

An Examination of the Relationships among the Justice Facets, Overall Justice, Strain,
and Intent to Turnover in a Military Context

by

Cindy D. Suurd

A Thesis Submitted to
Saint Mary's University, Halifax, Nova Scotia
in Partial fulfillment of the Requirements for
the Degree of Master of Science in Applied Psychology
(Industrial/Organizational)

September 15, 2008, Halifax, Nova Scotia

© Cindy D. Suurd, 2008

Approved:

Camilla Holmvall, PhD
Supervisor

Approved:

Lori Francis, PhD
Committee Member

Approved:

E. Kevin Kelloway, PhD
Committee Member

Approved:

Damian O'Keefe, PhD
External Examiner

Date:

September 15, 2008



Library and
Archives Canada

Bibliothèque et
Archives Canada

Published Heritage
Branch

Direction du
Patrimoine de l'édition

395 Wellington Street
Ottawa ON K1A 0N4
Canada

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence
ISBN: 978-0-494-44665-2
Our file Notre référence
ISBN: 978-0-494-44665-2

NOTICE:

The author has granted a non-exclusive license allowing Library and Archives Canada to reproduce, publish, archive, preserve, conserve, communicate to the public by telecommunication or on the Internet, loan, distribute and sell theses worldwide, for commercial or non-commercial purposes, in microform, paper, electronic and/or any other formats.

The author retains copyright ownership and moral rights in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

AVIS:

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque et Archives Canada de reproduire, publier, archiver, sauvegarder, conserver, transmettre au public par télécommunication ou par l'Internet, prêter, distribuer et vendre des thèses partout dans le monde, à des fins commerciales ou autres, sur support microforme, papier, électronique et/ou autres formats.

L'auteur conserve la propriété du droit d'auteur et des droits moraux qui protègent cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

In compliance with the Canadian Privacy Act some supporting forms may have been removed from this thesis.

Conformément à la loi canadienne sur la protection de la vie privée, quelques formulaires secondaires ont été enlevés de cette thèse.

While these forms may be included in the document page count, their removal does not represent any loss of content from the thesis.

Bien que ces formulaires aient inclus dans la pagination, il n'y aura aucun contenu manquant.

Table of Contents

List of Tables	4
List of Figures	5
Acknowledgments.....	6
Abstract	7
Introduction.....	8
The Structure of Justice Evaluations	10
Interpersonal Justice from Coworkers.....	12
Hypothesis 1	13
Overall Justice	13
Hypothesis 2	16
Justice Facets as Antecedents to Overall Justice.....	16
Hypothesis 3	18
The Link Between Justice and Outcomes	19
Stress and Psychological Strain.....	19
Justice and Strain.....	20
Hypothesis 4	22
Turnover	23
Strain and Intentions to Turnover.....	24
Hypothesis 5	24
Hypothesis 6	25
Method	25
Participants	25
Procedure	26
Measures.....	27
Results.....	29
Multiple Group Analyses	29
Testing the Invariance of the Justice Measurement Model.....	30
Testing the Invariance of the Eight-Factor Measurement Model.....	34
Hypothesis Testing	35
Test of the Justice Measurement Model.....	35

Test of the Structure Model.....	39
Common Method Bias.....	42
Discussion.....	43
Implications of Findings.....	47
Theoretical Implications.....	47
Practical Implications.....	48
Limitations.....	50
Future Research.....	53
Conclusion.....	54
References.....	55
Appendix A.....	68
Footnotes.....	71
Tables.....	74
Figure Captions.....	85
Figures.....	87

List of Tables

Table 1. Fit Indices for the Competing Measurement Models - Unit 1

Table 2. Fit Indices for the Competing Measurement Models - Unit 2

Table 3. Descriptive Statistics for the Justice Facet, Co-worker Justice, Overall Justice, Strain and Intentions to Turnover Scales - Unit 1

Table 4. Descriptive Statistics for the Justice Facet, Co-worker Justice, Overall Justice, Strain and Intentions to Turnover Scales - Unit 2

Table 5. Fit Indices for Invariance Testing Between Unit 1 and Unit 2

Table 6. Fit Indices for the Competing Measurement Models – Combined Sample

Table 7. Descriptive Statistics for the Justice Facet, Co-worker Justice, Overall Justice, Strain and Intentions to Turnover Scales – Combined Sample

Table 8. Item Parcel Composition

Table 9. Fit Indices for the Competing Path Models

Table 10. Comparison of Paths in the Presence versus Absence of the Common Method Factor

List of Figures

Figure 1. Proposed model of Justice, Strain, and Intentions to Turnover

Figure 2. Unit 1 six-component measurement model

Figure 3. Unit 2 six-component measurement model

Figure 4. Unit 1 eight-component measurement model

Figure 5. Unit 2 eight-component measurement model

Figure 6. Combined sample six-component measurement model

Figure 7. Combined sample eight-component measurement model

Figure 8. Fully mediated path model

Figure 9. Partially mediated path model (11 additional paths)

Figure 10. Partially mediated path model (1 additional path)

Figure 11. Partially mediated path model with common method factor

Acknowledgments

I would like to sincerely thank my supervisor Camilla Holmvall for her tireless effort and attention throughout this study. In addition, my committee members, Kevin Kelloway and Lori Francis provided excellent ideas and asked vital questions that improved the quality of this research. Major Dave Scholtz, Captain Gary Ivey and Maxime Tremblay also assisted greatly in the administration and organization of the Unit Morale Profile. Finally, the diagrams would not have been possible without the efforts of Jeff Praught.

The opinions expressed in this document are those of the author and should not be interpreted as the official position of the Canadian Forces, nor of the Department of National Defence.

An Examination of the Relationships among the Justice Facets, Overall Justice, Strain,
and Intent to Turnover in a Military Context

Cindy D. Suurd

September 15, 2008

Abstract

A paucity of research exists on sources of organizational justice outside of supervisors and the organization itself. In addition, only recently have researchers begun to examine the construct of overall justice, despite its centrality in previous justice theory (e.g., Fairness Heuristic Theory; Lind, 2001). To address these shortfalls, I conducted a cross-sectional correlational study using a military sample to examine how the traditional justice facets (i.e., distributive justice, procedural justice, informational justice, and interpersonal justice), co-worker interpersonal justice, and overall justice perceptions relate to strain and intentions to turnover. Based on past research, I expected that a six-factor model of justice would best represent the data. I further proposed a path model in which overall justice would mediate the relationship between the justice facets and strain, and strain would mediate the relationship between overall justice and intentions to turnover. Structural Equation Modeling analyses provided support for my hypotheses. The results of this study suggest that justice evaluations from different sources (coworkers, supervisors and organizations) and at different levels (sub facets and overall justice) are related to strain and intentions to turnover. Limitations and implications of this research are discussed.

An Examination of the Relationships among the Justice Facets, Overall Justice, Strain, and Intent to Turnover in a Military Context

A plenitude of research suggests that perceived injustice in the workplace is associated with undesirable behavioural outcomes including theft (Greenberg, 1990) other counterproductive work behaviours (Fox, Spector, & Miles, 2001), decreased work performance (Pfeffer & Langton, 1994), increased withdrawal behaviour (Hulin, 1991) and turnover (Dailey & Kirk, 1992). In addition, evidence suggests that injustice is linked to negative attitudinal responses such as reduced organizational commitment (Alexander, Sinclair, & Tetrick, 1995) and lessened trust in the organization (Konovsky & Pugh, 1994). Recently, research has explored the impact of organizational justice on employee health and has found injustice to be related to psychological strain and depression (Francis & Barling, 2005; Tepper, 2001).

Traditionally, organizational justice research has encompassed three different facets of justice: distributive, procedural, and interactional (Cropanzano, Byrne, Bobocel, & Rupp, 2001). Distributive justice refers to the perceived fairness of outcomes allocations (Greenberg, 1987). Adams' (1965) equity theory suggests that individuals look to relevant others to evaluate the fairness of their own outcomes. Perceptions of fairness exist when one's own input/outcome ratio is similar to that of comparison others. Procedural justice refers to the perceived fairness of the procedures used to allocate outcomes or make decisions in organizations (Leventhal, 1980). Procedures are perceived as fair when, for example, accurate information is incorporated into decision-making and personal biases of leaders are suppressed (Cropanzano & Greenberg, 1997; Leventhal, 1980). Interactional justice is defined as the perceived fairness of the interpersonal

treatment an individual receives (Bies & Moag, 1986), most typically from his or her supervisor. Greenberg (1993; see also Colquitt, 2001) suggested the further subdivision of interactional justice into two separate categories: interpersonal justice and informational justice. Interpersonal justice reflects an assessment of the degree of respect and sincerity in interpersonal interactions (Bies & Moag, 1986). Informational justice refers to the adequacy and honesty of the explanations provided in the workplace (Greenberg, 1993).

Recent advances in the justice literature have suggested expanding sources of justice beyond the supervisor and the organization. For example, researchers (see Holmvall & Sidhu, 2007; Rupp & Spencer, 2006) have examined customers as a potential source for interactional justice evaluations. Similarly, coworkers may contribute to justice evaluations because they play a prominent role in individuals' work groups. Accordingly, some work has begun to explore coworkers as a source of justice evaluations (see Branscombe, Spears, Ellemers & Dooje, 2002; Donovan, Drasgow & Munson, 1998; Lavelle, Rupp, & Brockner, 2007).

When considering the different facets of organizational justice noted above, researchers are often focused on the unique contribution of each aspect of justice to the prediction of organizational outcomes (Ambrose & Arnaud, 2005). However, recent work in the justice literature has introduced researchers to the concept of overall justice. For example, Lind (2001) asserted that, while individuals can distinguish between different types of injustice experiences; it may be their overall experience of justice that drives their behaviour. Similarly, Ambrose and Schminke (2003) highlighted that the focus on differences between justice constructs may overshadow their similarities. Arguably,

victims of injustice are unlikely to concern themselves with the number or types of injustice they encounter; rather they might react to their overall experience (Ambrose & Schminke, 2006). Thus, recently researchers have suggested a shift in focus to the consideration of overall fairness judgements in addition to the sub facets of justice (Hauenstein, McGonigle, & Flinder, 2001).

Although the concept of overall justice has received some scant attention in the literature, justice from coworkers has practically been ignored in research studies (for exceptions see Branscombe, et al., 2002; Donovan, et al., 1998; Lavelle, et al., 2007). To address these shortfalls, I conducted a study to examine the role of the four facets of justice (Colquitt, 2001), co-worker interpersonal justice, and overall justice in the prediction of strain and intent to turnover. An examination of how justice evaluations in the workplace impact strain is important, in part considering strain's deleterious effects accrue to the organization. Similarly, intent to turnover is an important outcome in all organizations; for the Canadian Forces it is particularly relevant considering their desire to increase the size of the forces in the face of high attrition (Currie, 2005). Figure 1 depicts the proposed relationships between the justice facets, overall justice, strain and intentions to turnover, which are described in the sections that follow.

The Structure of Justice Evaluations

As noted above, the majority of the existing literature on interpersonal justice has focused on interactions between supervisors and employees (Colquitt, 2001; Greenberg, 2006). The construct of interactional justice was first proposed as an independent facet of justice (from procedural and distributive) by Bies and Moag (1986). Their initial definition embedded interactional justice in the context of decision-making, which

fostered confusion regarding the relationship between interactional and procedural justice (Bies, 2001). Not surprisingly, the bulk of research on the interpersonal justice facet has focused exclusively on the interpersonal treatment displayed during the decision-making process or during the enactment of procedures, consistent with Bies and Moag's (1986) initial definition (see Colquitt, 2001).

More recently, researchers have shown that concerns about justice go beyond the decision-making context. For example, Mikula (1986) conducted a study asking respondents to recount an experience of injustice they had experienced as victims. He found that there was a clear discrepancy between the unjust events reported by his participants (which included a broad range of interpersonal behaviours) and the situations of injustice normally examined in research, namely unfair payment and unjust distributions. In subsequent studies, Mikula, Petri and Tanzer (1990) suggested a broader conceptualization of interpersonal treatment, which would extend beyond the decision-making process or the enactment of procedures. To encompass individuals' justice experiences in the workplace, they argued that interpersonal justice should include different types and sources of interactions. Their study focused on gathering information on events individuals considered unjust and clustering them together. Similar to Mikula's (1986) findings, a considerable number of unjust events concerned neither distributions nor procedures, but rather the interpersonal treatment that occurred outside of decision-making or the enactment of procedures. Examples included breaking agreements, disregarding feelings, reproach or accusation, abusive or aggressive treatment, putting one's interests first, and unfriendly or impolite treatment (Mikula et al., 1990). Similarly, Messick, Bloom, Boldizar, and Samuelson (1985) asked participants to describe fair and

unfair behaviours that they or others enacted. Their results yielded distributive, procedural and interpersonal events. They also found that the interpersonal injustices reported were often independent of procedures and outcomes. Similarly, Bies (2001) highlighted that interactional justice concerns are not limited to exchange contexts because employees are concerned about the interpersonal treatment they receive during every day encounters in organizations.

Interpersonal Justice from Coworkers. Mikula et al. (1990) found that some types of injustice occur in almost any interpersonal relationship, but that other forms were related to power level (i.e., equal/unequal power relationships). Distributive and procedural matters emerged as more typical subjects of justice judgements in relationships with unequal power (such as between an employee and a supervisor), whereas quality of interpersonal treatment was the subject of justice judgements in both equal and unequal power relationships. In the daily work environment, employees interact with individuals in both equal and unequal power situations, suggesting that interpersonal treatment from individuals other than supervisors may influence justice judgements. In fact, employees may spend considerably more time with coworkers than with supervisors and may derive some of their evaluations of organizational justice from the relationships they have with these individuals. Indeed, Hackman (1992) suggested that individuals working in organizations may experience their immediate work group as a prominent social context.

Lavelle et al. (2007) argued that coworkers are becoming increasingly important foci in the study of justice, considering the popularity of self-managed teams. They proposed a theoretical model linking justice, social exchange, and citizenship behaviors.

Their framework suggested that individuals can evaluate how fairly they are treated by individuals they consider roughly equal (e.g., peers). Moreover, Donovan et al. (1998) developed a two-factor scale measuring interpersonal fairness between employees and their supervisors and between employees and their coworkers. Centred on how individuals in the workplace interact interpersonally, the two factors were only modestly correlated ($r = .47$), suggesting that interpersonal justice may be assessed differentially based on its source: supervisor or co-worker. Thus, based on this research, I expected that employees might evaluate interpersonal justice from two sources. Accordingly, I propose my first hypothesis:

Hypothesis 1: Individuals form separate evaluations about the interpersonal justice they receive depending on the source (e.g., from supervisors versus coworkers). Thus, two factors (supervisor, co-worker) will best represent interpersonal justice judgments.

Overall Justice. Ambrose and Arnaud (2005) believe the recent shift to overall justice may, in fact, reflect a return to earlier conceptualizations of justice. They note that Leventhal's (1980) work on procedural justice outlined procedural and distributive rules as the basis of (overall) justice evaluations. Similarly, Lind's (2001) Fairness Heuristic Theory postulates that a general fairness judgement is generated rapidly and automatically in response to justice events. In this conceptualization, individuals use whatever justice experiences they encounter (whether distributive, procedural, or interactional) to form or revise an overall fairness judgement (Lind, 2001). The overall fairness evaluation can subsequently exert an influence on attitudes and behaviours (Kim

& Leung, 2007) and serve as a cognitive shortcut used to resolve uncertainty in workplace interactions (Lind, 2001).

Measuring overall justice judgements may provide a mechanism to examine organizational justice without issues of multicollinearity that result from high intercorrelations between the justice facets (Ambrose & Arnaud, 2005). Indeed, meta-analyses have confirmed that the relationship between procedural and distributive justice is consistently high ($\rho = .64$, Hauenstein, et al., 2001; $r = .48$, Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Colquitt et al. (2001) also found high correlations between the interpersonal and informational justice subscales ($r = .57$). In light of this latter finding, some researchers have collapsed interpersonal and informational justice together into a single interactional justice facet (e.g., Ambrose & Schminke, 2006; Schminke & Ambrose, 2007); others, however, argue in favour of distinguishing between the constructs (e.g., Colquitt, 2001; Colquitt et al., 2001). Given that the sub facets of justice share meaningful common variance with each other, Hauenstein et al. (2001) argued that they are also likely to capture common variance in work outcomes. To offer support to the further study of overall justice, Hauenstein et al. noted that rather than risk inaccurately assigning shared variance to one sub facet in favour of another, interpreting overall justice perceptions could provide researchers with another option. In addition to the support offered by the concept of shared variance, Colquitt and Shaw's (2005) confirmatory factor analysis (CFA) found that specific justice sub-facets loaded significantly on a latent overall justice factor.

What then, is overall justice? Colquitt and Shaw (2005) argued that overall justice could be conceptualized as either a higher order latent construct or as a global perception.

Their CFA offered support for overall justice as a higher order latent variable that drives responses to the sub facets of justice. Specifically, these researchers conducted a second-order CFA in which the justice facets all loaded significantly on the overall justice factor. This conceptualization suggests that overall evaluations of fairness impact how individuals judge specific justice facets.

In contrast, overall justice as a global perception refers to an evaluation of the justice of an organization or entity (Colquitt & Shaw, 2005). Overall justice in this case does not drive the evaluation of specific facets, rather, specific instances or evaluations of justice (e.g., about procedures, outcomes or interactions) impact or are used to form a global evaluation of fairness at work. Overall justice as a global perception more closely mirrors Lind's (2001) Fairness Heuristic Theory (Colquitt & Shaw, 2005). Specifically, Lind (2001) suggested that overall justice refers to an individual's global evaluation of his or her work experiences. In this regard, overall justice could be measured using general statements about the organization or it could be referenced to human sources such as supervisors (Colquitt & Shaw, 2005). In addition, Kray and Lind (2002) demonstrated that individuals rely on information about the fairness experiences of others to form a global assessment of justice. For the current study, overall justice was conceptualized as a *global evaluation* that is referenced toward the work environment rather than a single source (e.g., supervisor or organization); studying overall justice as a global evaluation is in keeping with the majority of research and theory in the area (Ambrose & Schminke, 2006; Jones & Martens, 2007; Kim & Leung, 2007; Schminke & Ambrose, 2007).

With respect to the measurement of overall justice, Schminke and Ambrose (2007) sought to synthesize the different conceptualizations of overall justice (including

those postulated by Colquitt & Shaw, 2005; Kray & Lind, 2002; Lind, 2001) by creating a six-item overall justice scale; three items measured personal justice experiences and three items measured the fairness of the organization, including the fairness of others' experiences. In contrast, Jones and Martens' (2007) study involving overall justice focused on the senior management team as the relevant entity (versus the organization). They defined overall justice as "individuals' global assessment of a social entity, such as an individual manager or senior management team" (p. 1). Despite the change in focus that resulted from the rewording of items, these researchers have found overall justice to be a distinct construct from the other (four and three, respectively) sub facets of organizational justice (Ambrose & Schminke, 2006; Jones & Martens, 2007; Schminke & Ambrose, 2007). In light of this research, I propose the following hypothesis:

Hypothesis 2: Overall justice is a distinct construct from distributive, procedural, interpersonal, informational, and co-worker interpersonal justice.

