher-order factor and distributive justice were entered in Step 3. Finally, the interaction term between the higher-order factor and distributive justice was entered in Step 4. The only significant result was the job-relatedness content by distributive justice interaction and organizational attractiveness change in $R^2 = .02$, $F(1, 222) = 6.11$, $p < .05$). The results indicated that perceptions of distributive justice had a larger effect on organizational attractiveness when job-relatedness content was high than when job-relatedness content was low. Specifically, organizational attractiveness was lowest for those who reported high job-relatedness content and low distributive justice. Organizational attractiveness was highest for those who reported high job-relatedness content and high distributive justice.

Discussion

This study fills a void in the literature by developing a set of comprehensive subscales to measure Gilliland's (1993) hypothesized components of procedural justice. Following established psychometric procedures for scale development (Hinkin, 1998), five separate phases of research were conducted. Phase One involved item generation and development. Phase Two involved initial item reduction through exploratory factor analysis of data collected from actual job applicants for a court officer job during their selection process. Phase Three used a separate sample of actual job applicants during their selection process and trainees for a court officer job to confirm the factor structure. Phase Four provided preliminary convergent and divergent validity evidence for the subscales using trainees for the job of court officer. Phase Five used two diverse samples of students to replicate earlier findings and to examine the generalizability to a variety of jobs and related the scale to outcomes described by Gilliland's (1993) model. Results of the five phases showed that there were 11 procedural justice factors. In addition, we found that a 3-factor higher-order factor model using the 39 SPJS items was the most parsimonious and psychometrically sound representation of the procedural justice rules. These 39 items demonstrated content validity (Phase One), consistent factor structures (both exploratory and confirmatory; Phases Two, Three, Four, and Five), reliabilities above the recommended level for new scales (Phases Two, Three, Four, and Five), convergent and divergent validity (Phases Four and Five, Samples 1 and 2), and the role of outcome favorability on fairness reactions (Phase Five, Sample 2). Therefore, this study shows empirical evidence of the usefulness of the SPJS for differentiating each of

Gilliland's procedural justice rules and for relating to potentially relevant outcomes for those who pass as well as fail to pass selection hurdles.

The development of the SPJS has implications for both theory and practice. First, the SPJS will allow for greater testing and use of Gilliland's (1993) model of selection system fairness. Although the model has shown promise in past research (e.g., Bauer et al., 1998; Gilliland, 1994; Steiner & Gilliland, 1996; Truxillo & Bauer, 1999), having no direct measures of the justice rules from this model has limited its full application (Ryan & Ployhart, 2000).

Second, the SPJS can be used by organizations to determine the influence of their selection process (and other alternatives) on the perceived fairness of the selection process. Conversely, organizations may use the SPJS to evaluate their current selection systems to uncover potential problems.

Third, the present research suggests that, although not perfectly consistent with theory, a 3-factor higher-order factor or an 11-factor solution may best describe the procedural justice rules as opposed to the 10 described in Gilliland's (1993) model. Our study illustrates the need for general justice theories to be examined within specific organizational contexts (e.g., selection). For example, we found that job-relatedness content did not load onto the social or structure factor for the samples studied here but rather was its own factor. Future research is needed to further examine if this finding was context specific to our samples or is able to be generalized to other settings.

The SPJS also permits individuals to scrutinize the different facets of "perceived fairness" for a given selection procedure rather than relying on global assessments of fairness which make pinpointing areas for improvement impossible. Different selection procedures are probably not perceived simply as "fair" or "unfair" by applicants, but rather as fair in some ways but not in others. The SPJS allows for these finer grained fairness distinctions to emerge.

Areas for future research might include: (a) the effects of procedural justice rules on additional outcomes such as actual legal action or retalitory behaviors (e.g., Skarlicki & Folger, 1997), test taking motivation (e.g., Sanchez, Truxillo, & Bauer, 2000), or test validity; (b) potential individual difference moderators (e.g., race, personality) as predicted by Gilliland's (1993) model; and (c) the malleability of justice perceptions and the level of control organizations have over fairness perceptions by manipulating specific elements of the selection system.