Justice Facets as Antecedents to Overall Justice. In addition to overall justice being distinct from the facets of justice, researchers have postulated that the facets act as antecedents to overall justice evaluations. Ambrose and Schminke's (2006) Structural Equation Modeling analyses found that distributive, procedural and interactional justice were significantly related to overall justice, with procedural justice exhibiting the strongest relationship of the three. In contrast, Jones and Martens (2007) found that interpersonal justice acted as the main driver of overall justice evaluations and that procedural justice was not significantly related to overall justice. In addition, distributive and informational justice were related to perceptions of overall fairness in Jones and Martens' study. Thus, depending on the wording of the overall justice items, different sub

facets of justice (e.g., procedural, interpersonal) appeared to act as major drivers of overall justice evaluations.

The findings of both Ambrose and Schminke's (2006) and Jones and Martens' (2007) studies are consistent with the concept of multifoci justice (Cropanzano, et al., 2001), which postulates that the experience of injustice in organizations may originate from different sources. Source refers to the perpetrator of potentially unjust treatment (Rupp & Spencer, 2006). Many researchers have recognized two central sources from which fairness evaluations are drawn: formal and informal (Blader & Tyler, 2003). Formal sources are considered to be at the organizational level and are often structural in nature and fairly constant over time. Malatesta and Byrne (1997) suggested that policies and procedures are believed to originate from the organization, thus, judgments about procedural justice should be closely linked to attitudes and behaviours directed to the organization. On the other hand, informal sources of justice evaluations can originate from the experiences people have with individuals they encounter in their work lives (e.g., their supervisors). Interpersonal treatment is interpreted as originating directly from the individual (i.e., supervisors and managers), thus, Malatesta and Byrne (1997) suggested that interactional justice would be linked to attitudes and behaviours directed at the supervisor. Considering that the item wording used by Jones and Martens (2007) centered on informal sources (e.g., the senior management team) it is not surprising that they found interpersonal justice to be a major driver of overall justice perceptions. In contrast, Ambrose and Schminke's (2006) items focused on formal (i.e., organizational¹) sources, and these researchers found that procedural justice contributed most strongly to overall justice perceptions.

For this study, I modified Ambrose and Schminke's (2006) items so that they covered, simultaneously, both formal and informal sources of justice evaluations. Specifically, by referring more generally to the work environment (i.e., changing items from "organizational" wording to a more general "workplace" wording), the scale may provide a more comprehensive estimation of what overall justice at work comprises. Specifically, justice evaluations originating from the workplace more broadly could allow respondents to take into account both organizational factors and interpersonal treatment from supervisors and coworkers.

Ambrose and Schminke (2006) argued that a benefit to considering overall justice judgements is that it represents a parsimonious approach that provides an accurate description of an individual's justice experiences. Colquitt and Shaw (2005) argued that researchers may have more flexibility when using overall justice because variance can be explained without multicollinearity. Nonetheless, a complete departure from the specific types of justice is not yet warranted. Indeed, researchers have found that the sub facets of justice account for variance in overall justice or could be antecedents to overall justice judgements (Ambrose & Schminke, 2006; Jones & Martens, 2007; Kim & Leung, 2007). Colquitt and Shaw (2005) suggested that further research could clarify which of the justice dimensions are most highly related to overall justice. For this study, modifying Ambrose and Schminke's (2006) items so that they encompassed both formal and informal sources of justice evaluations in the work environment may provide a more comprehensive understanding of overall justice from a multifoci standpoint. Accordingly, I propose the following hypothesis:

Hypothesis 3: Distributive, procedural, informational, and interpersonal justice (from both supervisors and coworkers) each account for unique variance in overall justice perceptions.

The Link Between Justice and Outcomes

For some time, employees' perceptions of injustice have been empirically linked to work-related attitudes and behaviours (Folger & Cropanzano, 1998). However, only recently has organizational injustice been recognized as a growing issue in the occupational stress literature. In light of the potential negative implications of stress for both employees and their organizations (see Quick, Quick, Nelson, & Hurrell, 1997), examining the link between justice and stress is an important avenue for continued research. Similarly, the positive relationship between injustice and intentions to turnover has been shown in meta-analytic research (see Colquitt et al., 2001). In the current study, I build on existing research by examining the link between justice (at both the facet and global levels) and strain and intent to turnover.

Stress and Psychological Strain. The term stress has been ascribed numerous meanings, describing both how individuals feel and as an outside influence to which individuals are exposed in their environment (Francis & Barling, 2005). According to Lazarus and Folkman (1984), outside influences are *stressors*, which are external events in the environment that have the *potential* to create negative outcomes for individuals. Stressors can be distinguished from stress in that stressors are objective events and stress is one's subjective reaction to stressors (Barling, 1990). *Stress* is defined in terms of a psychological threat, when the individual views a situation as potentially hazardous (Singer & Davidson, 1986). In recent years, stress has been identified as a fundamental

element of organizational life (Quick, Murphy, & Hurrell, 1992). Indeed, organizational stress is prominent in the workplace and has been credited with negative health outcomes for employees including depression, coronary heart disease, increased alcohol consumption, sickness, absence and mortality (Amick, McDonough, Chang, Rogers, Pieper, & Duncan, 2002; Kuper, Singh-Manoux, Siegrist, & Marmot, 2002; Quick, et al., 1997; Vahtera, Kivimäki, Pentti, & Theorell, 2000). In addition, a number of detrimental organizational outcomes have also been ascribed to occupational stress, including reduced job satisfaction and commitment, and intentions to turnover (Bhagat, McQuaid, Lindholm, & Segovis, 1985; Podsakoff, LePine & LePine, 2007).

Strain is the physiological, behavioral, and psychological consequence of long-term exposure to stress and may encompass some of the outcomes detailed above (Francis & Barling, 2005; Pratt & Barling, 1988). Korunka and Vitouch (1999) classified strain as a general category that includes psychosomatic complaints, and dissatisfaction, while other researches have linked strain to specific physiological outcomes such as cancer, gastrointestinal illness, and cardiovascular disease (Kristensen, 1996; Quick et al., 1997). Psychological outcomes of strain include anxiety, cognitive failure, and depression (Billings & Moos, 1982; Kivimaki & Lusa, 1994; Tepper, 2001).

Justice and Strain. Recent research indicates that overall justice mediates the relationship between the sub facets of justice and organizational outcomes including affective commitment, job satisfaction, turnover intentions, task performance, organizational citizenship behaviour, organizational deviance and trust (Ambrose & Schminke, 2006; Jones & Martens, 2007). Although this research is promising, it fails to capture the impact of overall justice on other important outcomes, such as strain. An

understanding of how justice evaluations in the workplace impact strain is relevant, in part considering strain's deleterious effects accrue to the organization.

The prediction that the sub facets of justice will influence strain has received support in the recent literature. The theoretical support for distributive justice's link to strain is based on Adams' (1965) equity theory. According to the theory, exposure to perceived inequity contributes to individuals' experiences of tension. Various authors have confirmed distributive justices' relationship with strain (Francis & Barling, 2005; Tepper, 2001). Studies have also found support for the relationship between procedural justice and strain (see Elovainio, Kivimaki, Helkama, 2001; Francis & Barling, 2005; Judge & Colquitt, 2004). In accordance with the group-value model of justice, when individuals are not treated fairly (either through procedures or interpersonally), it suggests to them that they are not valued by the organization, group or authority in question (Lind & Tyler, 1988). This evaluation can incite stress because individuals who do not see themselves as embedded in the group may not view their workplace as stable or predictable (Cohen & Wills, 1985). Interactional injustice may also be linked to strain based on its negative influence on valuable coping resources such as social support. Specifically, social support can buffer the relationship between perceived stress and strain (Cohen & Wills, 1985). Heaney and Israel (2002) defined social support as social exchanges or interpersonal transactions that the sender intends to be helpful, which are offered in the context of trust, respect and caring. Respect, in turn, is a key aspect of interpersonal justice. Kahn and Byosiene (1992) asserted that individuals who receive more social support from their supervisors report less anxiety and depression than those who receive less support. Judge and Colquitt (2004) also found evidence that

interpersonal injustice predicted a measure of stress. Similarly, informational justice may be linked to stress and strain because supervisors who provide information to subordinates may cast potentially stressful situations in a less hostile light (Vermunt & Steensma, 2003). Interactionally fair treatment can also buffer some of the negative stress responses (e.g., insomnia) to pay inequity (Greenberg, 2006), suggesting that individuals may experience less distress when they experience interactional justice from their supervisors. Though supervisors play a central role in an employee's work life, one's coworkers are also considered a source of social support (Quick et al., 1997). Beach, Martin, Blum, and Roman (1993) found that, next to spouses, coworkers were named most often as sources of social support. When interpersonal treatment stemming from coworkers is perceived as unjust, employees may be less likely to seek social support from this important group.

Researchers (Ambrose & Schminke, 2006; Jones & Martens, 2007; Schminke & Ambrose, 2007) have established that the sub facets of justice can act as antecedents to overall justice. In addition, overall justice appears to play a mediating role between the facets and organizational outcomes such as commitment, turnover intentions, job satisfaction, task performance, organizational citizenship behaviours, and organizational deviance (Ambrose & Schminke, 2006). Although the outcome variable of strain has been linked to the sub facets of organizational justice, to date no studies have examined whether overall justice perceptions may drive the relationship between the sub facets and strain. Based on past research on justice and strain, and overall justice, I propose the following hypothesis:

Hypothesis 4: Overall justice perceptions will mediate the relationships between procedural, distributive, informational, interpersonal, and co-worker interpersonal justice and strain.

In addition to the individual consequences relating to the experience of stress and strain, organizational outcomes may also be severe. Jex and Crossley (2005) found that stress was linked to decreased organizational commitment, job performance, and increased absenteeism. Lateness, absenteeism and turnover are all considered to be withdrawal behaviours, which share common attitudinal correlates (Hom & Griffeth, 1995). Thus, the experience of stress and strain may lead to other outcomes including turnover intentions and ultimately turnover (Tett & Meyer, 1993). Organizations strive to understand antecedents to turnover because it can be related to lost productivity and thus, to their bottom line.

Turnover. Lee defined turnover as ‘the termination of an individual’s formal membership with an organization’ (1997, p. 97). Although turnover can occasionally be considered functional, it is generally considered undesirable for organizations based on the costs associated with replacement of personnel (Hollenbeck & Williams, 1986).

Staffing levels in the Canadian Forces hover around 65,400 members, however, initiatives to increase the strength of the Canadian Forces by 5,000 individuals by 2010 have been underway since 2005 (Currie, 2005). Indeed, turnover is a consistent barrier to increasing staffing levels. Overall, voluntary attrition in the Canadian Forces is on the rise, with a 21% increase between 2000/01 and 2003/04 (Currie, 2005). A total of 3,408 non-commissioned members left in 2004/05, 54% of which were voluntary releases (versus compulsory releases, which could include things such as medical conditions

precluding military service). The role of justice in turnover is of practical importance to the Canadian Forces because of the costs associated with voluntary attrition in terms of salary, training resources, and recruiting efforts. Nonetheless, understanding the antecedents of turnover is important regardless of organization type.

Strain and Intentions to Turnover. Numerous researchers have established that elevated levels of stress and resultant strain are associated with increased intentions to quit (Kelloway & Day, 2005; Podaskoff, LePine & LePine, 2007; Rush, Schoel, & Barnard, 1995). Wanberg and Banas (2000) expanded this research and revealed that stress was related to both intentions to leave and actual voluntary turnover. In meta-analytic research, intentions to turnover have displayed a strong link with actual turnover ($r = .45$, Tett & Meyer, 1993). Thus, measuring intent to turnover is an appropriate alternative to attempting to study actual turnover. The proposition that individuals who experience higher levels of strain may be more likely to intend to leave the organization was tested by the following hypothesis:

Hypothesis 5: Individuals who experience higher levels of strain will be more likely to report intentions to leave the organization.

Few studies have considered the mediating role of strain in the relationship between organizational justice and intentions to quit. One exception is Riolli and Savicki's (2006) research that found a relationship between procedural justice, strain, and turnover. Not surprisingly considering the fairly recent conceptualization of overall justice, no studies have examined whether overall justice and strain are linked. However, Ambrose and Schminke (2006) established a relationship between overall justice and intentions to turnover. The final hypothesis in this study examines whether perceptions of

overall justice are related to intentions to leave the organization through their relationship with strain:

Hypothesis 6: The relationship between perceptions of overall justice and intentions to quit will be mediated by strain.

Previous studies of justice and strain have often focused on only two or three sub facets of justice (procedural & distributive, Tepper (2001); procedural & interactional, Elovainio, Kivimaki & Helkama (2001); procedural, interactional & distributive, Francis & Barling (2005); Tepper, (2000); for an exception see Judge & Colquitt, 2004). The current study contributes to the existing literature by examining justice's relationship with strain and intentions to turnover using the fully articulated, four factor model (Colquitt, 2001) of organizational justice. In addition to the four factor model, this study examined two far less studied aspects of justice—interpersonal justice from coworkers (Donovan et al., 1998) and overall justice perceptions (Ambrose & Schminke, 2006)—which may provide a clearer understanding of how justice evaluations from different sources (coworkers, supervisors and organizations) and at different levels (sub facets and overall justice) are related to the important outcomes of strain and turnover.

Method

Participants

Three hundred and seventeen participants responded to either an electronic or a paper and pencil survey, The Unit Morale Profile. The Unit Morale Profile is a commonly administered instrument in the Canadian Forces used to assess employee opinions. Three units were surveyed, however, data for one unit could not be used for Structural Equation Modeling (SEM; the main analysis method used in this study) due to

the small sample size ($N = 46$). Thus, this unit was excluded from the analysis. In addition, the number of surveys completed in French ($N = 40$) was not large enough to support multi-group analysis to establish if language differences existed. Thus, only respondents who completed the survey in English were retained for the analysis. The response rate for Unit 1 was approximately 34%, for Unit 2 the response rate was approximately 78%.² The listwise N s for the justice measurement models were: Unit 1 $N = 97$, Unit 2 $N = 125$. For the structural models, the listwise N s were: Unit 1 $N = 95$, Unit 2 $N = 123$.

The sex of the respondents in the final sample was 86.3% male and 13.7% female. Participants ranged in age, with 28.5% in the 18 to 30 age range, 32.4% in the 31-40 age range, 34.2% in the 41-50 age range, and 4.8% in the 51-60 age range. Fifty-five point five percent of the participants completed high school, 35.5% had completed college or university undergraduate programs, and 3.5% had completed university graduate programs. Organizational tenure ranged in years with 17.5% of individuals serving less than 5 years, 19.2% serving 5-10 years, 9.6% serving 11-15 years, 22.7% serving 16-20 years, 14.4% serving 21-25 years, and 16.6% serving more than 26 years.

Procedure

The justice, strain and intentions to turnover scales were included as part of the larger Unit Morale Profile survey. The Unit Morale Profile is an instrument selected by Commanding Officers who wish to survey their incumbents regarding unit functioning. In addition to completing measures of various psychological constructs, participants were asked to answer a limited number of items related to certain demographic characteristics. A general consent form (i.e., not specific to my research questions) was attached to the

survey. Prior to completing the questionnaires, participants were provided with the information/consent sheet, which indicated that participation was voluntary. Completion of the survey was taken as an indication of their consent. Participants were free to withdraw participation at any time while filling out the questionnaire.

Measures

All justice facet scales were rated on a 5-point scale ranging from 1 (to a very small extent) to 5 (to a very large extent). The variables were computed so that higher scores reflected higher levels of perceived justice. The complete scales used in the study are provided in Appendix A.

Distributive Justice. Colquitt's (2001) 4-item scale was used to measure distributive justice ($\alpha = .95$).³ Sample items include (To what extent:) "Are your outcomes justified, given your performance?" and "Do your outcomes reflect the effort you have put into your work?"

Procedural Justice. Colquitt's (2001) 7-item procedural justice scale was slightly modified to suit the military organization ($\alpha = .92$). Sample items include: (To what extent:) "Are you able to express your views and feelings during decision-making procedures?" and "Are decision-making procedures free of bias?"

Interpersonal Justice. Colquitt's (2001) 4-item scale was used to assess interpersonal justice ($\alpha = .93$). Sample items include: (To what extent:) "Does your supervisor refrain from improper remarks or comments?" and "Does your supervisor treat you with respect?"

Informational Justice. Colquitt's (2001) 5-item scale was used to assess informational justice ($\alpha = .93$). Sample items include: (To what extent:) "Is your

supervisor candid in his/her communications with you?” and “Does your supervisor communicate details (e.g., about decisions and procedures) in a timely manner?”

Interpersonal Justice from Coworkers. I adapted Colquitt’s (2001) 4-item Interpersonal Justice Scale to reflect justice from coworkers ($\alpha = .93$). Sample items include: (To what extent:) “Do your coworkers refrain from improper remarks or comments?” and “Do your coworkers treat you with dignity?”

Overall Justice. I used a modified version of Ambrose and Schminke’s (2006) 6-item overall justice scale ($\alpha = .96$). The modified measure used a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The lead in for the scale was “The following questions refer to how fair you think your workplace is overall.” Sample items include: “Overall, I’m treated fairly at work” and “In general, employees are treated fairly in this workplace.”⁴ The overall justice scale was coded such that higher scores reflected higher levels of the construct.

Psychological Strain. I used the 10-item Kessler Psychological Distress Scale (K10; Kessler, Andrews, Colpe, Hiripi, Mroczek, Normand, Walters, & Zaslavsky, 2002) to measure strain ($\alpha = .92$). This measure uses a five-point Likert-type scale ranging from 1 (none of the time) to 5 (all of the time). Sample items include: (In the last four weeks:) “Did you feel tired-out for no good reason?” and “Did you feel so nervous that nothing could calm you down?” The strain scale was coded such that higher scores reflected higher levels of the construct.

Intentions to Turnover. This construct was measured using five of the items in the existing career intentions scale in the Unit Morale Profile,⁵ which was created by Director Military Personnel Operational Research and Analysis ($\alpha = .77$). The measure uses a

five-point Likert-type rating from 1 (completely disagree) to 5 (completely agree). The lead into the scale was “This section asks you to describe your Canadian Forces career intentions.” The items reflect various conditions that individuals might consider when contemplating turnover. Sample items include “I intend to stay with the Canadian Forces as long as I can (reverse coded)” and “I intend to leave the Canadian Forces as soon as I finish my terms of service”. Terms of service refer to the employment contract individuals have signed; normally they are not permitted to leave the organization before the end of the contract without providing 6 months notice. The intent to turnover scale was coded such that higher scores reflected higher levels of the construct.

Results

Prior to testing the hypotheses, the data were examined for outliers, data entry errors, non-random missing data, and violations of assumptions including non-linearity, non-normality,⁶ multicollinearity, and heteroskedasticity. Frequencies and descriptive statistics were run using SPSS 14.0 for Windows. No outliers (e.g., standardized scores over 4 on any item) or any other serious violations of assumptions were identified. Missing data was treated using listwise deletion at the item level. Any case missing a value on any of the variables included in an analysis was removed. Because the data were obtained from two separate units, multiple group analyses were conducted to confirm the invariance of the justice measurement model, as well as the measurement model with the justice, strain and intentions to turnover items present. Only if invariance is established can the two groups be collapsed together and analyzed as one data set (Byrne, 1994).