Further, other questions exist, such as what happens if applicants are given greater information about job-relatedness? Would this increase or decrease the impact of job-relatedness on intentions toward the organization and organizational attractiveness? In the current study, trainees

and students rated the selection process after it was completed. Although this is useful information, future research which includes data collected on outcomes at different stages during the selection process itself could prove useful in further understanding applicant reactions to selection (Chan et al., 1998; Ployhart & Ryan, 1998).

This study has potential limitations which should be noted. First, one organization was used for the development portion of this measure. However, Phase Five did include students who had applied for a variety of jobs thus enhancing the generalizability of the findings. Second, larger sample sizes than those used in this research may have led to more results that were statistically significant due to increased power. We encourage additional research on the SPJS to confirm these results using larger samples when possible. Third, common method variance may have been a potential problem in this research. However, the SPJS showed divergent validity in both Phases Four and Five and also related to outcomes suggested by Gilliland's (1993) model after controlling for social desirability, negative affectivity, and demographics in Phase Five. This suggests that common method variance alone does not explain the relationships.

The present research has provided a potentially useful instrument for testing Gilliland's (1993) model and for assessing particular dimensions of selection system fairness in field settings. Future research on applicant reactions to selection should be enhanced by this systematic development of a context specific measure designed to tap Gilliland's (1993) fairness dimensions.

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Appendix

Final Items for the Selection Procedural Justice Scale (SPJS)

Strongly disagree = 1, *Disagree* = 2, *Neither agree nor disagree* = 3, *Agree* = 4, *Strongly agree* = 5

Structure Higher-Order Factor Subscales

Job-relatedness—Predictive
> Doing well on this test means a person can do the [*insert job title*] job well.
> A person who scored well on this test will be a good [*insert job title*].

Information Known
> I understood in advance what the testing processes would be like.
> I knew what to expect on the test.
> I had ample information about what the format of the test would be.

Chance to Perform
> I could really show my skills and abilities through this test.
> This test allowed me to show what my job skills are.
> This test gives applicants the opportunity to show what they can really do.
> I was able to show what I can do on this test.

Reconsideration Opportunity
> I was given ample opportunity to have my test results rechecked, if necessary.
> There was a chance to discuss my test results with someone.
> I feel satisfied with the process for reviewing my test results.
> Applicants were able to have their test results reviewed if they wanted.
> The opportunities for reviewing my test results were adequate.

Feedback
> I had a clear understanding of when I would get my test results.
> I knew when I would receive feedback about my test results.
> I was satisfied with the amount of time it took to get feedback on my test results.

Social Higher-Order Factor Subscales

Consistency
> The test was administered to all applicants in the same way.

There were no differences in the way the test was administered to different applicants.

Test administrators made no distinction in how they treated applicants.

Openness

I was treated honestly and openly during the testing process.

Test administrators were candid when answering questions during the tests.

Test administrators answered procedural questions in a straightforward and sincere manner.

Test administrators did not try to hide anything from me during the testing process.

Treatment

I was treated politely during the testing process.

The test administrators were considerate during the test.

The test administrators treated applicants with respect during today's testing process.

The testing staff put me at ease when I took the test.

I was satisfied with my treatment at the test site.

Two-way Communication

There was enough communication during the testing process.

I was able to ask questions about the test.

I am satisfied with the communication that occurred during the testing process.

I would have felt comfortable asking questions about the test if I had any.

I was comfortable with the idea of expressing my concerns at the test site.

Propriety of Questions

The content of the test did not appear to be prejudiced.

The test itself did not seem too personal or private.

The content of the test seemed appropriate.

Plus

Job-relatedness Content

It would be clear to anyone that this test is related to the [*insert job title*] job.

The content of the test was clearly related to the [*insert job title*] job.

Note: Italics indicate phrases that may be changed to fit the research setting. In addition, the word "test" could be replaced with other selection devices or with a global term such as "the selection process" as appropriate.