Multiple Group Analyses. Prior to testing hypotheses related to invariance, Byrne (1994) recommends obtaining baseline models for each group separately. Next, to test for

invariance, a further baseline test is required where both groups' unconstrained data is analyzed simultaneously. The unconstrained baseline model provides a Chi-Square value that is used to compare further nested models in which equality constraints are imposed between the two groups (Kline, 1998).

Testing the Invariance of the Justice Measurement Model. My hypotheses propose a six-factor structure for justice comprised of distributive justice, procedural justice, interpersonal justice, informational justice, co-worker justice, and overall justice. This six-factor model was compared to four theoretically derived alternative models (i.e., a 5-component model collapsing interpersonal and informational justice into interactional justice; a 5-component model combining interpersonal justice from supervisors and coworkers; a 4-component reflecting multifoci justice; a 2-component model with the facets combined on one factor and overall justice on another factor); in all analyses the justice facets were allowed to correlate with each other and with overall justice. As suggested by Byrne (1994), I first examined my proposed and alternative measurement models for each group separately (using EQS, Version 6.1). To compare two nested models, Tabachnick and Fidell (2001) suggest subtracting the chi-square value of the larger model from the chi-square value of the smaller model and subtracting the degrees of freedom of the larger model from the degrees of freedom of the smaller model. The difference in degrees of freedom can then be used to obtain a critical value that can be used to evaluate the significance of the chi-square difference value and thus, the overall parsimony and fit of the models considered.

When presenting the results of a CFA, Hu and Bentler (1998) recommended the use of at least two fit indices, of which one should be the standardized root mean square

residual (SRMR) as this index is the most sensitive to misspecification error. Tabachnick and Fidell (2001) indicated that the comparative fit index (CFI) and the root mean square error of approximation (RMSEA) are the most commonly reported fit indices. Meade, Johnson and Braddy (2008) suggest reporting the CFI when questions of measurement invariance exist. In this study, data were obtained from two different units in the Canadian Forces, thus accounting for measurement invariance is important. Therefore, in this study, the SRMR, the CFI, and the RMSEA are presented. According to Hu and Bentler (1999), a SRMR less than .08, a CFI greater than .95, and a RMSEA lower than .06 denote a model with good fit. Eight chi-square difference tests were conducted to compare the six-factor measurement model with the competing measurement models for the two units separately. The results of these analyses are presented in Tables 1 and 2.

The high intercorrelations in past research between the interpersonal and informational justice constructs has resulted in them being combined fairly often into one interactional justice factor (Colquitt & Shaw, 2005). Based on this knowledge and Ambrose and Schminke's (2006) results, the first competing model I attempted was a five-factor model with informational justice and interpersonal justice loading together on one interactional justice factor and the four other factors consisting of overall justice, distributive justice, procedural justice, and co-worker justice. Chi-square difference tests indicated that the six-factor measurement model fit the data significantly better than the five-factor measurement model with one interactional justice factor, Unit 1: $\chi^2_{\text{difference}}(5, N = 97) = 146.00, p < .001$; Unit 2: $\chi^2_{\text{difference}}(5, N = 125) = 332.56, p < .001$.

The six-factor measurement model was then compared to the five-factor model where Interpersonal Justice (from supervisors and coworkers) was collapsed into a single

factor. Co-worker interpersonal justice, when measured by Donovan et al. (1998) displayed a moderately high correlation with supervisor interpersonal justice ($r = .47$), suggesting there was a potential for a high inter-correlation between the two interpersonal justice scales. To test this possible relationship, I examined a five-factor model where overall justice, distributive justice, procedural justice, informational justice and interpersonal justice (from supervisors and coworkers) separate into five factors. Chi-square difference tests again indicated that the six-factor measurement model fit the data significantly better than the five-factor (coworker/supervisor interpersonal justice combined) measurement model, Unit 1: $\chi^2_{\text{difference}}(5, N = 97) = 264.09, p < .001$; Unit 2: $\chi^2_{\text{difference}}(5, N = 125) = 694.56, p < .001$.

The six-factor measurement model was then compared to a four-factor model reflecting multi-foci justice, where organizational items, supervisor items, and co-worker items separate into 3 factors, and overall justice represented a separate fourth factor. The rationale for this structure comes from Malatesta and Byrne (1997), who found that policies and procedures were perceived to be linked to the organization, thus, when considering how to respond to decision-making systems (organizations), individuals consider judgments about procedural justice (Colquitt, 2001). Olkkonen and Lipponen (2004) postulated that distributive justice could also be organization-based, arguing that, “just as organizations establish general decision-making procedures, they often lay down general guidelines for the allocation of rewards and resources, which may also be beyond the control of a single supervisor” (p. 203). Conversely, informal sources of justice evaluations can originate from the experiences people have with individuals they encounter in their work lives (e.g., their supervisors). Interactional justice (interpersonal

justice and informational justice) can be interpreted as originating directly from the individual (i.e., supervisors or coworkers); thus, Colquitt (2001) suggested that when deciding how to react to decision-making agents (e.g., supervisors) individuals would consider interactional justice perceptions. Coworkers can be considered another source of justice evaluations (Donovan et al., 1998). Therefore, the multi-foci model would reflect three foci of justice evaluations with distributive and procedural justice loading on the organizational factor, informational and interpersonal justice from supervisors loading on a supervisor factor, and interpersonal justice from coworkers loading on a co-worker factor. The overall justice items were set to load on a separate factor (in line with Ambrose & Schminke's (2006) research). Chi-square difference tests indicated that the six-factor measurement model fit the data significantly better than the four-factor measurement model, Unit 1: $\chi^2_{\text{difference}}(9, N = 97) = 308.41, p < .001$; Unit 2: $\chi^2_{\text{difference}}(9, N = 125) = 670.22, p < .001$.

The final model tested was a two-factor model where the sub facets of justice collapsed into one factor and the overall justice items reflected a second factor. Ambrose and Schminke (2006) assert that this model would be analogous to a composite overall justice factor and a global overall justice factor. The six-factor model provided a significantly better fit to the data than the two-factor model, Unit 1: $\chi^2_{\text{difference}}(14, N = 97) = 873.43, p < .001$; Unit 2: $\chi^2_{\text{difference}}(14, N = 125) = 1176.74, p < .001$.

Based on fit indices and Chi square difference tests, both groups' data were best represented by my proposed six-factor model (standardized factor loadings for this model for both units are depicted in Figures 2 and 3). For Unit 1, $\chi^2(390, N = 97) = 566.58, p < .001$; the SRMR was .064, the CFI was .929, and the RMSEA was .069, indicating an

adequate fit. For Unit 2, $\chi^2(390, N = 125) = 728.47, p < .001$; the SRMR was .049, the CFI was .933, and the RMSEA was .084, also indicating an adequate fit to the data.

Although the fit of the model was not ideal, there are several reasons why this might be. Item parceling is a common approach undertaken by researchers to reduce sampling error and obtain a better fitting model (Little, Cunningham & Shahar, 2002). However, item parceling was not completed on the individual units or in the tests for invariance because parceling can make variant groups appear equivalent; thus parceling is not recommended until invariance has been established (Meade & Kroustalis, 2006). In addition, model respecification may have slightly improved the fit indices (e.g., allowing items to cross-load on several factors), however, as there was no theoretical rationale for such cross-loadings, they were not examined.

To begin the test for invariance, a further baseline model was obtained where both groups' unconstrained data was analyzed simultaneously. The constrained and unconstrained models are nested, thus they can be compared using a Chi-square difference test (Byrne, 2001; Kline, 1998). A chi-square difference test indicated that the unconstrained six-factor measurement model (with the justice items only) was invariant from the constrained (i.e., all factor variances, all factor loadings, and all factor covariances were constrained to be equal) six-factor measurement model $\chi^2_{\text{difference}}(45, Ns = 97, 125) = 54.45, ns$; results are summarized in Table 5.

Testing the Invariance of the Eight-Factor Measurement Model. After the six-factor measurement model for the justice items was established as the best-fitting model for both units and invariant between units, the measurement model was expanded to include the outcome measures of strain and intentions to turnover. For the eight-factor

measurement model, each of the factors was allowed to correlate with all other factors; standardized loadings for each unit are depicted in Figures 4 and 5. For Unit 1, $\chi^2(917, N = 95) = 1511.64, p < .001$; the SRMR for the eight-factor model was .081, the CFI was .828, and the RMSEA was .083. For Unit 2, $\chi^2(917, N = 123) = 1621.60, p < .001$; the SRMR was .060, the CFI was .889, and the RMSEA was .079; results are presented in Tables 1 and 2. The fit indices reflect a poor fit for the eight-component measurement models in both units; however, this is partially due to the number of indicators being used in confirmatory factor analysis. Little et al. (2002) indicate that it is extremely difficult for models with item level indicators to obtain a good fit in smaller samples (i.e., when the item: subject ratio is poor). Descriptive statistics for the justice and outcomes scale items for Unit 1 and Unit 2 are presented in Tables 3 and 4, respectively.

The unconstrained eight-factor model was compared to the constrained eight-factor model. Specifically, all factor variances, all factor loadings and all covariances (all factors were allowed to correlate) were constrained to be equal between the two groups. Chi-square difference tests indicated that the unconstrained eight-factor model was equivalent to the constrained eight-factor model $\chi^2_{\text{difference}}(73, Ns = 95, 123) 84.54, ns$; these results are summarized in Table 5. Considering that all the measurement parameters between the groups are considered equal the two units can be collapsed together for further analyses (Byrne, 1994; Kline, 1998).

Hypothesis Testing

Test of the Justice Measurement Model. Given that the units were invariant, I combined the two units prior to addressing my hypotheses. To address hypotheses one and two, I again conducted confirmatory factor analyses on the justice items to examine

the fit of the theorized six-factor model (distributive justice, procedural justice, interpersonal justice from supervisors, interpersonal justice from coworkers, informational justice and overall justice). The results of the CFA for the justice measures are presented before item parceling because the structure and relationships among the items are of interest considering that overall justice and co-worker justice represent new scales (Bandalos & Finney, 2001).

For the hypothesized six-factor model, $\chi^2(390, N = 222) = 775.37, p < .001$; the SRMR was .048, the CFI was .953, and the RMSEA was .055, indicating an excellent fit (see Table 6). All loadings were significant and accounted for at least 47.6% of the variance in the solution. I compared my hypothesized six-factor model to several alternative models (described in the previous section) to determine which offered the best parsimony and fit to the data. Based on Ambrose and Schminke's (2006) results, the first competing model I attempted was a five-factor model where informational justice and interpersonal justice loaded together on one interactional justice factor and the four other factors consisted of overall justice, distributive justice, procedural justice, and co-worker justice. For the five-factor model, $\chi^2(395, N = 222) = 1234.55, p < .001$; the SRMR was .062, the CFI was .885, and the RMSEA was .086. All loadings were significant and accounted for at least 48.6% of the variance in the solution.

I examined an additional five-factor model where overall justice, distributive justice, procedural justice, informational justice and interpersonal justice (from supervisors and coworkers) separate into five factors. For this alternate five-factor model, $\chi^2(395, N = 222) = 1652.47, p < .001$; the SRMR was .108, the CFI was .828, and the

RMSEA was .105. All loadings were significant and accounted for at least 16.3% of the variance in the solution.

I also tested a four-factor model reflecting the multifoci approach to justice. Distributive and procedural justice loaded on the organizational factor, informational and interpersonal justice from supervisors loaded on a supervisor factor and interpersonal justice from coworkers loaded on a co-worker factor. The overall justice items loaded on a separate factor (in line with Ambrose & Schminke's (2006) research). For the four-factor (multi-foci) model, $\chi^2(399, N = 222) = 1713.71, p < .001$; the SRMR was .075, the CFI was .815, and the RMSEA was .108. All loadings were significant and accounted for at least 35.2% of the variance in the solution.

The final model I tested was a two-factor model where the sub facets of justice collapsed into one factor and the overall justice items reflected a second factor. Ambrose and Schminke (2006) assert that this model would be analogous to a composite overall justice factor and a global overall justice factor. For the two-factor model, $\chi^2(404, N = 222) = 3214.13, p < .001$; the SRMR was .112, the CFI was .630, and the RMSEA was .152. All loadings were significant and accounted for at least 21.2% of the variance in the solution.

Only the 6 factor model provided acceptable fit on all indices, however, to ensure this model provided both the best parsimony and the best fit, four chi-square difference tests were conducted to compare the competing measurement models. Chi-square difference tests indicated that the six-factor measurement model fit the data significantly better than all competing models, see Table 6 for a summary of the chi-square difference tests. Based on these results, and the theoretical support within the literature, the

subsequent path analyses were conducted with the six-factor model of organizational justice. Descriptive statistics for the justice and outcomes scales are presented in Table 7. The standardized loadings for the six-factor measurement model are depicted in Figure 6.

The results of the CFA for the justice measures were presented at the item level because the structure and relationships among the items are of interest (considering that overall justice and co-worker justice represent new scales). However, as the eight-factor measurement model is focused on the structural relationships between the constructs rather than their measurement structure, which has been already established, (i.e., the distinction between justice, strain and intent to turnover are not in question) it is considered appropriate to use item parceling in CFA (Bandalos & Finney, 2001).

Parcels were constructed using the item-to-construct approach for all unidimensional factors and the construct domain representative approach for the K10, which is a multidimensional construct (Little et al., 2002). To build parcels using the item-to-construct approach I conducted an EFA (using oblique rotation and principal axis factoring extraction) to ensure that each subscale was unidimensional. I constructed the parcels by adding the item with the largest loading to the first parcel, and the next highest item to the second parcel. Depending on the number of items in the scale, different numbers of parcels were employed. For example, in a four-item subscale, the item with the third largest loading was then added to the second parcel and the item with the lowest loading was placed on the first parcel. The purpose of this parceling approach is to produce item parcels with similar contributions (Little, et al., 2002). The K10 measures psychological strain, which is considered a broad construct with items that span two dimensions, namely, anxiety and depression (Kessler et al., 2002). To address this

structure, I used the construct domain representative approach. Therefore, items from both the anxiety and depression dimensions were placed in each parcel (Little et al., 2002). For the complete breakdown of item parcels see Table 8. The results of the CFA indicate an excellent fit to the data for the eight-factor model when item parceling is used: $\chi^2(124, N = 218) = 203.44, p < .001$; the SRMR was .032, the CFI was .981, and the RMSEA was .047.⁷ Standardized factor loadings for the eight-factor model are depicted in Figure 7).

Test of the Structural Model. Together, hypotheses three, four, five and six predict that overall justice will mediate the relationship between the antecedent justice variables (distributive, procedural, interpersonal (from supervisors and coworkers) and informational justice) and the outcome variables of strain and intent to turnover. The data were analyzed using structural equation modeling (SEM) using latent variable path analysis. I tested my proposed full mediation model against two partial mediation models.

The hypothesized full mediation model includes 7 paths: five from the antecedent variables to the mediator (overall justice), one from overall justice to strain (the second mediator) and one from strain to intentions to turnover. As such, this model assumes that the relationships between the antecedent variables (justice sub facets) and intentions to turnover are exerted indirectly, through the mediators of overall justice and strain. In all path models, all of the justice facets (i.e., the exogenous variables) were correlated with each other.⁸

The main partial mediation model included all of the paths in the full mediation model with the addition of 11 direct paths. One path connected overall justice directly to intentions to turnover as found by Ambrose and Schminke (2006). In addition, I added

five paths linking the antecedent variables directly to strain because Francis and Barling (2005) found that interactional, distributive, and procedural justice were all unique, negative predictors of psychological strain. A direct path from co-worker interpersonal justice to strain was also warranted because social support has been found to buffer the relationship between perceived stress and strain (Cohen & Wills, 1985). Beach, Martin, Blum and Roman (1993) found that, next to spouses, coworkers were named most often as sources of social support. In a military context, social support from unit members has been found to attenuate the relationship between exposure to severe stress and stress reactions (Milgram, Orenstein, & Zafir, 1989). Five direct paths to turnover intentions were also added as researches have found relationships between the sub-facets of justice and intentions to turnover. Specifically, Ambrose and Schminke (2006) found evidence of a direct path between overall justice and turnover intentions; Donovan et al. (1998) found a relationship between both co-worker and supervisor interpersonal justice and intentions to turnover; Roberts, Coulson and Chonko (1999) linked distributive justice to withdrawal intentions and Colquitt, et al. (2001) linked both procedural and informational justice with withdrawal in their meta-analytic review.

Latent variable path analysis was conducted to determine if the data supported full or partial mediation; results of these analyses are outlined in Table 9. Chi-square difference tests were conducted to compare the two models as they are nested (Tabachnick & Fidell, 2006). For the fully mediated path model, $\chi^2(135, N = 218) = 219.33, p < .001$; the SRMR was .057, the CFI was .983, and the RMSEA was .043 (see Figure 8, all numbers on paths represent standardized estimates). To assess the effect size (i.e., how much of the variance in the endogenous variables was explained by my model)

I calculated the R^2 using the formula $1 - \text{the squared disturbance}$ (Kline, 1998). For the fully mediated path model, the amount of variance explained in overall justice was 66.6%, for strain it was 26.9%, and for intentions to turnover it was 15.5%.

The partially mediated model (11 additional paths) yielded similar results: $\chi^2 (124, N = 218) = 203.44, p < .001$; the SRMR was .032, the CFI was .983, and the RMSEA was .044 (see Figure 9, all numbers on paths represent standardized estimates). For the partially mediated path model with 11 additional paths, the amount of variance explained in overall justice was 66.5%, for strain it was 27.2%, and for intentions to turnover it was 24.3%.

To determine if the partially mediated model (with 11 additional paths) provided a better fit than the fully mediated model, a chi-square difference test was conducted. The results indicated that the partially mediated model (with 11 additional paths) was not significantly better than the fully mediated path model $\chi^2_{\text{difference}} (11, N = 218) 15.89, ns$.

A final model was tested based on the results obtained by Ambrose and Schminke (2006), who examined a partial mediation model that included a direct path between procedural justice and intentions to turnover. The results of the Wald test (i.e., the recommendations for dropping parameters) in my 11 additional paths partial mediation model suggested removing all direct paths except the path from procedural justice to intentions to turnover. This alternate, partially mediated model, with 1 additional path from procedural justice to intent to turnover yielded the following results, $\chi^2 (134, N = 218) = 208.94, p < .001$; an SRMR of .035, a CFI of .986, and a RMSEA of .039 (see Figure 10, all numbers on paths represent standardized estimates). The partially mediated model with one additional path was significantly better than the fully mediated model,

$\chi^2_{\text{difference}}(1, N = 218) 10.39, p < .01$; these results are summarized in Table 9. The amount of variance explained in overall justice was 66.5%, for strain it was 26.6%, and for intentions to turnover it was 21.8%.

Common method bias. Because all variables in the study were measured using a single method (employee ratings), it is possible that the relationships found among the variables may be inflated by common method variance. To account for the possibility of a single common method factor, which could be accounting for the variance in my study, I added a ninth factor that was linked to every item parcel in my study to my final SEM path model (i.e., the partial mediation model with 1 additional path between procedural justice and intentions to turnover). The purpose of the ninth factor is to control for the effects of an unmeasured latent methods factor (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The ninth factor is orthogonal to the existing eight factors in the study. For the eight latent factors in my study, the first parcel of each construct was fixed to 1 when loading on its respective factor. All eleven of the remaining parcels were fixed to 1 when loading on the common method factor. This pattern of loadings was required to achieve identification of the model (i.e., each item parcel was fixed to 1 on either its factor or on the common method factor or the model was not identified). By comparing the path model where common method variance was controlled to the model where common method variance was not controlled, researchers can examine whether the paths remain significant when the common method factor is present (MacKenzie, Podsakoff, & Paine, 1999). The overall pattern of significant relationships in my study was not affected by common method variance (i.e., all significant paths remained significant in the presence of the method factor).⁹ This suggests that common method variance does not

explain the pattern of results found in my study. Figure 11 and Table 10 depict the paths in the presence of the common method factor; all numbers on paths represent standardized estimates.

Discussion

The purpose of this study was to examine the relationships among the justice facets, overall justice, strain, and intentions to turnover in a military population. In line with my first hypothesis, I found that individuals form separate evaluations about the interpersonal justice they receive depending on the source (e.g., from supervisors versus coworkers). Specifically, two factors (supervisor, co-worker) best represented interpersonal justice judgments. That interpersonal justice from coworkers is distinguishable from interpersonal justice from supervisors is consistent with the concept of multifoci justice (Cropanzano, et al., 2001).

More broadly, and in line with my second hypothesis, I found support for a six-factor model of justice (my measure of overall justice, which was worded to capture the fairness of employees' immediate work environment, was distinguishable from both the traditional facets of organizational justice and interpersonal justice from coworkers). The factor structure suggests there is utility in distinguishing between overall justice, the traditional justice facets, and co-worker justice perceptions.

My third hypothesis postulated that distributive, procedural, informational, and interpersonal justice (from both supervisors and coworkers) would each predict unique variance in overall justice perceptions. This hypothesis was only partially supported. Distributive, procedural, and interpersonal justice from supervisors and coworkers each accounted for variance in overall justice judgements. Thus, justice judgements from

different foci (supervisors and coworkers) are related to overall justice evaluations. Informational justice was the only facet of justice that was not significantly linked to overall justice in the path model.¹⁰ It is not clear why informational justice failed to account for variance in overall justice judgments. It is possible that the variance accounted for by informational justice was shared with other facets of justice such as procedural, interpersonal, or distributive justice. In line with this notion, Greenberg (1993) and Tyler and Lind (1988) found that the provision of explanations about actual decision-making procedures were highly correlated with perceptions of procedural justice. Similarly, Skarlicki and Folger (1997) found a substitute relationship between procedural and interactional justice.

Hypothesis four asserted that overall justice perceptions would mediate the relationships between the justice facets and strain. This hypothesis was fully supported. My finding that overall justice acted as a mediator between the facets of justice and strain suggests that employees' reactions to individual justice events, which could be derived from a combination of procedural, distributive, or interactional experiences, exert their effects on strain indirectly through their impact on a global evaluation of justice. This finding is consistent with Lind's (2001) Fairness Heuristic Theory, which postulates that a general fairness judgement is generated rapidly and automatically in response to justice events. Thus, individuals use whatever justice experiences they encounter to form or revise their overall fairness evaluation (Lind, 2001). The finding that overall fairness judgements could be related to employee attitudes and behaviours has been supported in previous studies involving organizational justice. Specifically, past research suggests that that overall justice judgements can exert an influence on important outcomes such as

perceived management support, job satisfaction, affective commitment, trust and intentions to turnover (Ambrose & Schminke, 2006; Jones & Martens, 2007) and serve as a cognitive shortcut used to resolve uncertainty in workplace interactions (Lind, 2001). Psychological strain is not strictly an attitude or behaviour; rather it could reflect a combination of attitudes, behaviours and psychological states (Francis & Barling, 2005; Pratt & Barling, 1988; Sykes & Eden, 1985). The results of my study offer support to the idea that it may not be the specific type of injustice encountered, but rather a global judgment about workplace fairness that leads to the experience of strain.

Hypothesis five asserted that individuals who experience higher levels of strain would be more likely to report intentions to leave the organization. This hypothesis was fully supported and is consistent with previous work (see Kelloway & Day, 2005; Podaskoff, et al., 2007; Rush, et al., 1995). My final hypothesis was that the relationship between perceptions of overall justice and intentions to quit would be mediated by strain. Again, in support of my hypothesis, strain acted as a mediator between overall justice and turnover intentions. That is, overall feelings about fairness at work were associated with strain in the form of depression and anxiety, which may incite individuals to want to exit the organization. One potential explanation for this relationship could be that when individuals determine they are not treated fairly in their workplace, they recognize that are not a valued member of the group (Lind & Tyler, 1988), which may lead to negative psychological states (Elovainio et al., 2001). In an effort to lessen such psychological states, individuals may consider exiting the organization.

My hypothesized model (i.e., in Figure 1) proposed overall justice as a mediator between the facets of justice and strain and strain as a mediator between overall justice

and intentions to turnover. This model fit the data well; however, the best fitting model was one of partial mediation that included an additional direct path between procedural justice and intentions to turnover. The addition of this path suggests that overall justice did not fully explain the link between procedural justice and intentions to turnover. While model respecification is a process heavily frowned upon (Kelloway, 1998), the inclusion of this path is supported by a previous independent study, as it was also found to be significant in Ambrose and Schminke's (2006)¹¹ research. The possible explanation for why procedural justice was only partially mediated through overall justice is not clear. The link between procedural justice and turnover makes sense empirically (e.g., meta-analysis confirms the relationship between procedural justice and intent to turnover; Colquitt, et al., 2001). However, the question remains, why do overall justice evaluations fail to account for the relationship between procedural justice and intentions to turnover? One potential explanation is that some rules and regulations in the Canadian Forces originate at a level well above an individual unit. It could be that intentions to turnover are partially formed in response to organizational variables (such as procedures), which employees may not necessarily attribute to their immediate work unit. Given that the wording of my overall justice scale focused on the day-to-day work environment, it may not have captured fully procedures that are seen to come from higher levels of the organization. This notion would be supported by what Colquitt et al. (2001) termed the agent-system model. The agent-system model refers to Bies and Moag's (1986) suggestion that interpersonal interactions were more related to agent-referenced (i.e., supervisor) outcomes while procedural justice experiences were more related to system-referenced (i.e., organizational) outcomes, of which intentions to turnover is one.

Moreover, according to the instrumental model of justice, procedural justice could impact outcomes not just because of its impact on overall fairness judgments but also because unfair procedures are likely to lead to unfavourable outcomes over the long term (Lind & Tyler, 1988). Indeed, research evidence suggests that outcome favourability and outcome fairness are distinct constructs (Van den Bos, Lind, Vermut & Wilke, 1997). As such, in addition to impacting intent to turnover through its effect on global evaluations of fairness at work, procedural injustice could lead people to want to exit the organization because they feel that, over the long term, their outcomes may not be favourable. Future research could examine this possibility by including a measure of outcome favourability in the research design.

Implications of Findings

The results of the tests of measurement invariance between two separate units of the Canadian Forces offers support to the generalizability of my findings to the military context. The theoretical support for all hypothesized relationships suggests that these findings may also generalize to other, non-military, populations as well; however, future studies would need to be conducted to ensure this conclusion.

Theoretical Implications. The results of the current study support the notion proposed by Ambrose and Schminke (2006) that justice research (like other perceptual constructs such as job satisfaction) could benefit from the consideration of both global conceptualizations and specific dimensions. The measurement of global evaluations as well as specific facets of justice could be relevant to future research in several ways. On the one hand, the factor structure of my data suggests that different foci and different types of justice are important and distinguishable for employees, which supports

consideration of organizational justice at the facet level. For example, I found that interpersonal justice from coworkers and supervisors each contribute uniquely to overall justice judgments. In line with multi-foci justice, it is possible that interpersonal justice from coworkers may produce differential organizational outcomes than interpersonal justice from supervisors (e.g., organizational commitment, job satisfaction). Similarly, other foci, such as customers, may also contribute in an important way to justice evaluations and organizational outcomes.

On the other hand, although the results of the CFA support the notion that the justice elements are distinguishable for employees, the results of the path analysis suggest that individual justice judgements may not be as important as the cumulative impact of justice events when it comes to organizational outcomes such as strain. That is, the individual facets appear to exert their effects on strain through their impact on a global evaluation of fairness in the workplace. Thus, using a global measure of justice may provide a more parsimonious approach to the study of justice and may capture justice processes in organizations more clearly. However, this presents a potential challenge in that assessing only overall justice could make it more difficult to address the specific aspects of injustice that may be lowering overall justice perceptions. Thus, until more is known about overall justice from a diagnostic standpoint, it would be appropriate for future research to assess both overall justice and the facets of justice.

Practical Implications. The potential implications of the current findings to the military and organizational context relate to what many organizations see as the bottom line. Understanding that justice evaluations are linked to both strain and intentions to turnover can encourage organizations to maintain high levels of justice. Considering the

potential costs associated with providing medical treatment and assistance to individuals who experience psychological strain, as well as the value of reduced attrition, investing resources into maintaining justice in the workplace is warranted. Skarlicki and Latham (1996, 1997), for example, found that fair interpersonal treatment and the fair implementation of procedures could be taught to organizational leaders. The results of my study provide some evidence that organizations may want to extend training regarding positive interpersonal interactions beyond the supervisor and subordinate relationship. Training programs encouraging high quality interpersonal treatment between peers and coworkers may contribute to positive work environments that are perceived to be fair, which could lead to beneficial employee and organizational outcomes.

As noted earlier, from a diagnostic standpoint, organizations that examine overall justice exclusively may not obtain insight into the type and source of perceptions of unfairness. Thus, specific organizational changes or training to target injustice in the work environment may be more difficult to implement if organizations rely solely on global measures of constructs. To be most effective, organizational training programs aimed at improving justice in the workplace must be comprehensive and address the concepts on which the justice facets are based (i.e., standards of distributive, procedural, interpersonal and informational justice). In an organization, certain aspects of justice may be rated negatively and perceived as problematic, whereas others are assessed positively. Thus, knowing about specific facets may help to target sources of unfairness more directly.

Limitations

There are several limitations of the present study that could be addressed in future research. Because of the cross-sectional correlational design of this study, the postulated relationships between justice, strain, and intentions to turnover should not be interpreted causally. Longitudinal, experimental, or quasi-experimental designs would be recommended to confirm the causal relationships among variables (Cozby, 2004).

Another limitation concerns the strong intercorrelations among some of the justice facets, which may suggest redundancy in the constructs. For example, the zero order correlation between interpersonal justice and informational justice in the combined sample was $r = .73$, indicating that the interpersonal and informational justice constructs share approximately 53% variance. However, the confirmatory factor analyses across both units support the six-factor model over the five-factor model that combines these two highly correlated justice constructs, suggesting that there is indeed utility in distinguishing interpersonal and information justice at least in the current study. In future research however, it is possible that these constructs may not be distinguishable.

Another potential limitation of my study concerns how I examined the factor structure of overall justice. I examined a number of possible factor structures in a confirmatory factor analysis in an attempt to explain accurately the relationships among the justice facets and overall justice. However, a potential limitation is that I only examined models in which overall justice was considered its own factor as there was no theoretical rationale to consider overall justice in any other manner. Indeed, the results of my analysis supported the notion that overall justice is a separate factor from the individual facets. The possibility exists, however, that the best fitting six-factor

measurement model may have, in part, resulted from the distinctions between the facets of justice rather than from the relationships that the facets have with overall justice.

One potential model that would consider overall justice and the facets simultaneously is a one-factor model. Using the data from this study, I examined the fit of a one factor model of justice. The fit of this model was very poor,¹² possibly because the facets of justice have already been found to be distinct from each other (Colquitt, 2001; Colquitt et al., 2001).¹³ Another potential reason this model may not have fit the data well is that it represents the combination of a direct measure of justice (i.e., overall justice) as well as indirect measures of justice (e.g., the facets). Lind and Tyler (1988) drew a distinction between direct and indirect measures in the justice literature. Direct measures explicitly ask how fair events or interpersonal treatment are, whereas indirect measures assess the rules that foster a sense of fairness. Indirect measures offer a more descriptive rating of the characteristics of events or entities (Colquitt & Shaw, 2005). For this reason alone, there is a possibility that overall justice as a direct measure is unlikely to cluster with indirect measures of organizational justice. Future research could examine the structure of a six-factor model in which overall justice and all of the facets are assessed using direct measures. For the current study, I measured the justice facets using the most common and well-established scales, which are of the indirect variety (Colquitt & Shaw, 2005).

Another potential limitation of my study is that my results may reflect elements of reverse causality (e.g., that strain and intentions to turnover in fact cause individuals to perceive greater injustice). While the results of my study are consistent with the mediational processes hypothesized, actual causal order of the model cannot be

confirmed with correlational research designs. Future studies using experimental or longitudinal designs are needed to understand better the mediational processes at play. However, my results offer support to hypotheses that are rooted in theory (Lind, 2001).

Response bias effects could also be present in this study; that is, the individuals who chose to complete the Unit Morale Profile may differ in some way from those individuals who chose not to complete it. The response rates for Unit 1 and Unit 2 were approximately 34%, and 78%, respectively. The results of the tests of measurement invariance between the two separate units revealed that, despite the differences in response rates between the units, the pattern of results were equivalent. This finding lessens any concern regarding the somewhat low Unit 1 response rate.

In addition, all justice scales were positively worded, which could have resulted in acquiescence from respondents (Guilford, 1954). However, alternating the wording of my scales to include positive and negatively worded items could have also been problematic. Specifically, Chang (1995) challenged the idea of mixing positively and negatively worded items within the same scale on the grounds that negatively and positively worded items were not equivalent. Indeed, some justice researchers (e.g., Bies & Tripp, 2002) have argued that justice and injustice may represent independent, albeit related, constructs and thus should be measured separately.

Another limitation concerns the possibility of common method bias. In the current study, the data for justice, strain, and intentions to turnover were obtained from the same source (employee). All of the variables in the model are likely to share common method variance, which could inflate or deflate the actual relationships between the outcomes and their antecedents (Podsakoff et al., 2003). To account for the possibility of a single

common method factor, I controlled for the effects of an unmeasured latent methods factor in SEM (Podsakoff et al., 2003). Based on the results of the analysis, the overall pattern of significant relationships in my study was not affected by common method variance (i.e., all significant paths remained significant in the presence of the common method factor) suggesting that common method variance was not an explanation for my findings.

Future Research

Future research could build on the finding that interpersonal justice from coworkers is relevant to overall justice judgments and consider the possibility that other foci, such as customers, may also contribute to the formation of overall justice evaluations. Indeed, in customer service jobs, the treatment received from customers may have a particularly potent role to play in overall judgments of fairness at work. Additionally, and as alluded to earlier, future research could attempt to understand better the link between procedural justice and intentions to turnover. For example, measures of outcome favourability could be included to assess whether the direct link between procedural fairness and intentions to turnover is mediated through this construct.

In addition, future studies could consider the impact of overall justice in conjunction with other relevant organizational outcomes such as productivity, employee engagement, conflict, resistance to change and absenteeism. The possibility that overall justice acts as a moderator between organization variables also warrants further examination. For example, Fairness Heuristic Theory posits that individuals use fairness judgments to decide how to react to demands in long-standing relationships (Lind, 2001). According to Lind, overall fairness evaluations could serve to facilitate or hinder (i.e.,

moderate) organizational outcomes based on how they serve to regulate an employee's investment in various relationships (i.e., to ensure investments correspond with the level of fairness experienced).

Conclusion

In conclusion, this study provides theoretical and empirical support for the hypothesis that overall evaluations of justice in the workplace may act as a mediating mechanism through which individual justice elements (e.g., distributive, procedural or interpersonal) from different foci (i.e., supervisors, coworkers) contribute to the experience of strain and intentions to turnover. In addition, the establishment of co-worker justice evaluations as a contributor to overall justice impressions is important because it suggests that, to some extent, organizations that do nothing about coworkers' treatment of each other may risk strain outcomes in their employees. Continued investigation into the justice constructs will help to understand better the structure and impact of fairness in the workplace.

References

- Adams, J.S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 267-299). New York: Academic Press.
- Alexander, S., Sinclair, R.R., & Tetrick, L.E. (1995). The role of organizational justice in defining and maintaining the employment relationship. In L.E. Tetrick & J. Barling (Eds.), *Changing employment relations: Behavioral and social perspectives* (pp. 61-89). Washington, DC: American Psychological Association.
- Ambrose, M.L., & Arnaud, A. (2005). Distributive and procedural justice: Construct distinctiveness, construct interdependence, and overall justice. In J. Greenberg & J. Colquitt (Eds.), *The handbook of organizational justice* (pp. 59-84). Lawrence Erlbaum Associates, Mahwah: New Jersey.
- Ambrose, M.L. & Schminke, M. (2003). Organization structure as a moderator of the relationship between procedural justice, interactional justice, perceived organizational support, and supervisor trust. *Journal of Applied Psychology*, 88, 295-305.
- Ambrose, M.L. & Schminke, M. (2006). *The role of overall justice judgements in organizational justice research: A test of mediation*. Manuscript submitted for publication.
- Amick, B.C., McDonough, P., Chang, H., Rogers, W.H., Pieper, C.F. & Duncan, G. (2002). Relationship between all-cause mortality and cumulative working life course psychosocial and physical exposures in the United States labor market from 1968 to 1992. *Psychosomatic Medicine*, 64(3), 370-381.

- Bandalos, D. & Finney, S. (2001). Item parceling issues in structural equation modeling. In Marcoulides, G. & Schumacker (Eds). *New developments in structural equation modeling*. Lawrence Erlbaum Associates. Mahwah: New Jersey.
- Barling, J. (1990). *Employment, stress and family functioning*. New York: John Wiley & Sons.
- Beach, Martin, Blum & Roman (1993). Effects of marital and co-worker relationships on negative affect: Testing the central role of marriage. *The American Journal of Family Therapy*, 21(4), 313-323.
- Bhagat, R., McQuaid, S., Lindholm, H., & Segovis, J. (1985). Total life stress: A multi-method validation of the construct and its effects on organizationally valued outcomes and withdrawal behaviors. *Journal of Applied Psychology*, 70 (1), p. 202-214.
- Bies, R.J. (2001). Interactional (In) Justice: The sacred and the profane. In J. Greenberg, & R. Cropanzano (Eds). *Advances in Organizational Justice*. CA: Stanford University Press.
- Bies, R.J., & Moag, J.S. (1986). Interactional justice: Communication criteria of fairness. In R.J. Lewicki, B.H. Sheppard, & M. Bazerman (Eds.), *Research on negotiation in organizations*, (Vol 1; pp. 43-55). Greenwich, CT: JAI Press.
- Bies, R.J. & Tripp, T.M. (2002). Hot flashes, open wounds. In Gilliland, S.W., Steiner, D. & D. Skarlicki (Eds.), *Emerging perspectives on managing organizational justice*, (pp. 203-223). Greenwich, CT: IAP Press.
- Billings, A.G., & Moos, R.H. (1982). Stressful life events and symptoms: A longitudinal model. *Health Psychology*, 1, 99-117.

- Blader, S.L. & Tyler, T.R. (2003). What constitutes fairness in work settings? A four-component model of procedural justice. *Human Resource Management Review* (13) 1, pp. 107-126.
- Branscombe, N.R., Spears, R., Ellemers, N. & Doosje, B. (2002). Intragroup and intergroup evaluation effects on group behavior. *Personality and Social Psychology Bulletin*, 28: 744-753.
- Byrne, B. (2004). Testing for multigroup invariance using AMOS graphics: A road less travelled. *Structural Equation Modeling* 11(2), 272-300.
- Byrne, B. (2001). *Structural Equation Modeling with AMOS: Basic Concepts, Applications and Programming*. Lawrence Erlbaum Associates, Mahwah: NJ.
- Byrne, B. (1994). *Structural Equation Modeling with EQS and EQS/Windows: Basic Concepts, Applications and Programming*. Thousand Oaks, CA: Sage.
- Chang, L. (1995). Connotatively consistent and reversed connotatively inconsistent items are not fully equivalent: Generalizability study. *Educational and Psychological Measurement*, 55 (6), 991–997.
- Cohen, S., & Wills, T.A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98, 310–357.
- Colquitt, J.A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, 86, 386-400.
- Colquitt, J., Conlon, D. E., Wesson, M. J., Porter, C. O., & Ng, K. Y. (2001). Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology*, 86(3), 425-445.

- Colquitt, J.A., & Shaw, J.C. (2005). How should organizational justice be measured? In J. Greenberg & J. Colquitt (Eds.), *The handbook of organizational justice* (pp. 113-152). Lawrence Erlbaum Associates, Mahwah: New Jersey.
- Cooper, W.H. & Richardson, A.J. (1986). Unfair comparisons. *Journal of Applied Psychology*, 71(2), 179-184.
- Cozby, P.C. (2004). *Methods in behavioral research* (8th Ed.) McGraw-Hill, New York: NY.
- Cropanzano, R., Byrne, Z.S., Bobocel, D.R., & Rupp, D.E. (2001). Moral virtues, fairness heuristics, social entities, and other denizens of organizational justice. *Journal of Vocational Behavior*, 58, 164-209.
- Cropanzano, R., & Greenberg, J. (1997). Progress in organizational justice: Tunnelling through the maze. In C.L. Cooper & I.T. Robertson (Eds.), *International review of industrial and organizational psychology*, (Vol. 12; pp. 317-372). London: John Wiley & Sons.
- Currie, J.G. (2005). Attrition from the Canadian Forces Regular Force Component 2004/2005: Issues and Concerns. *Canadian Forces Director Military Employment Policy/Attrition/Retention Team*.
- Dailey, R.C., & Kirk, D.J. (1992). Distributive and procedural justice as antecedents of job dissatisfaction and intent to turnover. *Human Relations*, 45, 305-317.
- Donovan, M.A., Drasgow, F. & Munson, L.J. (1998). The perceptions of fair interpersonal treatment scale: Development and validation of a measure of interpersonal treatment in the workplace. *Journal of Applied Psychology*, 83(5), 683-692.

- Elovainio, M., Kivimäki, M., & Helkama, K. (2001). Organizational justice evaluations, job control, and occupational strain. *Journal of Applied Psychology, 86*, 418-424.
- Folger, R.G., & Cropanzano, R. (1998). *Organizational justice and human resource management*. Thousand Oaks, CA: Sage.
- Fox, S., Spector, P.E., & Miles, D. (2001). Counterproductive work behaviour in response to job stressors and organizational justice: Some mediator and moderator tests for autonomy and emotions. *Journal of Vocational Behavior, 59*, 291-309.
- Francis, L., & Barling, J. (2005). Organizational injustice and psychological strain. *Canadian Journal of Behavioural Science, 37*(4), 250-261.
- Greenberg, J. (2006). Losing sleep over organizational injustice: attenuating insomniac reactions to underpayment inequity with supervisory training in interactional justice. *Journal of Applied Psychology, 91*(1), 58-69.
- Greenberg, J. (1993). The social side of fairness: Interpersonal and informational causes of organizational justice. In R. Cropanzano (Ed.), *Justice in the workplace: Approaching fairness in human resource management* (pp. 79-103). Hillsdale, NJ: Erlbaum.
- Greenberg, J. (1987). A taxonomy of organizational justice theories. *Academy of Management Review, 12*, 9-22.
- Greenberg, J. (1990). Employee theft as a reaction to underpayment inequity. *Journal of Applied Psychology, 75*, 561-568.
- Hackman, J. R. (1992). Group influences on individuals in organizations. In Dunnette, M.D.; Hough, L.M., *Handbook of industrial and organizational psychology*, Vol. 3 (2nd ed.) pp. 199-267. Palo Alto, CA, US: Consulting Psychologists Press.

- Hauenstein, N.M.T., McGonigle, T., & Flinder, S.W. (2001). A meta-analysis of the relationship between procedural justice and distributive justice: Implications for justice research. *Employee Responsibilities and Rights Journal*, 13, 39-56.
- Hollenbeck, J.R., & Williams, C.R. (1986). Turnover functionality versus turnover frequency: A note on work attitudes and organizational effectiveness. *Journal of Applied Psychology*, 71(4), 606-611.
- Holmvall, C. & Sidhu (2007). Predicting customer service employees' job satisfaction and turnover intentions: The roles of customer interactional justice and interdependent self-construal. *Social Justice Research*. 20(4), 479-496.
- Hom, P.W., & Griffeth, R.W. (1995). *Employee turnover*. Cincinnati, OH: South-Western.
- Howell, D.C. (2002). *Statistical methods for psychology* (Fifth Edition). Pacific Grove, CA: Duxbury.
- Hu, L. & Bentler P.M. (1999). Cutoff criteria for fit indexes in covariance structure analyses: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6,1-55.
- Hulin, C.L. (1991). Adaptation, persistence and commitment in organizations. In M.D. Dunnette & L.M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd Ed.; Vol. 2; pp. 445-506). Palo Alto, CA: Consulting Psychologists Press.
- Jex, S.M., & Crossley, C.D. (2005). Organizational consequences. In: Barling, E.K. Kelloway, & M. Frone (Eds.), *Handbook of work stress* (pp. 575-599). Thousand Oaks, CA: Sage Publications.

- Jones, D.A., & Martens, M.L. (2007). The mediating role of overall fairness and the moderating role of trust certainty in justice-criteria relationships: Testing fundamental tenets of fairness heuristic theory.
- Judge, T.A., & Colquitt, J.A. (2004). Organizational justice and stress: The mediating role of work-family conflict. *Journal of Applied Psychology*, 89, 394-404.
- Kahn, R.L., & Byosiore, P. (1992). Stress in organizations: In M.D. Dunnette & L.M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol 3, pp. 571-650). Palo Alto, CA: Consulting Psychologists Press.
- Kelloway, E.K., & Day, A. (2005). Building healthy workplaces: What we know so far. *Canadian Journal of Behavioural Science*, 37(4), 223-235.
- Kelloway, E.K. (1998). *Using LISREL for structural equation modeling: A researcher's guide*. Thousand Oaks, CA: Sage.
- Kessler, R.C., Andrews, G., Colpe, L.J., Hiripi, E., Mroczek, D.K., Normand, S.L.T, Walters, E.E. & Zaslavsky, A.M. (2002). Short screening scales to monitor population prevalence's and trends in non-specific psychological distress. *Psychological Medicine*, 32 (6), p. 959-976.
- Kim, T.Y. & Leung, K. (2007). Forming and reacting to overall fairness: A cross-cultural comparison. *Organizational Behaviour and Human Decision Making Processes*, 104: 83-95.
- Kivimaki, M. & Lusa, S. (1994). Stress and cognitive performance of firefighters during smoke diving. *Stress Medicine*, 10, 63-68.
- Kline, R.B. (1998). *Principles and practices of structural equation modeling*. New York, NY: The Guilford Press.

- Konovsky, M.A., & Pugh, S.D. (1994). Citizenship behaviour and social exchange. *Academy of Management Journal*, 37, 656-669.
- Korunka, C., Vitouch, O. (1999). Effects of the implementation of IT on employees' strain and job satisfaction: A context-dependent approach. *Work & Stress*, 34, 341-363.
- Kray, L.J. & Lind, E.A. (2002). The injustices of others: Social reports and the integration of others' experiences in organizational justice judgements. *Organizational Behavior and Human Decision Processes*, 89, 906-924.
- Kristensen, T.S. (1996). Job stress and cardiovascular disease: A theoretical critical review. *Journal of Occupational Health Psychology*, 3, 246-260.
- Kuper, H., Singh-Manoux, A., Siegrist, J., & Marmot, M. (2002). When reciprocity fails: Effort-reward imbalance in relation to coronary heart disease and health functioning within the Whitehall II study. *Occupational Environmental Medicine*, 59, 777-784.
- Lavelle, J., Rupp, D. & Brockner, J. (2007). Taking a multifoci approach to the study of justice, social exchange and citizenship behavior: The target similarity model. *Journal of Management*, 33(6), 841-866.
- Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal, & coping*. New York: Springer Publishing Co.
- Lee, T.W. (1997). Employee turnover. In L.H. Peters, C.R. Greer, & S.A. Youngblood (Eds.), *The Blackwell encyclopaedic dictionary of human resource management* (pp. 97-100). Oxford: Blackwell.

- Leventhal, G.S. (1980). What should be done with equity theory? New approaches in the study of fairness in social relationships. In K. Gergen, M. Greenburg, & R. Willis (Eds.), *Social exchange: Advances in theory and research* (pp. 27-55). New York: Plenum.
- Lind, E.A. (2001). Fairness Heuristic Theory: Justice judgements as pivotal cognitions in organizational relations. In J. Greenberg, & R. Cropanzano (Eds). *Advances in Organizational Justice*. CA: Stanford University Press.
- Lind, E.A., & Tyler, T.R. (1988). *The social psychology of procedural justice*. New York: Plenum Press.
- Little, T.D., Cunningham, W.A., Shahar, G., & Widaman, K.F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, 9(2), 151-173.
- MacKenzie, S.B., Podsakoff, P.M. & Paine, J.B. (1999). Do citizenship behaviours matter more for managers than for salespeople. *Academy of Marketing Science Journal*, 27(4), 396-410.
- Maletesta, R.M. & Byrne, Z.S. (1997). *The impact of formal and interactional justice on organizational outcomes*. Paper presented at the annual conference of the Society for Industrial Organizational Psychology, St Louis, MO.
- Meade, A.W., Johnson, E.C. & Braddy, P.W. (2008). Power and sensitivity of alternative fit indices in tests of measurement invariance. *Journal of Applied Psychology* 93 (3) 568-592.

- Meade, A.W. & Kroustalis, C.M. (2006). Problems with item parcelling for confirmatory factor analytic tests of measurement invariance. *Organizational Research Methods*, 9(3), 369-402.
- Messick, D., Bloom, S., Boldizar, J., Samuelson, C. (1985). Why we are fairer than others. *Journal of Experimental Social Psychology*, 21, 480-500.
- Mikula, G. (1986). The experience of injustice: Toward a better understanding of its phenomenology. In H.W. Beirhoff, R.L. Cohen & J. Greenberg (Eds.), *Justice in interpersonal relations* (pp. 103–123). New York: Plenum Press.
- Mikula, G., Petri, B., & Tanzer, N. (1990). What people regard as unjust: Types and structures of everyday experiences of injustice. *European Journal of Social Psychology*, 20, 133-149.
- Milgram, N.A., Orenstein, R. & Zafir, E. (1989). Stressors, personal resources, and social supports in military performance during wartime. *Military Psychology*, 1(4), 185-199.
- Olkkonen, M.E. & Lipponen, J. (2004). Relationships between organizational justice, identification with organization and work unit, and group-related outcomes. *Organizational Behavior and Human Decision Processes*, 100, 202-215.
- Pfeffer, J., & Langton, N. (1993). The effects of wage dispersion on satisfaction, productivity, and working collaboratively: Evidence from college and university faculty. *Administrative Science Quarterly*, 38, 382-407.
- Podaskoff, N.P., Lepine, J.A., & Lepine, M.A. (2007). Differential Challenge Stressor-Hindrance Stressor relationships with job attitudes, turnover intentions, turnover,

- and withdrawal behavior: A meta-analysis. *Journal of Applied Psychology*, 92(2), 438-454.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J. & Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedy. *Journal of Applied Psychology*, 88(5), 879-903.
- Pratt, L.I., & Barling, J. (1988). Differentiating between daily events, acute and chronic stressors: A framework and its implications. In J.J. Hurrell, Jr., L.R. Murphy, S.L. Sauter, & Cooper (Eds.), *Occupational stress: Issues and developments in research* (pp. 41-53). New York: Taylor & Francis.
- Quick, J., Murphy, L. & Hurrell, J.(1992). (Eds.) *Stress and well-being at work*. Washington, DC: APA.
- Quick, J.C., Quick, J.D., Nelson, D.L., & Hurrell, Jr., J.J. (1997). *Preventive stress management in organizations*. Washington DC: APA Books.
- Rioli, L. & Savicki, V. (2006). Impact of fairness, leadership, and coping on strain, burnout, and turnover in organizational change. *International Journal of Stress Management*, 13(3), 351-377.
- Roberts, Coulson & Chonko (1999). Salesperson perceptions of equity and justice and their impact on organization commitment. *Journal of Marketing Theory and Practice*, 7(1), 1-16.
- Rupp, D.E., & Spencer, S. (2006). When customers lash out: The effects of customer interactional justice on emotional labor and the mediating role of discrete emotions. *Journal of Applied Psychology*, 91(4), 971-978.

- Rush, M.C., Schoel, W.A., & Barnard, S.M. (1995). Psychological resiliency in the public sector: "Hardiness" and pressure for change. *Journal of Vocational Behavior*, 46, 17-39.
- Satorra, A., & Bentler, P. M. (1988). Scaling corrections for chi-square statistics in covariance structure analysis. 1988 Proceedings of the Business and Economics Statistics Section of the American Statistical Association, 308-313.
- Schminke, M. & Ambrose, M.L. (2007). *An examination of overall justice judgements: Are they different from specific justice judgments and does it matter?* Manuscript submitted for publication.
- Skarlicki, D.P. & Folger, R. (1997). Retaliation in the workplace: The roles of distributive, procedural, and interactional justice. *Journal of Applied Psychology*, 82, 434-443.
- Skarlicki, D.P. & Latham, G.P. (1996). Increasing citizenship behavior within a labor union: A test of organizational justice theory. *Journal of Applied Psychology* 81, 161-169.
- Skarlicki, D.P. & Latham, G.P. (1997). Leadership training in organizational justice to increase citizenship behavior within a labor union: A replication. *Personnel Psychology*, 50, 617-633.
- Singer, J. E. & Davidson, L. M. (1986). Specificity and stress research. In M. H. Appley & R. Trumbull (Eds.), *Physiological, psychological, and social perspectives* (pp.47-61). New York: Plenum.
- Sykes, I.J. & Eden, D. (1985). Transitional stress, social support and psychological strain. *Journal of Occupational Behavior*, 6(4), 293-298.

Tabachnick, B.G. & Fidell, L.S. (2006). *Using Multivariate Statistics*. Boston: Pearson.

Tepper, B.J. (2000). Consequences of abusive supervision. *Academy of Management Journal*, 43, 176-190.

Tepper, B.J. (2001). Health consequences of organizational injustice: Tests of main and interactive effects. *Organizational Behavior and Human Decision Processes*, 86, 197-215.

Tett, R.P. & Meyer, J.P. (1993). Job satisfaction, organizational commitment, turnover intention and turnover: Path analyses based on meta-analytic finding. *Personnel Psychology*, 46, 259-293.

Vahtera, J., Kivimäki, M., Pentti, J., & Theorell, T. (2000). Effect of change in the psychosocial work environment on sickness absence: A seven year follow up of initially healthy employees. *Journal of Epidemiological Community Health*, 54, 484-493.

Van den Bos, K., Lind, E.A., Vermut, R. & Wilke, H.A.M. (1997). How do I judge my outcome when I do not know the outcome of others? The psychology of the fair process effect. *Journal of Personality and Social Psychology*, 72(5), 1034-1046.

Vermunt, R., & Steensma, H. (2003). Physiological relaxation: Stress reduction through fair treatment. *Social Justice Research*, 16, 135-150.

Wanberg, C.R. and Banas, J.T. (2000). Predictors and outcomes of openness to changes in reorganizing the workplace. *Journal of Applied Social Psychology*, 85(1), 132-142.

Appendix A

Justice Measure Items

Colquitt (2001)

5-point Likert type scale; 1 (to a very small extent) to 5 (to a very large extent).

Distributive Items:

The following items refer to the outcomes (e.g., pay, promotions) you receive at work. To what extent:

1. Do your outcomes reflect the effort you have put into your work?
2. Are your outcomes appropriate for the work you have completed?
3. Do your outcomes reflect what you have contributed?
4. Are your outcomes justified, given your performance?

Procedural Items:

The following items refer to the procedures used to arrive at your outcomes (e.g., pay, promotions). To what extent:

1. Are you able to express your views and feelings during decision-making procedures?
2. Do you have influence over the outcomes arrived at by decision-making procedures?
3. Are decision-making procedures applied consistently?
4. Are decision-making procedures free of bias?
5. Are decision-making procedures based on accurate information?
6. Are you able to appeal the outcomes arrived at by decision-making procedures?
7. Do decision-making procedures uphold ethical and moral standards?

Interpersonal Justice:

The following items refer to your supervisor. To what extent:

1. Does your supervisor treat you in a polite manner?
2. Does your supervisor treat you with dignity?
3. Does your supervisor treat you with respect?
4. Does your supervisor refrain from improper remarks or comments?

Informational Justice:

The following items refer to your supervisor. To what extent:

1. Is your supervisor candid in his/her communications with you?
2. Does your supervisor explain decision-making procedures thoroughly?
3. Are your supervisor's explanations regarding decision-making procedures reasonable?
4. Does your supervisor communicate details (e.g., about decisions and procedures) in a timely manner?
5. Does your supervisor tailor his/her communication to your specific needs?

Co-worker Interpersonal Justice items:

Modified from Colquitt (2001)

5-point Likert type scale; 1 (to a very small extent) to 5 (to a very large extent).

The following items refer to your coworkers. To what extent:

1. Do your coworkers treat you in a polite manner?
2. Do your coworkers treat you with dignity?
3. Do your coworkers treat you with respect?
4. Do your coworkers refrain from improper remarks or comments?

Overall Justice items:

Modified from Ambrose and Schminke (2006)

5-point Likert type scale; 1 (strongly disagree) to 5 (strongly agree).

The following questions refer to how fair you think your workplace is overall.

1. Overall, I'm treated fairly at work.
2. In general, I can count on people at work to treat me fairly.
3. In general, the treatment I receive around here is fair.
4. Usually, this is a fair place to work.
5. In general, employees are treated fairly in this workplace.
6. Most of the people who work here would say they are treated fairly.

Kessler Psychological Distress Scale (K10) items:

Kessler, et al. (2002).

5-point Likert type scale ranging from 1 (none of the time) to 5 (all of the time).

In the last four weeks:

1. Did you feel tired-out for no good reason?
2. Did you feel nervous?
3. Did you feel so nervous that nothing could calm you down?
4. Did you feel hopeless?
5. Did you feel restless or fidgety?
6. Did you feel so restless you could not sit still?
7. Did you feel depressed?
8. Did you feel that everything was an effort?

9. Did you feel so sad that nothing could cheer you up?
10. Did you feel worthless?

Intentions to Turnover items

From the Unit Morale Profile

5-point Likert type scale 1 (completely disagree) to 5 (completely agree)

This section asks you to describe your Canadian Forces career intentions. Using the 5-point scale below, please indicate your level of agreement with each of the following statements.

1. I intend to stay with the Canadian Forces as long as I can.
2. I intend to leave the Canadian Forces as soon as I finish my current Terms of Service.
3. I intend to leave the Canadian Forces as soon as a civilian job becomes available.
4. I intend to leave the Canadian Forces as soon as I qualify for a pension.
5. I intend to leave the Canadian Forces within the next two years.

Footnotes

¹The first four of Ambrose and Schminke's (2006) six-item scale were worded with the organization as the entity. In addition, the lead in to their scale was "The following questions refer to how fair you think your company is overall." As a result, respondents may have been primed to think of the organization as the entity when responding to questions regarding personal justice experiences.

² The low response rate for Unit 1 was attributed to a similar survey being administered shortly prior to the UMP.

³ The scale alphas presented are those from the final combined data set, which included the English survey respondents from Unit 1 and Unit 2. The scale alphas for each unit individually are presented in Tables 3 and 4.

⁴ I adjusted Schminke and Ambrose's (2006) Likert type scale from 1-7, (strongly agree to strongly disagree) to 1-5, (strongly disagree to strongly agree) to match the order (e.g., disagree to agree) and numbering of Colquitt's justice scales based on the recommendations of Cooper and Richardson (1986).

⁵ Four items from the Unit Morale Profile Career Intentions Scale were not utilized because they asked questions about academic upgrading, leaving the unit specifically, and intentions to compete for programs within the military.

⁶ In the combined sample, interpersonal Justice, interpersonal justice from coworkers, overall justice and the K10 all displayed zskew scores above 3.29, which could be considered highly skewed. The zskew scores ranged from 4.0 to 6.5. To address this issue, I used robust statistics in CFA and SEM analyses whenever possible (Satorra & Bentler, 1988).

⁷ As a point of comparison, for the eight-factor model, at the item level χ^2 (917, N = 218) = 1760.351, $p < .001$; the fit indices were as follows: SRMR was .058, the CFI was .909, and the RMSEA was .065.

⁸ The correlations among the justice facets are not included on the path diagrams for clarity of the image. However, they are virtually identical to those presented in the eight-factor measurement model.

⁹ I also modeled the common method factor on the path model using items versus parcels. All items were loaded on their respective factor as well as on the common method factor. The common method factor was orthogonal to the eight existing factors in the study. The results were consistent with those using item parcels; all paths remained significant in the presence of the common method factor.

¹⁰ Although the informational justice variable was not positively linked to overall justice judgments, there is no evidence that it was acting as a suppressor variable. Howell (2001) explains that a variable must be significant in the opposite direction to act as a suppressor.

¹¹ This path was significant in a partially mediated model tested by Ambrose & Schminke (2006). However, their final model did not include this path because chi-square difference tests supported the fully mediated model.

¹² SRMR was .117, the CFI was .531, and the RMSEA was .197

¹³ As an additional test of the distinguishability of the overall justice construct, I conducted an exploratory factor analysis (using principal axis factoring and varimax rotation) on all of the justice items (facets and overall justice). In this analysis, overall

justice separated onto its own factor, providing further support that it is a separate construct from the justice facets.

Table 1

Fit Indices for the Competing Measurement Models - Unit 1

Model	χ^2	df	χ^2_{diff}	Δdf	SRMR	CFI	RMSEA
1. Two-component model (Facets Combined and Overall Justice)	1440.01*	404	873.43*	14	.129	.582	.163
2. Four-component model (Multifoci Justice: Organization (PJ/DJ), Supervisor (INTJ/INFJ), Coworkers, Overall Justice)	874.99*	399	308.41*	9	.086	.808	.111
3. Five-component model (Combined Interpersonal Co-worker/Supervisor)	830.67*	395	264.09*	5	.104	.824	.107
4. Five-component model (Combined Interpersonal and Informational into Interactional Justice)	712.58*	395	146.00*	5	.067	.872	.092
5. Six-component model (Five Facets and Overall Justice)	566.58*	390			.064	.929	.069
6. Eight-component model (Six-factor Justice and Strain and Intentions to Turnover)	1511.64*	917			.081	.828	.083

Note. Models 2, 3, and 4 are nested within the six-component model, not within the other models. Model 1 is nested within all justice measurement models.

$N = 97$ for justice-only measurement models, $N = 95$ for eight-component model, $*p < .01$.

Table 2

Fit Indices for the Competing Measurement Models - Unit 2

Model	χ^2	df	χ^2_{diff}	Δdf	SRMR	CFI	RMSEA
1. Two-component model (Facets Combined and Overall Justice)	2505.21*	404	1176.74*	14	.112	.586	.205
2. Four-component model (Multifoci Justice: Organization (PJ/DJ), Supervisor (INTJ/INFJ), Coworkers, Overall Justice)	1398.69*	399	670.22*	9	.088	.803	.142
3. Five-component model (Combined Interpersonal Co-worker/Supervisor)	1423.03*	395	694.56*	5	.160	.797	.145
4. Five-component model (Combined Interpersonal and Informational into Interactional Justice)	1061.03*	395	332.56*	5	.078	.869	.117
5. Six-component model (Five Facets and Overall Justice)	728.47*	390			.049	.933	.084
6. Eight-component model (Six-factor Justice and Strain and Intentions to Turnover)	1621.60*	917			.060	.889	.079

Note. Models 2, 3, and 4 are nested within the six-component model, not within the other models. Model 1 is nested within all other justice measurement models.

N = 125 for justice-only measurement models, *N* = 123 for eight-component model, **p* < .01.

Table 3

Descriptive Statistics for the Justice Facet, Co-worker Justice, Overall Justice, Strain and Intentions to Turnover Scales - Unit 1

Variable	M	SD	1	2	3	4	5	6	7	8
1. Distributive Justice	2.85	.98	(.94)							
2. Procedural Justice	2.80	.87	.64	(.91)						
3. Interpersonal Justice	3.76	.90	.38	.49	(.90)					
4. Informational Justice	3.31	.94	.45	.59	.75	(.92)				
5. Co-worker Justice	3.69	.71	.23	.33	.35	.20	(.89)			
6. Overall Justice	3.24	.83	.68	.61	.46	.47	.34	(.92)		
7. Strain	2.13	.82	-.43	-.33	-.30	-.29	-.23	-.53	(.92)	
8. Intentions to Turnover	2.76	.89	-.28	-.34	-.26	-.29	-.23	-.39	.38	(.77)

Note. Reliabilities are on the diagonal in parentheses.

All scales were measured with a 1-5 Likert-type scale.

All correlations are significant at $p < .01$, two-tailed, $N = 95$.

Table 4

Descriptive Statistics for the Justice Facet, Co-worker Justice, Overall Justice, Strain and Intentions to Turnover Scales - Unit 2

Variable	M	SD	1	2	3	4	5	6	7	8
1. Distributive Justice	3.23	1.06	(.96)							
2. Procedural Justice	3.05	1.00	.64	(.94)						
3. Interpersonal Justice	4.22	.94	.50	.56	(.95)					
4. Informational Justice	3.55	1.07	.48	.65	.72	(.95)				
5. Co-worker Justice	4.21	.80	.39	.53	.48	.42	(.95)			
6. Overall Justice	3.87	.96	.60	.72	.66	.57	.58	(.98)		
7. Strain	1.70	.71	-.27	-.32	-.25	-.19	-.21	-.40	(.93)	
8. Intentions to Turnover	2.66	.99	-.21	-.31	-.19	-.31	-.19	-.19	.28	(.80)

Note. Reliabilities are on the diagonal in parentheses.

All scales were measured with a 1-5 Likert-type scale.

All correlations are significant at $p < .01$, two-tailed, $N = 123$.

Table 5

Fit Indices for Invariance Testing Between Unit 1 and Unit 2

Model	χ^2	df	χ^2_{diff}	Δdf	SRMR	CFI	RMSEA
1. Six-factor unconstrained	1295.05*	780			.057	.932	.055
2. Six-factor constrained	1349.50*	825	54.45*	45	.121	.931	.054
3. Eight-factor unconstrained	3133.25*	1834			.072	.868	.057
4. Eight-factor constrained	3217.79*	1907	84.54*	73	.106	.867	.056

Note. For justice measurement models Unit 1 $N = 97$ and Unit 2 $N = 125$. For the eight-factor models Unit 1 $N = 95$ and Unit 2 $N = 123$, * $p < .05$.

Table 6

Fit Indices for the Competing Measurement Models – Combined Sample

Model	χ^2	df	χ^2_{diff}	Δdf	SRMR	CFI (Robust)	RMSEA (Robust)
1. Two-component model (Facets and Overall Justice)	3214.13*	404	2438.75*	14	.112	.630	.152
2. Four-component model (Multifoci Justice: Organization (PJ/DJ), Supervisor (INTJ/INFJ), Coworkers, Overall Justice)	1713.71*	399	938.33*	9	.075	.815	.108
3. Five-component model (Combined Interpersonal Co-worker/Supervisor)	1652.47*	395	877.10*	5	.108	.810	.105
4. Five-component model (Combined Interpersonal and Informational into Interactional Justice)	1234.55*	395	459.17*	5	.062	.885	.086
5. Six-component model (Five Facets and Overall Justice)	775.37*	390			.048	.953	.055
6. Eight-component model (6-factor Justice and Strain and Intentions to Turnover)	203.44*	124			.032	.981	.047

Note. Models 2, 3, and 4 are nested within the six-component model, not within the other models. Model 1 is nested within all justice measurement models $N = 222$. The eight-component model was measured after item parceling, $N = 218$, $*p < .05$.

Table 7

Descriptive Statistics for the Justice Facet, Co-worker Justice, Overall Justice, Strain and Intentions to Turnover Scales – Combined Sample

Variable	M	SD	1	2	3	4	5	6	7	8
1. Distributive Justice	3.08	1.04	(.95)							
2. Procedural Justice	2.94	.95	.65	(.92)						
3. Interpersonal Justice	4.02	.95	.49	.54	(.93)					
4. Informational Justice	3.44	1.02	.49	.64	.73	(.93)				
5. Co-worker Justice	3.98	.80	.38	.47	.47	.35	(.93)			
6. Overall Justice	3.60	.96	.65	.68	.61	.54	.55	(.96)		
7. Strain	1.89	.79	-.38	-.34	-.32	-.25	-.29	-.50	(.92)	
8. Intentions to Turnover	2.71	.95	-.25	-.32	-.22	-.31	-.21	-.27	.32	(.77)

Note: Reliabilities are on the diagonal in parentheses.

All scales were measured with a 1-5 Likert-type scale.

All correlations are significant at $p < .01$, two-tailed, $N = 218$.

Table 8

Item Parcel Composition

Construct	Parcel	Items
Distributive Justice	Parcel 1	Do your outcomes reflect what you have contributed?
		Are your outcomes justified, given your performance?
	Parcel 2	Are your outcomes appropriate for the work you have completed?
		Do your outcomes reflect the effort you have put into your work?
Procedural Justice	Parcel 1	Are decision-making procedures applied consistently?
		Do decision-making procedures uphold ethical and moral standards?
		Are you able to appeal the outcomes arrived at by decision-making procedures?
	Parcel 2	Do you have influence over the outcomes arrived at by decision-making procedures?
Interpersonal Justice		Are you able to express your views and feelings during decision-making procedures?
	Parcel 3	Are decision-making procedures based on accurate information?
		Are decision-making procedures free of bias?
	Parcel 1	Does your supervisor treat you with dignity?
		Does your supervisor refrain from improper remarks or comments?
	Parcel 2	Does your supervisor treat you in a polite manner?
Informational Justice		Does your supervisor treat you with respect?
	Parcel 1	Does your supervisor explain decision-making procedures thoroughly?
		Does your supervisor tailor his/her communication to your specific needs?
		Is your supervisor candid in his/her communications with you?
	Parcel 2	Are your supervisor's explanations regarding decision-making procedures reasonable?
		Does your supervisor communicate details (e.g., about decisions and procedures) in a timely manner?

Construct	Parcel	Items
Co-worker Justice	Parcel 1	Do your coworkers treat you with dignity?
		Do your coworkers refrain from improper remarks or comments?
	Parcel 2	Do your coworkers treat you with respect?
		Do your coworkers treat you in a polite manner?
Overall Justice	Parcel 1	In general, employees are treated fairly in this workplace.
		Most of the people who work here would say they are treated fairly.
	Parcel 2	In general, I can count on people at work to treat me fairly.
		Overall, I'm treated fairly at work.
	Parcel 3	In general, the treatment I receive around here is fair.
Strain	Parcel 1	Usually, this is a fair place to work.
		Did you feel worthless?
		Did you feel tired-out for no good reason?
		Did you feel so restless you could not sit still?
	Parcel 2	Did you feel nervous?
		Did you feel depressed?
		Did you feel that everything was an effort?
		Did you feel restless or fidgety?
	Parcel 3	Did you feel so sad that nothing could cheer you up?
		Did you feel hopeless?
		Did you feel so nervous that nothing could calm you down?
		I intend to stay with the CF as long as I can. (Reverse coded)
Intentions to Turnover	Parcel 1	I intend to leave the CF as soon as I qualify for a pension.
		I intend to leave the CF within the next two years.
		I intend to leave the CF as soon as I finish my current Terms of Service.
		I intend to leave the CF as soon as a civilian job becomes available.
	Parcel 2	

Table 9

Fit Indices for the Competing Path Models

Path Model	χ^2	df	χ^2_{diff}	Δdf	SRMR	CFI (Robust)	RMSEA (Robust)
1. Full Mediation	219.33*	135			.058	.981	.046
2. Partial Mediation (1 additional path - Procedural Justice to Intentions to Turnover)	208.94*	134	10.39*	1	.035	.984	.042
3. Partial Mediation (11 additional paths from the facets to the two outcome measures)	203.44*	124	15.89	11	.032	.981	.047

Note. All Path Models are nested.
*indicates significance at $p < .05$, $N = 218$.

Table 10
Comparison of Paths in the Presence Versus Absence of the Common Method Factor

Path Model	Paths to Overall Justice from					Path to Strain from		Paths to Intent to Turnover from	
	Distributive Justice	Procedural Justice	Interpersonal Justice	Informational Justice	Co-worker Justice	Overall Justice	Strain	Procedural Justice	
1. Partially mediated path model (1 additional path) without Common Method Factor Modeled	.283*	.336*	.280*	-.112	.195*	-.516*	.300*	-.263*	
2. Partially mediated path model (1 additional path) With Common Method Factor Modeled	.279*	.340*	.285*	-.115	.193*	-.522*	.303*	-.259*	

Note. *indicates significance at $p < .05$, $N = 218$.

Figure Captions

Figure 1. Proposed model of Justice, Strain, and Intentions to Turnover.

Figure 2. Unit 1 six-component measurement model.

All correlations are $p < .05$, $N = 97$, SRMR = .064, CFI = .929, RMSEA = .069

Figure 3. Unit 2 six-component measurement model.

All correlations are $p < .05$, $N = 125$, SRMR = .049, CFI = .933, RMSEA = .084

Figure 4. Unit 1 eight-component measurement model.

All correlations are $p < .05$, $N = 95$, SRMR = .081, CFI = .828, RMSEA = .083

Figure 5. Unit 2 eight-component measurement model.

All correlations are $p < .05$, $N = 123$, SRMR = .060, CFI = .889, RMSEA = .079

Figure 6. Combined sample six-component measurement model.

All correlations are $p < .05$, $N = 222$, SRMR = .048, CFI = .953, RMSEA = .055

Figure 7. Combined sample eight-component measurement model.

Item parcel breakdown is presented in Table 8.

All correlations are $p < .05$, $N = 218$, SRMR = .032, CFI = .981, RMSEA = .047

Figure 8. Fully mediated path model.

*indicates significant path. All path values represent standardized estimates.

R² values = 1 - the squared disturbance, SRMR = .057, CFI = .983, RMSEA = .043

Figure 9. Partially mediated path model (11 additional paths).

*indicates significant path. All path values represent standardized estimates.

R² values = 1 - the squared disturbance, SRMR = .032, CFI = .983, RMSEA = .044

Figure 10. Partially mediated path model (1 additional path).

*indicates significant path. All path values represent standardized estimates.

R² values = 1 - the squared disturbance, SRMR = .035, CFI = .986, RMSEA = .039

Figure 11. Partially mediated path model with common method factor.

*indicates significant path. All path values represent standardized estimates.

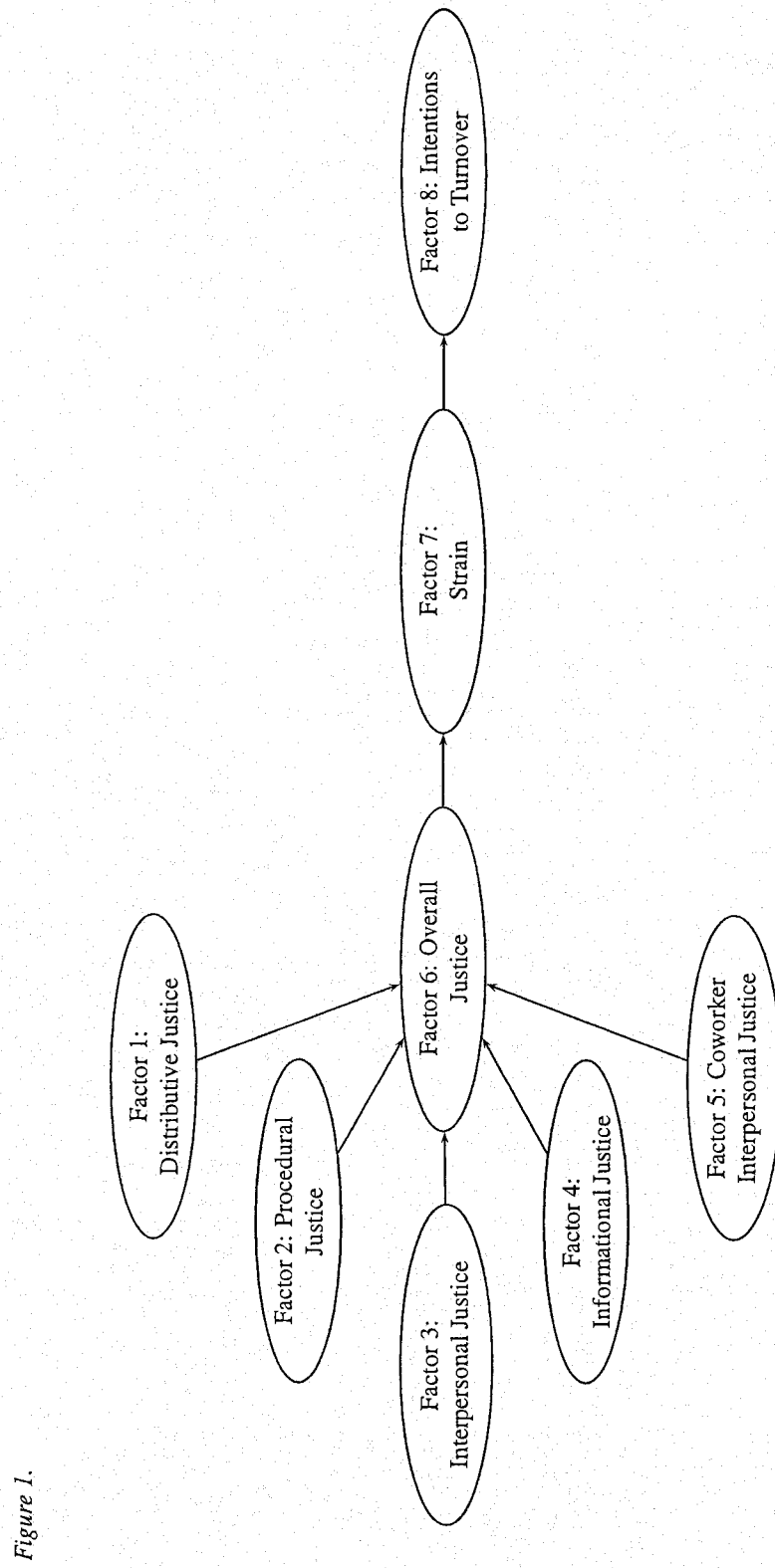


Figure 2.

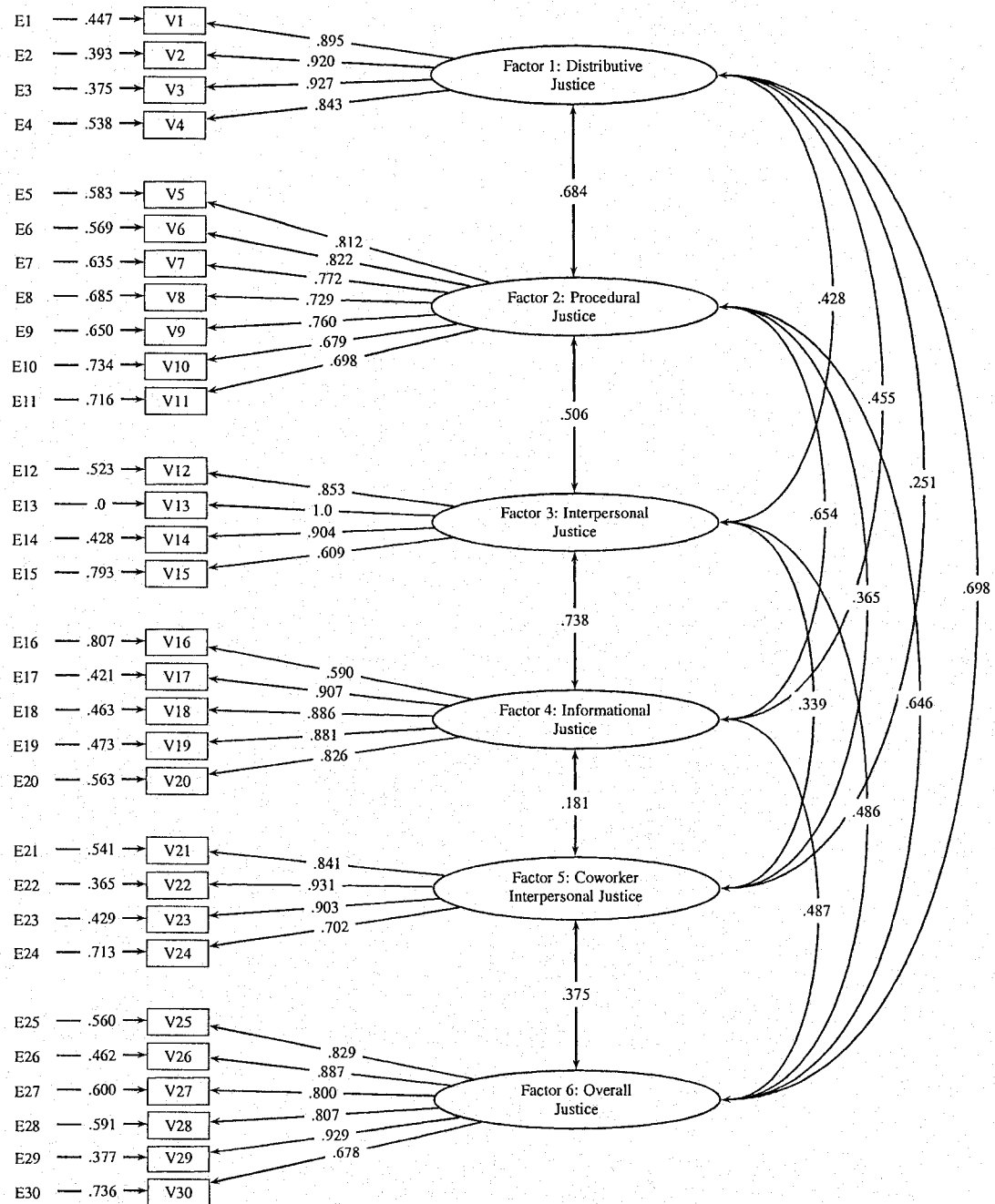


Figure 3.

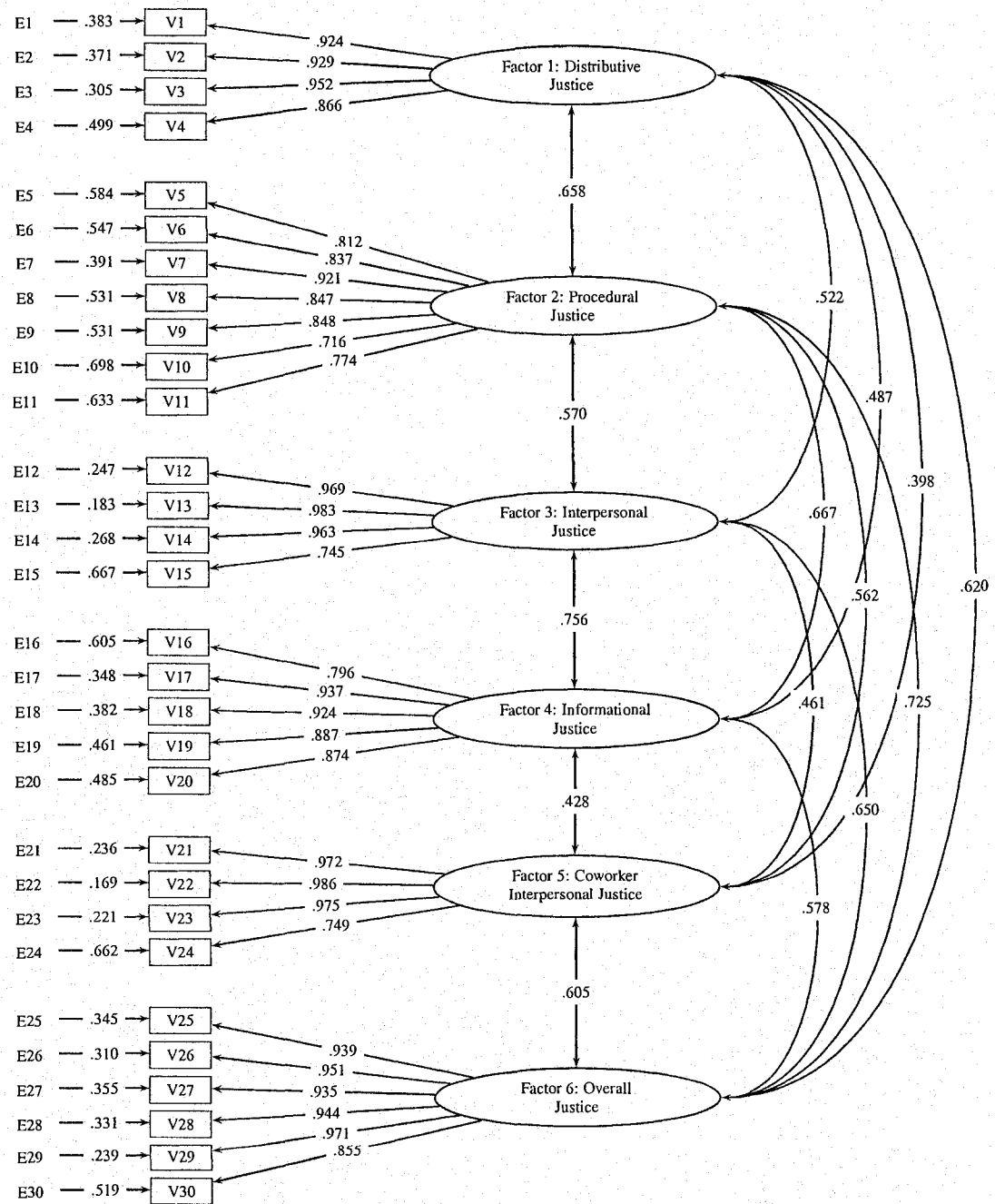


Figure 4.

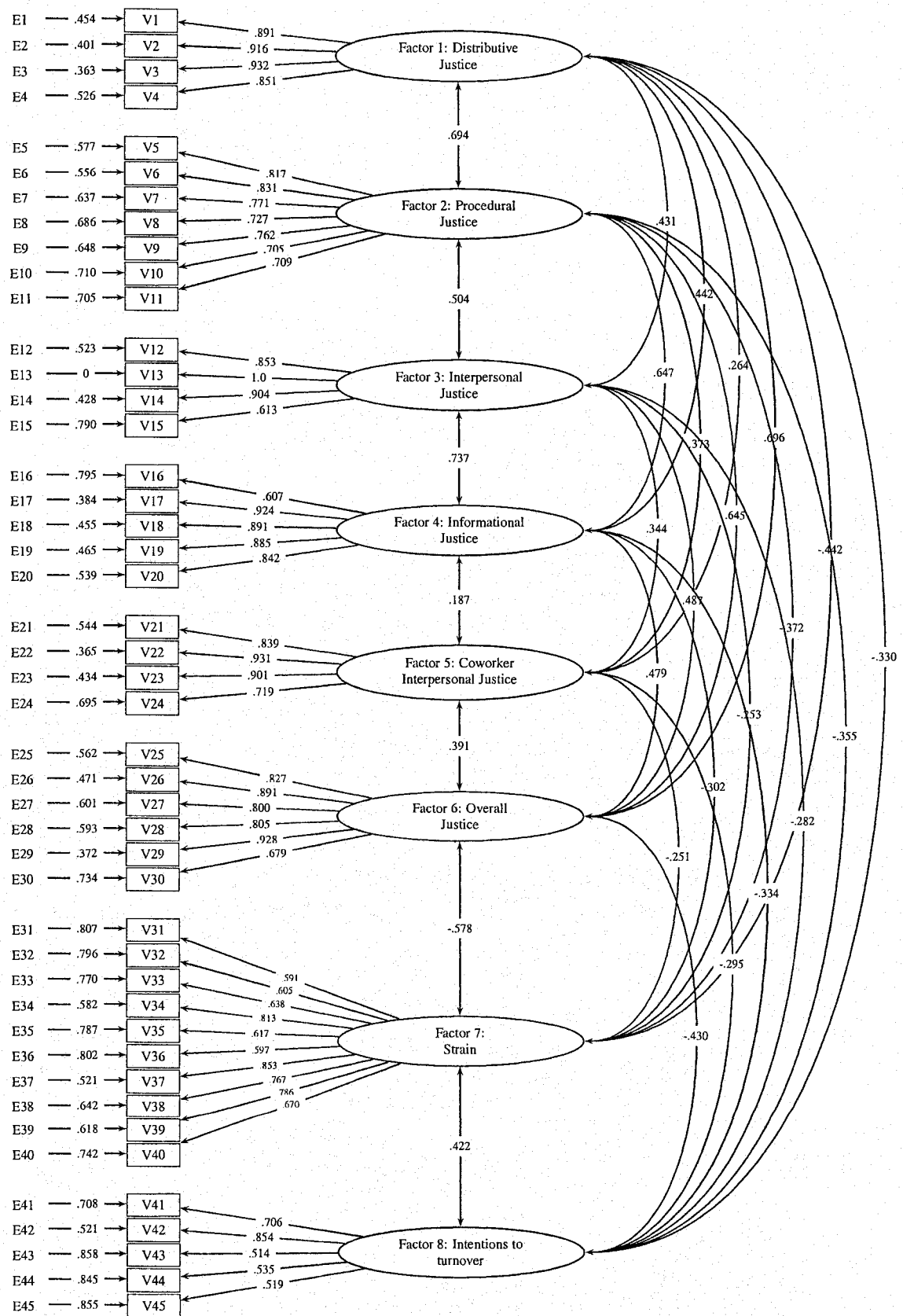


Figure 5.

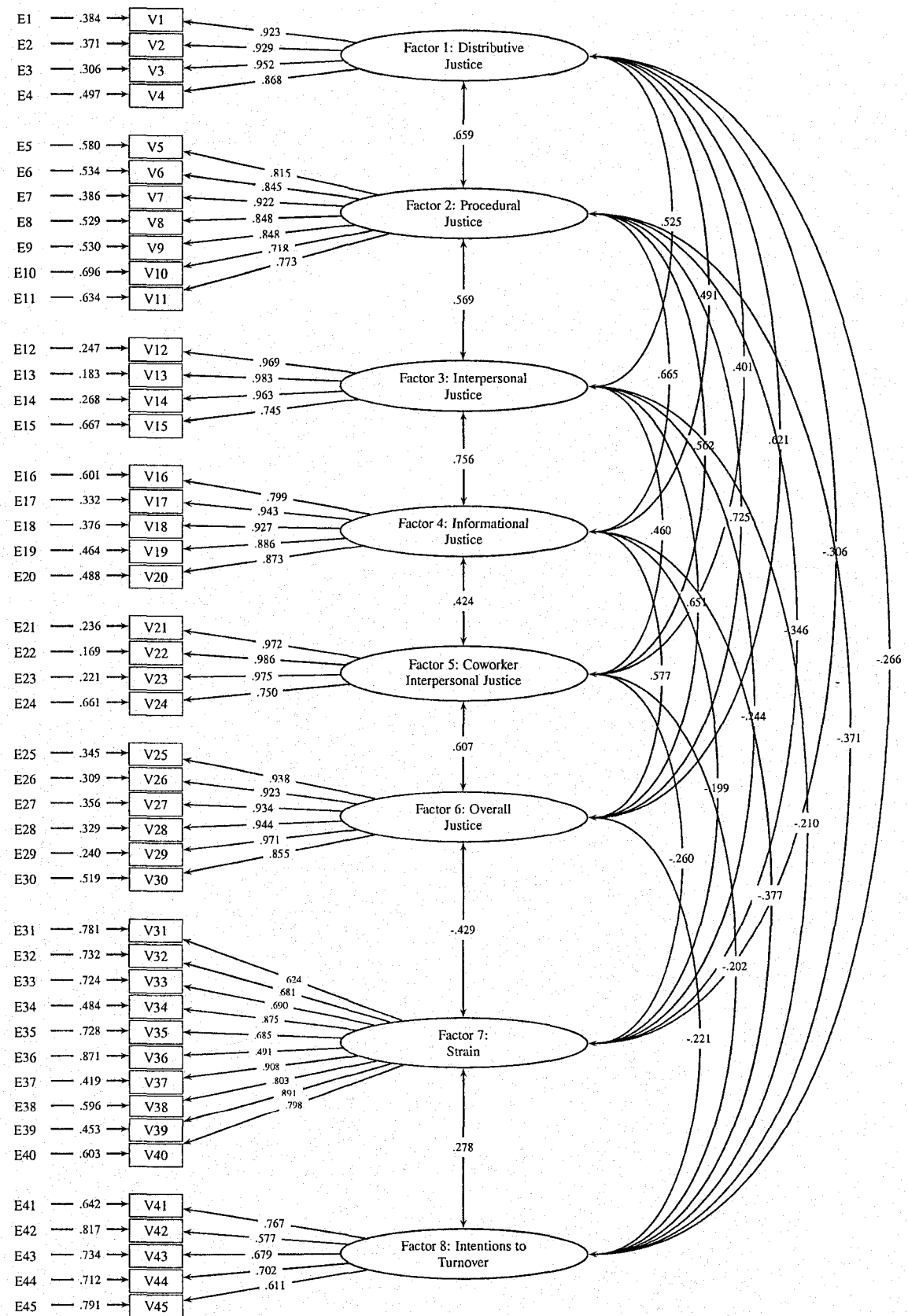


Figure 6.

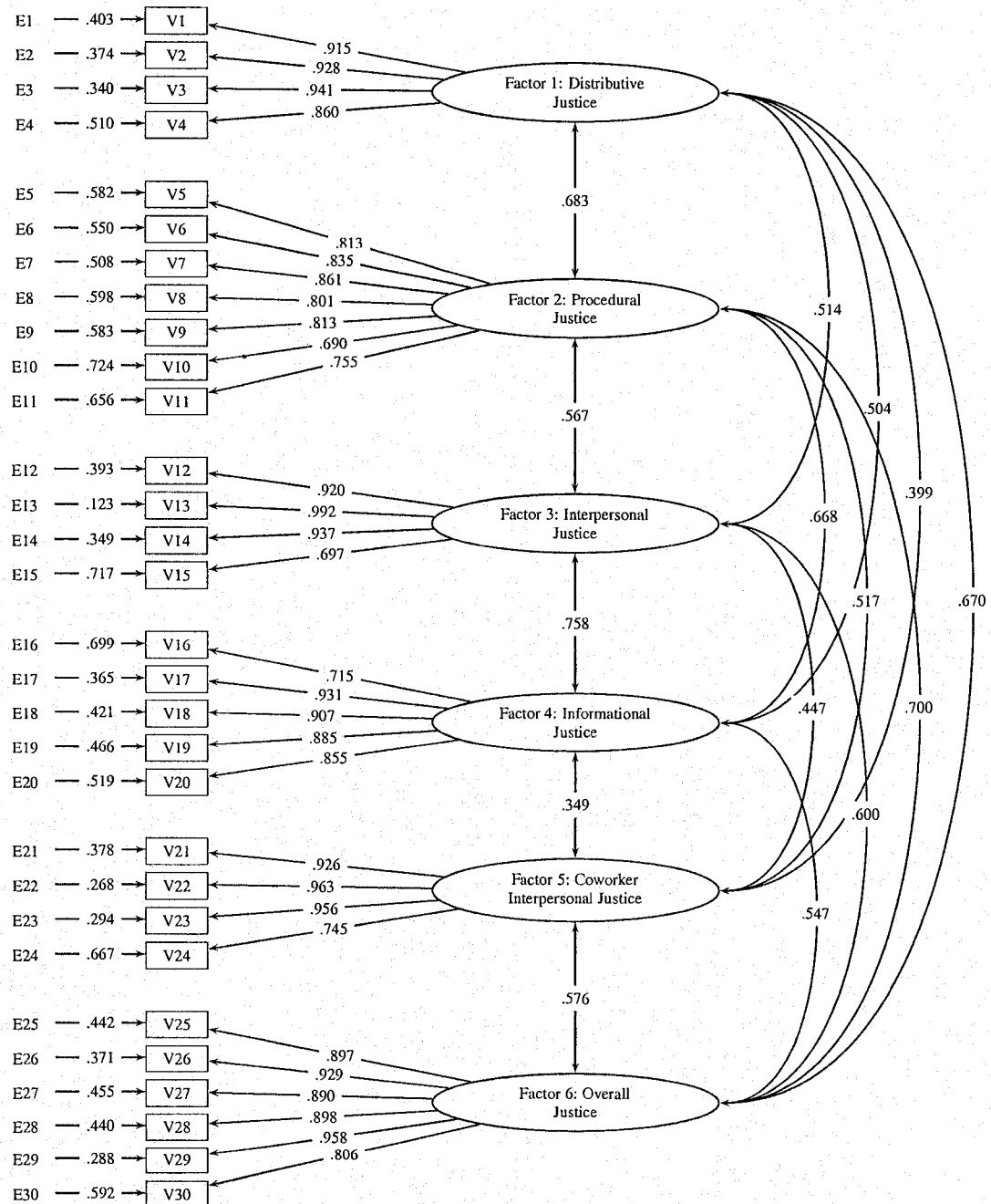
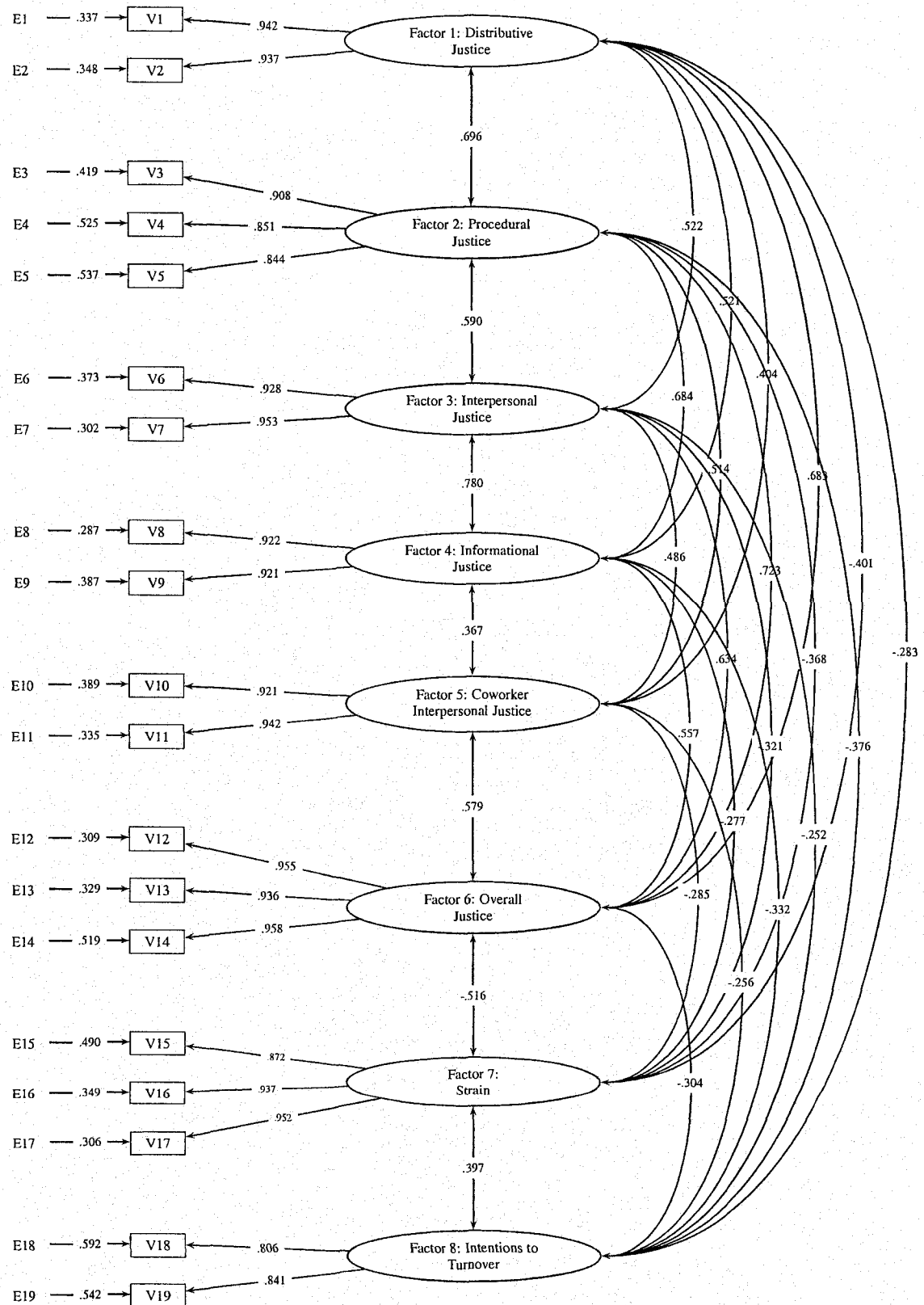


Figure 7.



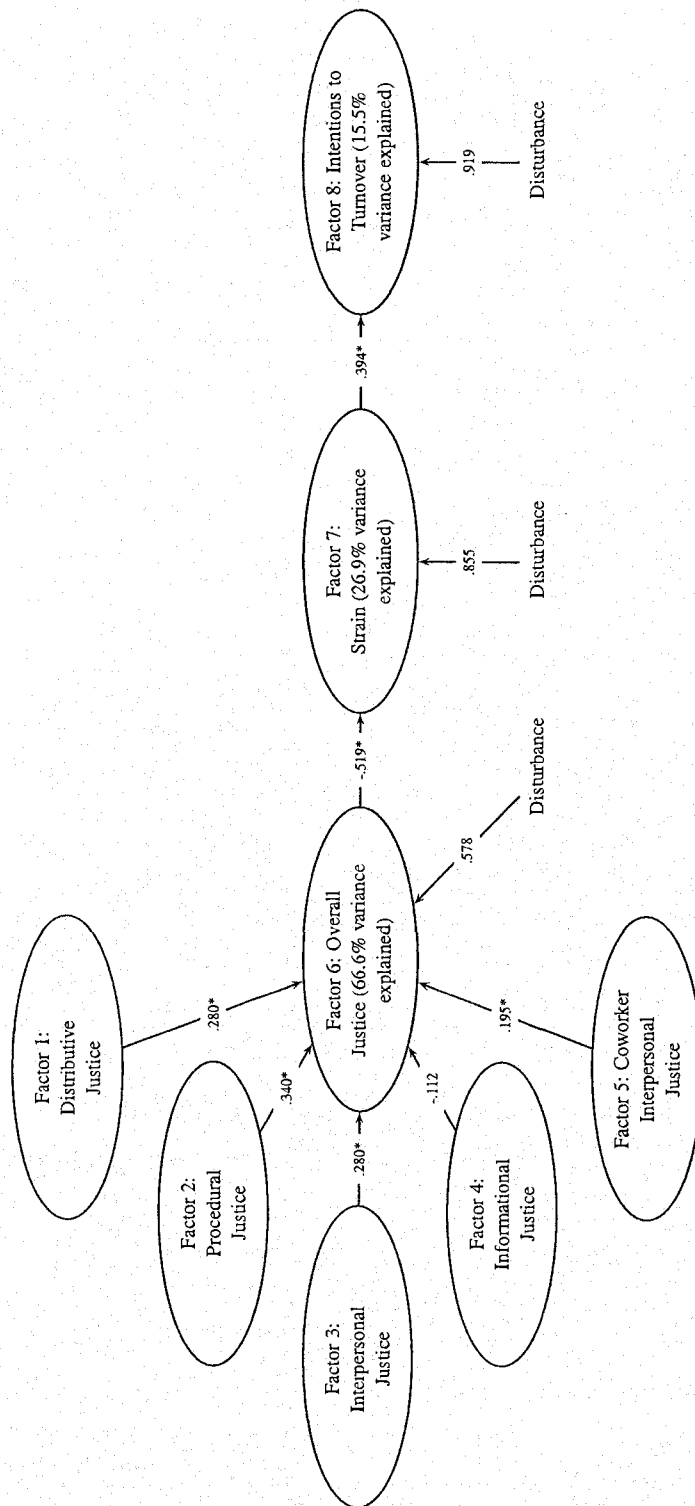


Figure 8.

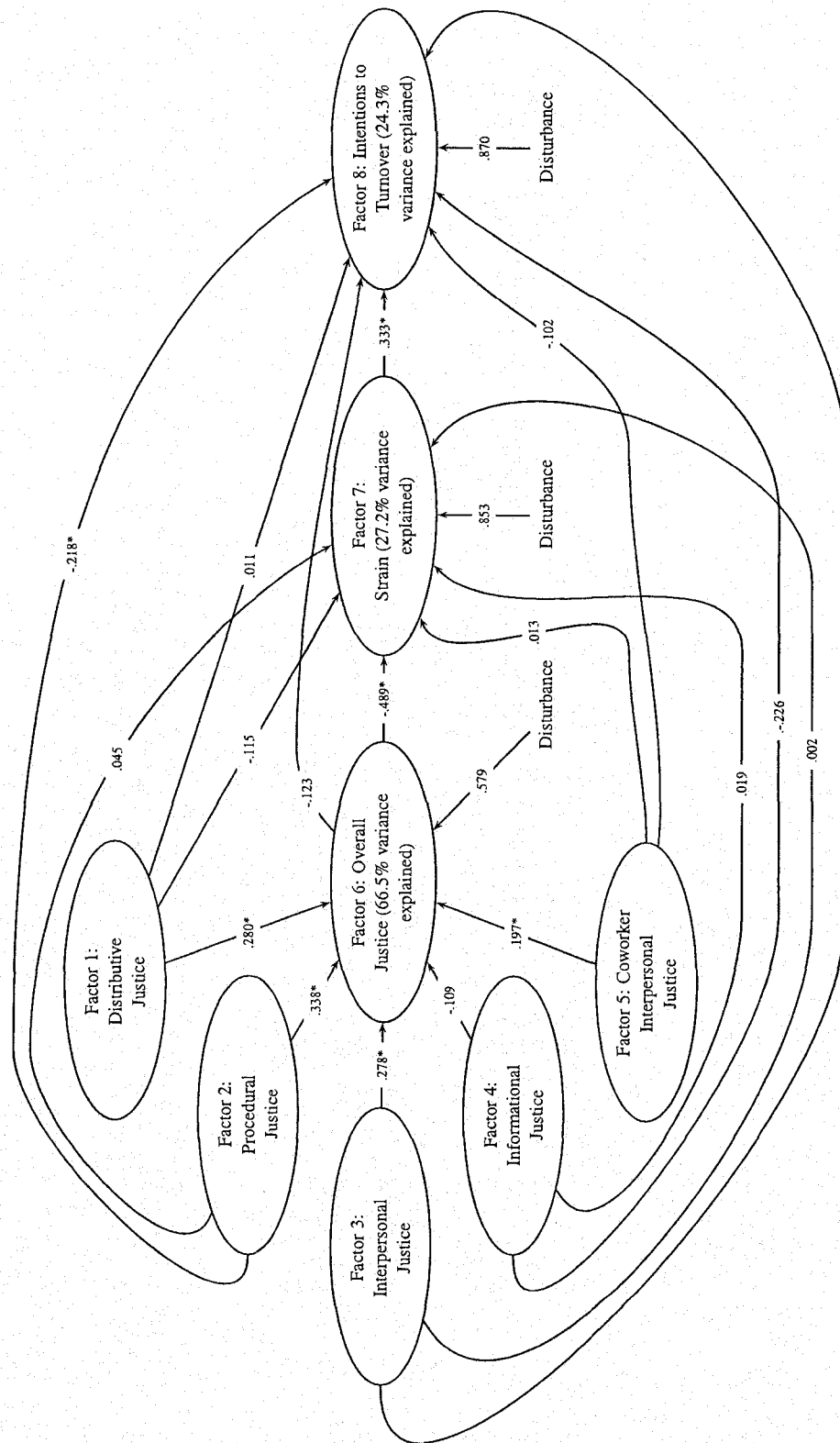


Figure 9.

Figure 10.

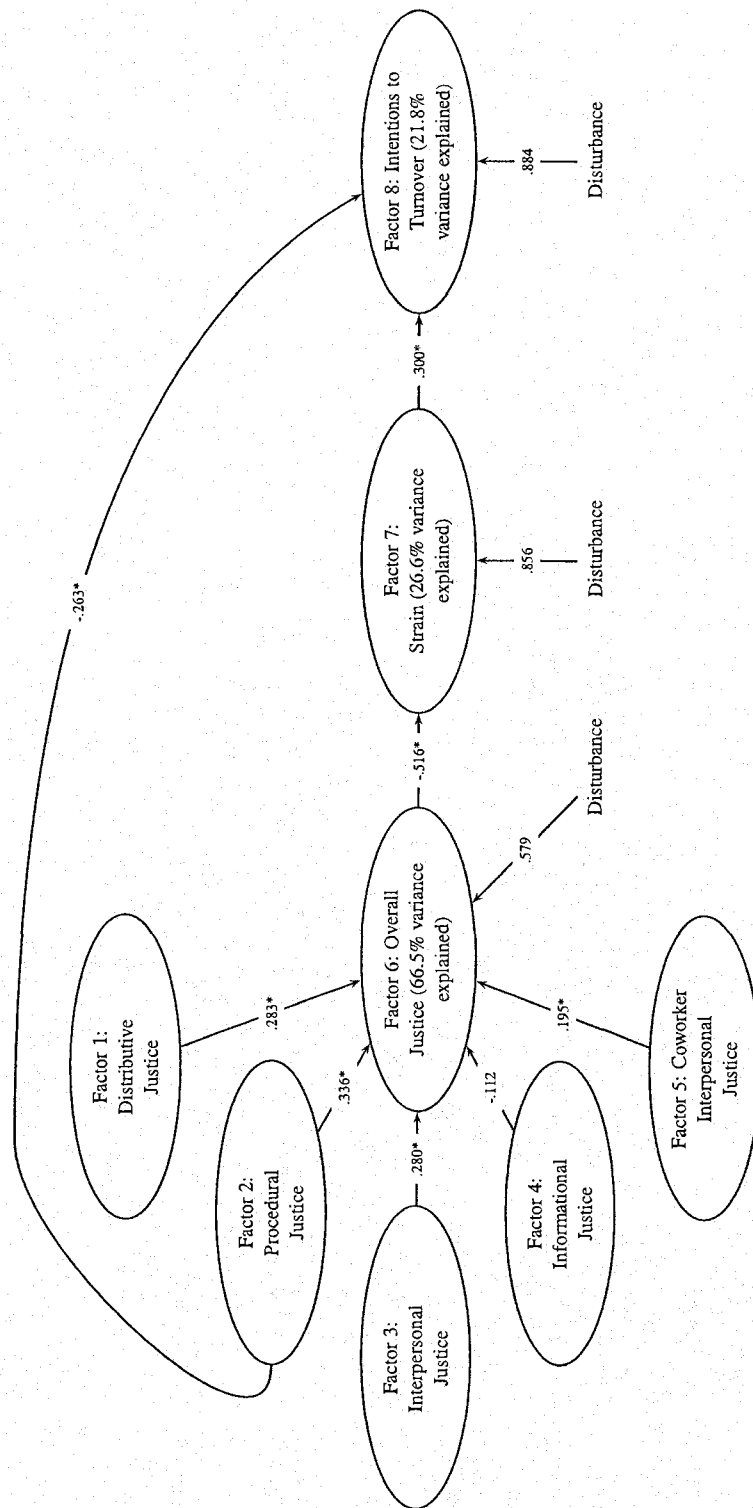
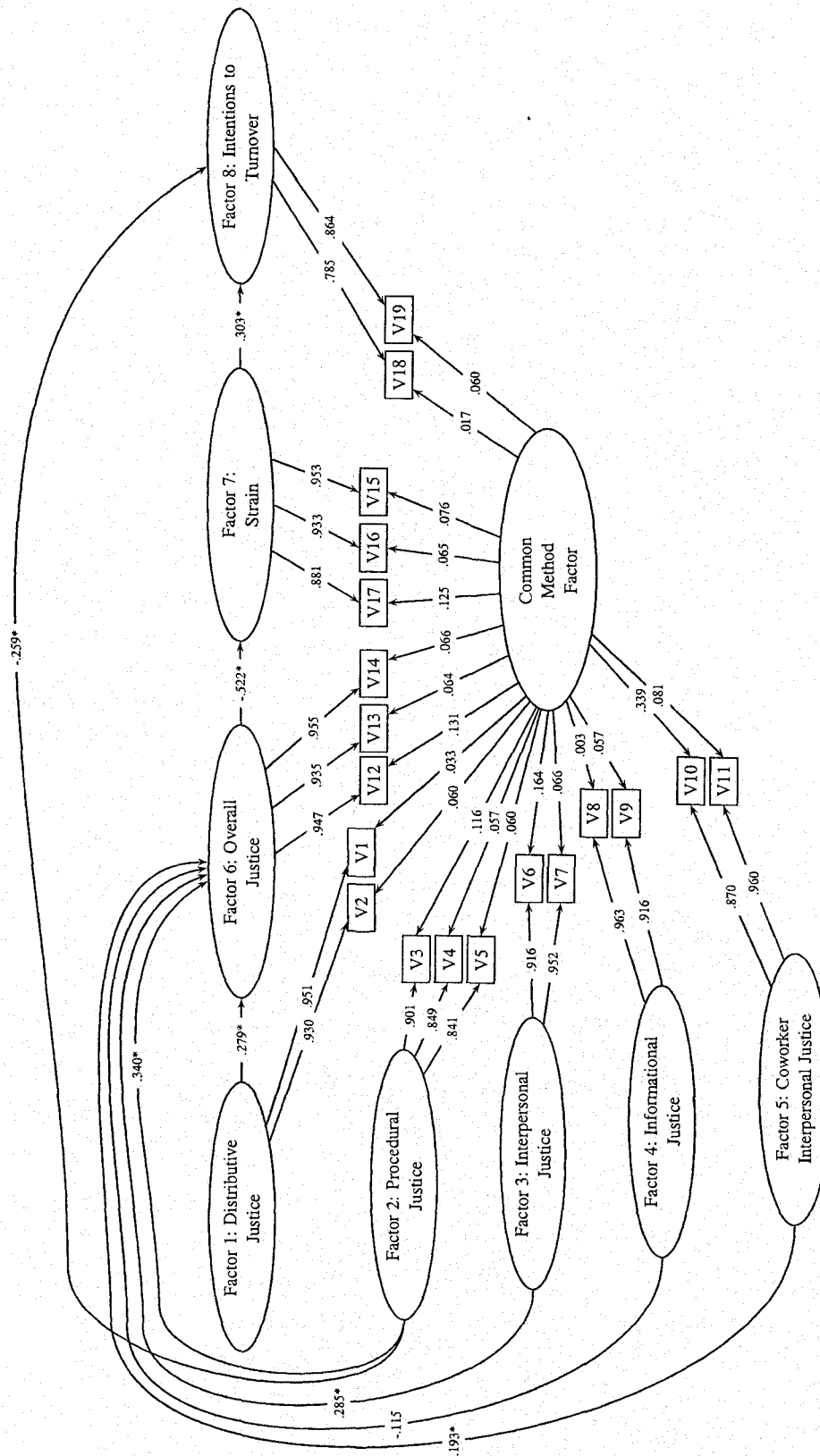


Figure 11.





**Saint Mary's
University**

Halifax, Nova Scotia
Canada B3H 3C3

Patrick Power Library

tel 902.420.5534

fax 902.420.5561

web www.stmarys.ca

Research Ethics Board Certificate Notice

The Saint Mary's University Research Ethics Board has issued an REB certificate related to this thesis. The certificate number is: 07-235

A copy of the certificate is on file at:

Saint Mary's University, Archives
Patrick Power Library
Halifax, NS
B3H 3C3

Email: archives@smu.ca
Phone: 902-420-5508
Fax: 902-420-5561

For more information on the issuing of REB certificates, you can contact the Research Ethics Board at 902-420-5728/ ethics@smu.ca.